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ABSTRACT

The paper provides an overview of the salient domestic agricultural policies that have affected agricultural trade, development, and growth in six countries. The overview identifies common themes in agricultural policies that contribute to an explanation of six countries' growth and development performances. The report is useful to policy planners concerned with broad development themes, including the role of agricultural trade in the development strategy, the problems associated with the transformation of agriculture, concern over food security, the influence of colonial agricultural policy, and relations between large- and small-scale agriculture.

Keywords: Agricultural policies, agricultural trade policy, economic growth, development, developing countries.

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SUMMARY

This report provides an overview of agricultural policies in six countries and the linkages between policy and measures of growth and development. The six countries examined are Ecuador, Guatemala, Kenya, Malawi, Malaysia, and Thailand. Among the common themes that emerged from the analysis were: 1) the important role of agricultural trade in the development strategy, 2) the problems associated with the transformation from subsistence to commercial agriculture, 3) problems associated with the need for producing high-value-added crops versus maintaining and achieving food security, 4) the critical impact of colonial agricultural policy and structure of contemporary policy, and 5) the conflict between large- and small-scale agriculture.

The Transformation of Agriculture

Related to the issues of agricultural imports and food self-sufficiency is the transformation of subsistence to commercialized agriculture. For Malaysia, a country with few subsistence producers and high levels of labor productivity, increasing the value-added of labor is the goal. In Thailand, extensification was used to increase agricultural production since the country has a large subsistence sector, but the growing land constraint forced policymakers to seek ways to increase agricultural labor productivity. Since smallholders are not integrated well into the market economy in the other four countries, increased labor productivity and better integration into the market are the policy goals.

For most countries with an outward-oriented agricultural strategy, increased commercialization of the agricultural sector favors large-scale agriculture as that sector typically has greater access to markets, credit, and inputs, especially in economies experiencing land pressure. In Malawi, estates have direct access to export markets, while smallholders must sell their production to government-controlled marketing boards. In Guatemala, large-scale private farmers dominate agricultural exports and are able to expropriate smallholder land. In Malaysia, however, the government facilitates the marketing of smallholder production of oil palm and rubber for the international market as in Kenya where smallholder production is the focus of production for exports and the overall development strategy. Therefore, smallholder income and development performance depend on the degree to which governments support smallholder agriculture in the context of the overall development strategy.

The Influence of Colonial Agricultural Policy

Colonial agricultural policy has been the most influential factor in shaping present agricultural policies in several of the countries studied because of the strong institutional support given to large-scale agriculture. Access to land, inputs, and credit is the most obvious advantage enjoyed by large-scale agriculture. In the former British colonies of Malawi, Kenya, and Malaysia, colonial policy created a large farm sector that has contributed to estate agriculture's prominent role in current development strategies.

Linkages between Agricultural Policy, Trade, Economic Growth, and Development

Although the report found that agricultural trade has shaped the pattern and extent of economic growth and development, export policy has been more important for determining the extent and nature of growth than policies toward agricultural imports.

The impact of export-promoting agricultural policies on development objectives depended on how the benefits of agricultural exports were distributed. The impact of exports on

development was greater if production of export crops was by smallholders rather than by estate farmers. In Malawi, Ecuador, and Guatemala, trade-oriented growth strategies restricted broad-based development because the benefits of agricultural exports accrued to the large estate owners. Smallholder pricing policies, which implicitly taxed smallholders, and lack of infrastructural support for smallholders reduced smallholders' benefits from export production, as exemplified by coffee and cacao in Ecuador.

Agricultural Policy, Trade, Economic Growth, and Development

INTRODUCTION

This report examines the linkages between agricultural policies and economic development by analyzing the experience of Ecuador, Guatemala, Kenya, Malawi, Malaysia, and Thailand.1/ Given the limits of space and time, this report cannot provide a detailed account of agricultural policy in each of these countries. Instead the report seeks only to identify common themes in the experience of each of the countries as a means of providing a framework for thinking about future policy options. These themes are: the dominant role of agricultural trade in development strategies, the problems associated with the transformation of agriculture, issues relating to food security, the influence of colonial agricultural policy, and the conflict between large- and small-scale agriculture.

The evidence of recent years indicates that export promotion strategies are more likely to foster the growth of employment and income than are the more inward-looking or import substitution approaches. 2/ Krueger's research in this area nicely summarizes the trade-oriented view of development.

> Experience has been that growth performance has been more satisfactory under export promotion strategies (meant as a general bias toward exports and not as a package of specific measures to encourage selective exports of particular items themselves induced by a bias toward import-substitution) than under import-substitution strategies. While it is impossible to specify a particular model of the growth process that will simultaneously satisfy all observers, the relationship

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1/These countries were selected to provide regional coverage (two countries each from Africa, Latin America, and Asia), and examples of countries with substantial agricultural sectors, wide ranges of income, and available data. The selection of these countries does not constitute approval or recommendation of their agricultural policies.

2/Krueger defines development strategies in terms of deviations from a free trade optimality criterion. Countries with import substituting strategies are those that "have adopted trade policies which diverge from the optimality criterion often by a large amount, by protecting their basic industries. ...policies have been employed to stimulate domestic production on the theory that nonagricultural sectors must grow at a rate above the rate of growth of domestic demand, and can do so only insofar as additional production substitutes for imports" (18).

between export performance and growth is sufficiently strong that it seems to bear up under many different specifications of the relationship. ...there are enough other observations, both for different time periods in the same country (Turkey and Philippines) and of countries (the positive side Ivory Coast, Colombia, and Malaysia, and the negative side India, Argentina, and Egypt), so that there is little doubt about the link between export performance and growth rates (20).

Most donor agencies also subscribe to this approach as the preferred method for promoting economic growth. The World Bank's World Development Report 1987 (WDR) is slightly more cautious than Krueger, but basically supports the view that the strong correlation between exports and growth is causal.

> ... the economic performance of the outward-oriented economies has been broadly superior to that of the inward-oriented economies in almost all respects. First of all, growth rates of GDP show a clear descending pattern from the strongly outward-oriented to the strongly inward-oriented economies. For the 1963-73 period the annual average was 9.5 percent for the strongly outward-oriented group, more than double the 4.1 percent attained by the strongly inward-oriented group. The respective rates for 1973-85 (7.7 percent and 2.5 percent) show that the gap has widened (36).

Recognizing that the export-oriented route to economic growth is often criticized because it results in an increasingly inequitable distribution of income, arguments are made that "Empirical evidence also indicates that an outward-oriented strategy can improve the distribution of income" (36). The examples cited in support of this argument (Hong Kong, Singapore, and Korea) are not very convincing, however.

Much of the earlier research on agricultural policies and the resulting patterns and pace of economic growth has concentrated on using an industrial export strategy for achieving economic growth, with agriculture frequently relegated to a secondary or even tertiary role. This focus on an industrial export strategy led to the pattern of urban bias that characterized development policies in many countries during the 1960s and 1970s. More recently, for many, if not most, developing countries, an export-oriented growth strategy relies on agricultural rather than industrial exports. In connection with this, two issues need exploration. First, what are the linkages between agricultural policies, economic growth, and development? Second, what are the consequences of increased agricultural exports by developing countries for the developed country agricultural exporters? The second question has received considerable attention already due, in part, to agriculture remaining outside the General Agreement on Tariffs and Trade (GATT), thereby allowing many developed countries to subsidize agriculture and agricultural trade. The interest groups responding to policies of subsidies to agriculture in developed countries have contributed to the political sensitivity in developed countries toward a development strategy that advocates substantial increases in agricultural exports. 3/

The nature of the linkages between agricultural policies and development are understood less well than those for industrial exports and development. Most donors presume that policies promoting increased agricultural exports will result in development. The acceptance of this

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3/Although the question of the degree of competition between, or compatibility of, developed and developing country agricultural exports is unsettled, the general view is that these exports are more compatible than competitive. Recent research in this area includes (7, 9, 22).

policy is borne out by the fact that major donors, most notably the World Bank and the International Monetary Fund (IMF), recommend a policy reform program in developing countries that relies on increased agricultural exports. In recent years, this advice has been an integral part of the conditions that have accompanied structural adjustment loans made by the World Bank to developing countries and the IMF stand-by agreements. Increased agricultural exports are said to enhance an economy's supply response to changing economic conditions and thereby improve balance of payments and income growth.

Despite the strong case made for export-oriented development strategies, caution needs to be exercised before accepting the policy recommendations that accompany this view. Critics of export-oriented policies maintain that such policies may result in the increased commercialization of agriculture, but not broad-based development. Unlike the industrial sector, agriculture in many countries is characterized by a noncommercial or subsistence sector that may not be able to respond readily to market incentives. Therefore, as exports are promoted, the entire economy may not benefit from the resulting economic growth.

Overview of Malawi's Agricultural Strategy

Malawi is frequently cited is an example of a country in Sub-Saharan Africa that has achieved sustained economic growth. 4/ Although a number of factors contributed to Malawi's rapid economic growth during 1964-79, the one that stands out is the expansion of an estate dominated export-oriented agricultural sector. The rapid growth in agricultural exports was achieved through the expansion of estate agriculture for the production of tobacco, sugar, and tea. The success of Malawi's agricultural export strategy during the 1980s was due to the policies and goals that were pursued with respect to domestic agriculture. For this reason, the issues of trade and domestic agricultural policies are inseparable.

The Estate Era, 1964-79

The emphasis of agricultural policy in post-independent Malawi can be divided into two broad periods. The first is the estate era that began shortly after independence (1964) and ended in 1979 with a financial crisis that resulted in a reduction in the total number of tobacco estates and, at least temporarily, slowed the growth of the estate sector. During this era, estate agricultural production was promoted at the expense of smallholder marketed output. The volume of estate tobacco production increased from 4,497 metric tons in 1967 to 43,000 metric tons in 1980. Similarly, estate tea production increased from 16,831 to 29,920 metric tons in 1980, while sugar production increased from 16,420 to 147,423 metric tons over the same period (table 1).

Between 1967 and 1980, growth in smallholder marketed production was much weaker than growth in estate output (tables 1 and 2). During this period, only marketed maize displayed significant increases in output. This was due largely to an expanded commodity marketing system through the marketing board ADMARC. As will be explained later, the policies that provided for the success of estates also explain, in large part, the weak performance of the smallholder agriculture.

The estate era can, in turn, be divided into two sub-periods: 1) the years when estate were promoted and 2) the years when estate acreage expanded and the gains made through the estate strategy were consolidated. During the first sub-period, the political and economic pre-requisites for a viable estate sector were established. Among the central questions to be answered during these years were whether the domestic resources needed to establish the estates could be generated and channeled to the estates, and whether Malawi's production of tobacco could be marketed reliably on an oligopsonistic international tobacco market. During the second sub-period, tobacco output was expanded to consolidate Malawi's position in the international market as a reliable tobacco supplier. Along with the need for rapidly expanding tobacco production was the granting of land access for commercial estates through the alienation of smallholder land, as political patronage, which strengthened the position of the political leadership.

4/During the late 1960s and 1970s, Malawi's macroeconomic growth performance was impressive compared with other countries in the region. The World Bank's 1982 World Development Report (WDR) lists the following average annual growth rates for GNP per capita during 1960-80: Malawi, 2.9 percent; Tanzania, 1.9 percent; Kenya, 2.7 percent; Zaire, 0.2 percent; and Mozambique, -0.1 percent.

Table 1--Malawi estate production of tobacco, tea, and sugar 1/

Year	Tobacco	Tea	Sugar
		Metric tons	
1960	2,656	11,829	NA
1961	2,663	14,296	NA
1962	2,967	13,339	NA
1963	3,237	11,915	NA
1964	3,360	12,380	NA
1965	3,843	12,958	NA
1966	3,647	15,367	3,357
1967	4,497	16,831	16,420
1968	5,776	15,812	19,867
1969	6,233	16,916	26,853
1970	10,350	18,731	32,749
1971	12,074	18,615	32,387
1972	14,101	20,682	33,850
1973	15,677	23,553	49,087
1974	15,895	23,408	49,472
1975	22,896	26,256	65,046
1976	22,769	28,306	84,407
1977	29,755	31,628	91,774
1978	31,500	31,690	92,846
1979	40,100	32,609	107,902
1980	43,000	29,920	147,423
1981	38,510	31,960	166,643
1982	50,200	38,480	171,794
1983	63,200	30,970	175,292
1984	54,890	37,330	149,898
1985	52,650	39,950	143,818
1986	51,220	38,970	155,805

NA = Not available.

1/ Dates refer to crop years. For example, 1986 refers to the 1986/87 agricultural season.

Source: (141).

Table 2--Malawi smallholder marketed production 1/

Year	Tobacco	Groundnuts	Cotton lint 2/	Rice	Maize
			Metric tons		
1960	12,925	18,769	3,693	6,482	15,071
1961	9,505	23,502	3,550	8,950	14,361
1962	13,459	32,863	5,179	4,601	454
1963	14,797	25,052	2,830	4,603	11,859
1964	11,561	17,700	4,082	3,599	27,955
1965	18,977	22,856	6,169	5,053	21,915
1966	14,972	42,173	4,189	4,047	56,887
1967	11,708	43,179	3,874	4,627	90,741
1968	8,745	22,773	3,831	2,052	83,685
1969	6,935	37,065	6,084	8,469	52,818
1970	11,816	26,499	7,576	9,376	36,424
1971	14,619	36,719	7,409	16,896	37,014
1972	17,731	39,628	7,246	19,995	64,692
1973	15,021	29,285	5,380	17,928	60,118
1974	11,579	28,751	7,132	21,928	65,533
1975	12,242	32,809	5,913	13,929	29,162
1976	14,491	32,589	5,944	24,772	65,106
1977	23,170	18,460	7,490	24,083	89,835
1978	23,732	11,145	8,041	31,103	116,025
1979	19,516	24,296	7,441	20,634	82,404
1980	11,340	31,484	7,669	16,863	91,205
1981	12,756	19,494	7,742	14,629	136,591
1982	8,708	10,682	5,007	12,623	246,086
1983	9,279	10,218	4,422	8,810	244,916
1984	19,163	9,867	32,100	10,201	296,443
1985	20,815	18,251	32,400	10,799	272,275
1986	17,170	53,050	21,000	11,878	111,331

1/ Dates refer to crop years. For example, 1986 refers to the 1986/87 agricultural season.

2/ Cotton lint is measured in equivalent units of seed cotton.

Sources: (141, 146).

The average annual growth trends for the volume of estate crop production and volume of marketed smallholder crops (tables 3 and 4) reinforce the point made earlier that smallholder growth was not strong during the estate period. 5/ From 1967-79, the volume of estate tobacco output annually increased 17.4 percent while sugar production increased at 15.7 percent per year. The annual growth rate of tea production (6.6 percent) is lower than that of either tobacco or sugar because the tea sector was well established at independence and the area planted to tea is limited by climate. In the same period, smallholder marketed output grew less consistently.

The high average growth rate for smallholder tobacco of 7.0 percent for 1967-79 reflects unusually high levels of output for 1977-79 and overstates smallholder performance. A similar point can be made for smallholder rice production (table 2). With these adjustments in mind, the overall performance of smallholder output is disappointing for the first period.

Table 3--Average annual growth rates for the volume of estate output 1/

Period	Tobacco	Tea	Sugar
		Percent	
1967-79	17.38	6.59	15.68
1980-86	4.43	4.32	-.95
1967-86	13.35	4.97	12.74

1/ These are average annual growth rates computed by fitting an exponential trend line to the data in table 1.

Sources: (141, 142).

Table 4--Growth rates for ADMARC purchases of smallholder output 1/

Period	Tobacco	Groundnuts	Cotton	Rice	Maize
			Percent		
1967-79	6.99	-5.35	3.99	16.13	2.45
1980-86	0.76	4.84	27.65	-6.68	7.73
1967-86	2.15	-4.23	6.50	3.29	8.32

1/ Average annual growth rates computed by fitting an exponential trend line to the data in table 2.

Sources: (141, 142).

The second period of Malawi's post-independence agricultural policy, 1950-present, is characterized by economic policy reform. By 1979, many of the newer estates were beset with

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5/The average annual growth trends are computed by fitting an exponential trend line to the data for the time period indicated. The advantage of estimating growth with a trend line is that the growth rate is much less sensitive to the selection of a base and ending years.

financial problems attributable to, among other things, weak management and under-capitalization.6/ The crisis in the estate sector coincided with a broader set of macroeconomic problems for the economy, such as an increasing debt service burden, increasing inflation, and reduced GDP growth rates. The economic crisis that began in 1979 was an important juncture for the direction of Malawi's agricultural policy. The economy's need for assistance was met initially by the IMF and World Bank through a series of loans, the first of which was made in 1981. Malawi's acceptance of what was one of the early structural adjustment loans (SALs) meant that donors, especially the World Bank and the IMF, were in a much stronger position to determine the direction of agricultural policy, at least in the near term. Although the range of issues addressed in the loan agreement was broad, most of the concern was focused on the agricultural sector. Donors were especially concerned with increasing smallholder income through reforms in output pricing and input procurement policy and by increasing smallholder productivity. Since Malawi is still undergoing structural adjustment, it is impossible to provide a complete analysis of the outcome of the SAL program. Nonetheless, it is clear that policies designed to expand smallholder production and income have replaced the earlier emphasis on expanded estate production. Although many of Malawi's economic problems have been addressed, the longer term success of the policy reform program is less clear. This point will be taken up in more detail in a subsequent section.

Agricultural Trade

Agricultural Imports

Malawi's agricultural import policy has been shaped by the government's desire to maintain self-sufficiency in staple grains. This policy for domestic food self-sufficiency is important to the government for economic and political reasons. Malawi is landlocked and relies on rail transport through Mozambique and South Africa for moving its imports and exports. In recent years, these transport routes have become increasingly insecure, thus rendering Malawi's exports and imports extremely vulnerable. Interruption of Malawi's transport routes could result in famine and political unrest; therefore, the government has adopted a policy of food self-sufficiency.

Malawi's goal of food self-sufficiency translates into meeting the entire domestic demand for maize, groundnuts, and rice through domestic production. To achieve this, the government requires that smallholders meet their own food needs before planting cash crops and enforces this goal by withholding extension services from farmers who do not meet their household food requirements. Therefore, net demand for maize in Malawi comes from nonfarm and food deficit households.

Wheat and milk are not produced in significant amounts. While these commodities are Malawi's two most significant food imports, they are relatively unimportant food commodities since they are consumed chiefly in urban areas.

Agricultural Exports

Malawi's development strategy throughout the estate and policy reform periods sought economic growth through increased agricultural exports. Agricultural exports in Malawi come from estate production; therefore, Malawi's agricultural export policies seek to promote estate production, often at the expense of smallholder production. The bias held by the government

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6/The newer estates are those that began operations after 1973. A more detailed explanation of reasons for the failure of many of these estates will be provided below.

in favor of estate agriculture stems from the following: 1) the government regards the estates as being more reliable as suppliers of exportable surpluses, and 2) estate interests fulfilled many of the political leadership's political requirements (135).

The impressive growth in exports from estate production during 1967-79 reflects, therefore, the government's support of estate agriculture. In this period, estate production accounted for most of the growth of agricultural production and exports; growth rates for sugar exports were the highest among all other commodities. 7/ Tobacco, tea, and sugar (the latter two are almost exclusively estate crops) accounted for an average of 83 percent of the value of agricultural exports between 1970 and 1984 (table 1). Production of smallholder-grown tobacco (fire-cured) grew unevenly, while estate-grown tobacco (burley and flue-cured) has been increasing consistently (tables 1 and 2). Tobacco exports, the second most important crop in terms of growth in export volume, grew over 10 percent during 1967-79, and were, therefore, second only to sugar in terms of growth in export volume.

Table 5--Average annual growth rates for volume of agricultural exports

Period	Cotton	Sugar	Tea	Tobacco	Groundnuts
			Percent		
1967-79	-10.65	86.92	6.31	10.45	-10.97
1980-85	8.52	-4.31	2.75	3.47	-34.66
1967-85	-10.74	50.92	5.05	8.15	-13.15

Sources: Calculated from (144, 145).

For the 1980-85 period, this situation changed dramatically with the negative growth of sugar exports and the growth of tobacco exports decreasing to 3.5 percent per year. Declining growth in sugar and tea exports was due more to international circumstances than to the domestic crisis. The domestic economic crisis did, however, affect exports of some types of tobacco.

Malawi is a significant producer of burley tobacco (an estate crop) and, therefore, limits production in order to keep international prices high. A quota system is used to allocate the production rights for burley which result in significant economic rents to those authorized to grow burley. The profitability of growing burley resulted in increasing exports even during the economic crisis (table 6). The output of flue-cured tobacco, however, suffered badly as a result of the crisis since the growth rate for 1967-79 was 16 percent and zero for the 1980s. Production of smallholder northern and southern division fire-cured tobacco grew slightly during the 1980s, compared with the earlier period. The impact of the economic crisis on tobacco production was mixed. Smallholder production increased slightly, while estate production decreased overall.

7/The growth rates for sugar exports were computed from a small base (production was zero as late as 1965); therefore, these rates are not entirely comparable with the performance of other crops.

Table 6--Average annual growth rates for the volume of tobacco exports 1/

Period	Southern division Fire-cured	Northern division Fire-cured	Flue-cured	Burley
		Percent		
1967-79	0.78	6.26	15.85	13.33
1980-85	.35	8.28	-.49	13.72
1967-85	1.40	1.14	11.05	14.96

1/ Growth rates for northern and southern division fire-cured tobacco are for the years 1969-79.

Source: (145).

Agricultural Exports and Development

The contribution by smallholders to export-led growth was insignificant due to economic growth from increased agricultural exports from estate production. As a result, smallholders did not benefit from Malawi's economic growth and their overall development level did not change. Therefore, there has not been a positive link between increased agricultural trade and development in Malawi.

Evolution of an Estate-Oriented Agricultural Policy

In order to understand agricultural trade policy and its impact on development in Malawi, it is necessary to understand the formulation of domestic agricultural policy in Malawi. This requires an examination of the colonial agricultural policy and the political and economic forces that confronted Malawi's leadership immediately after independence.

Colonial Agricultural Policy

The colonial economy in Malawi was divided into three sub-economies: the plantations, smallholder cash cropping, and the labor reserve economy. Plantations were encouraged by colonial administrators to make the Nyasaland Protectorate (Malawi) financially self-sufficient. Colonial authorities accorded preferential treatment to plantation owners by giving them, among other things, exclusive authority to grow certain crops while peasants were encouraged to produce food for the plantations, missions, and administrative centers. The labor reserve economy in which labor migrated to comparatively well-paid employment in neighboring countries resulted from restrictions imposed on labor in Malawi.

Plantation Economy

The plantation economy was the first sub-economy to develop under colonial administration. European land speculators purchased large tracts of land at concessional prices in the 1880s and established a substantial plantation sector during the first 10 years of colonial rule. By the turn of the century, Malawi's plantations (based on coffee) had a value of output greater than that of settler farms of Kenya or Southern Rhodesia ((148), p. 7). The colonial administration encouraged plantation agriculture by facilitating the transfer of land to Europeans and forcing Africans to seek wage employment by imposing a hut tax. Due to high

cost of transportation to and from the coast, Nyasaland's plantations could be competitive in international markets only through using inexpensive labor. For this reason, plantation owners urged the government to implement a hut tax on local labor to force labor to enter the wage labor market. Since plantations were virtually the only source of wage employment, it was hoped that the tax would ensure a steady supply of labor at low wages.

The strong growth of the plantation sector ended in 1902 as a result of a collapse in coffee prices caused by expanded Brazilian production and increasing production problems in Nyasaland. With the failure of coffee, the plantation sector turned to cotton, tobacco, and, in the limited areas where the climate was suitable, tea. The sector grew slowly to the end of the 1920s but never prospered due to the high cost of transport to the coast. On most plantations, moreover, problems included under-capitalization, lack of technical skills, and the short-term perspective of most European planters. 8/

In this unpromising commercial environment, plantation survival required the use of the cheapest possible labor. The first instrument for obtaining labor, the hut tax, did not entirely meet the needs of the plantations. 9/ A solution to the labor problem was finally achieved through settler control of land. A typical plantation consisted of large tracts of land, only a small proportion of which was cultivated at a given time. The predominant form of tenancy, called thangata, was a quasi-feudal arrangement under which peasants had to supply labor to the plantation to use a plot of land. Labor was sometimes remunerated.

Collapsing cotton and tobacco prices in the early 1930s dealt the plantation sector a severe blow. Many of the tobacco estates were abandoned and were not redeveloped until the tobacco boom of the 1970s. From the early 1930s to the mid-1960s, the plantation sector was broadly static in terms of output and technology. The tea industry was a partial exception to this since production annually grew 4 percent in the 1940s and 1950s. The continuing reliance on labor-intensive production methods was the result of exceptionally low wages. As a result of these wages, the plantation sector created a poor peasant society. Further, peasant production underpinned the viability of the plantations. Family food production on either tenanted or unalienated land resulted in a labor supply with wages below the level necessary to meet family subsistence needs. This food production was carried out mainly by women who often had insufficient labor and/or land to practice a satisfactory fallow rotation.

The Peasant Cash Cropping Economy

The coming of colonial rule provided a stimulus for African cash cropping due to increased food demand by administrative officials, religious missions, and plantations. The plantation sector's dependence on food supplies from the peasant sector represents a crucial link that

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8/The following is a quote from a 1906 dispatch to the Colonial Office from S. Simpson, an expert on cotton growing with a year's experience in Nyasaland. "Coffee prices fell, crops failed, when suddenly tempted by the high price of cotton everyone rushed into big acreage under this product. It was a general belief that no experience was essential to its cultivation and as to the most suitable varieties for the different situations, that point does not appear to have been considered at all. All and sundry received large grants for putting in cotton and no discrimination as to the capabilities of the applicants appears to have been practiced. In a country like this at least 75 percent of the planters have no experience of agricultural work whatever, and would absolutely starve in most countries" (148).

9/The majority of Africans lived on unalienated land ("Crown Land"). In addition to estate work, adult men had the option of meeting tax obligations by growing cash crops or migrating abroad to work. Settlers' interests had only limited success in persuading the administration to close the cash cropping and migration options.

endures. 10/ Although the plantations valued surplus food production by the peasant sector greatly, the development of peasant export crop production was a potential conflict for plantation interests. This conflict of interests was not only over the land and labor necessary to produce the export crops, but also for the support of a colonial administration anxious for some form of economic development (148). In the first decade of colonial rule, the administration was unambiguous in its support of plantation interests. However, with the failure of coffee production in 1902, the subsequent debacle with cotton, and, finally, with the collapse of tobacco production in the early 1930s, the inefficiency of much of the plantation sector became increasingly clear. As a result, in the first four decades of the century, administration policy moved from cautious sanctioning of peasant production of export crops in areas where there was no sharp competition for resources with the plantations to one of intervention to promote widespread peasant production. In fact, by the late 1920s, peasant export production had become the leading factor in achieving economic growth. In 1928, 93 percent of the cotton crop was produced by peasants as was 63 percent of the tobacco crop in 1929 (148). Particularly important during this period was the development of the peasant dark-fired tobacco industry which occurred in the 1920s. Dark-fired tobacco was introduced by estates in the southern region using the "visiting tenant" system, a scheme whereby the profit to the estate was primarily derived from its position as a monopsonistic purchaser of the crop from peasant producers. In 1926, the government entered the same business by creating an agency, the Native Tobacco Board, with a legal monopsony over all tobacco grown on unalienated land. Handling dark-fired tobacco had always been profitable; soon after its creation, the Native Tobacco Board made a significant contribution to government revenues (152).

None of the other peasant-grown crops achieved success comparable to that of tobacco. Given the low commodity prices of the 1930s, there were no other crops sufficiently profitable to support the level of marketing infrastructure and extension/research services that were provided by the Native Tobacco Board. In 1934, the administration launched a campaign to increase cash crop production. But again, low prices, minimal extension and research support, and the inaccessibility of many areas to Native Tobacco Board purchasing agents meant that incentives did not exist for widespread compliance with the government's wishes (148).

The early 1950s marked a turning point for peasant cash cropping for two reasons. First, the Nyasaland government was shaken by the severe famine in 1949 during which maize was imported and much of the government machinery was diverted to anti-famine measures. African sources describe the 1949 famine as unprecedented in its scope and severity, a view corroborated by authoritative sources within the colonial administration (138). As a result, in the 1950s, food security became the government's priority since food security was seen as a precondition for further development of both peasant- and plantation-produced export crops.

The second important influence on agricultural development was the generally favorable terms of trade for primary commodities in the 1950s. Higher commodity prices permitted the estate tea industry to continue to grow despite the greatly increased labor costs implicit in the hike in food prices. Estate tobacco production, however, drifted downward. 11/ Notable growth

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10/While the estate sector is a food crop producer, overall it is always an important food purchaser. There are two reasons for the food deficit of the estate sector: 1) it is a rational management strategy to concentrate supervision and labor on the higher valued crop, and 2) theft by workers is difficult to control in the case of food, but is unlikely to occur with tea or tobacco.

11/In the 1970s, about 50 percent of current input costs for tea production were labor costs. Given the lower fertilizer use in the 1950s, the share of labor costs was probably somewhat higher.

occurred in peasant production of rice, pulses, groundnuts, and, from the late 1950s, cotton. 12/

On balance, Malawi's colonial experience with agricultural policy was mixed. In the early colonial period, large-scale agriculture was emphasized, while by the end of the colonial era smallholder agriculture was the dominant form of agricultural production. As a result of smallholder participation in the independence movement, smallholders formed expectations about increased economic growth that put pressure on the nationalist leadership that gained power in 1964. Peasant interests notwithstanding, the political pressures on the new government by various groups ultimately reoriented policy, again, in favor of estates.

Evolution of an Estate Strategy, 1967-79

The peasants and a small group of educated Malawians (members of the colonial government's civil service led Malawi to independence. The existing political circumstances in Malawi at the time united the two groups to achieve independence despite their differences. The African elite, who had broad representation in the coalition, needed the backing of the peasantry to be regarded by the British as a legitimate political force. The peasantry, likewise, were represented primarily by Dr. Banda, a needed spokesperson. 13/ Both groups had objectives to obtain from independence. Most of the African educated elite were concerned with removing the barriers to their economic and social advancement that existed in colonial society. Peasants' complaints, however, are less easily generalized. Certainly, most peasants were concerned with the various discriminatory agricultural policies of the colonial government. Most peasants resented interference with their agricultural activity by the government's increasingly firm enforcement of soil conservation regulations. And the minority of peasants residing in the southern Mulange and Thyolo districts resented the occupation of land by estates. Other groups in the southern region objected to thangata. Still another group, located in the central region, objected to the colonial government's tobacco pricing policy that discriminated against African farmers while favoring large expatriate producers. Thus, while the educated elite and the peasants shared a desire to see far-reaching changes in economic and social policy that they hoped would accompany independence, their expectations centered on very different issues.

Shortly after independence, a confrontation between the representatives of the educated elite and Dr. Banda resulted in the expulsion of virtually all of the political leaders in the country except those owing allegiance to Dr. Banda. 14/ The removal of political rivals from the policy formulation arena allowed Dr. Banda to concentrate on development policy. One of the

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12/ A third factor, the impact of which is difficult to assess, is the change in government agricultural expenditure. In the 1950s, annual government expenditure on agriculture grew from an average of K200,000 for 1946-49 to an average of K1.1 million for 1956-59, representing 5.9 percent and 8.9 percent, respectively, of total government expenditure. As is the case today, the Department of Agriculture concerned itself almost exclusively with the peasant sector. It is very difficult to assess the impact of this government activity on production. Much of the expenditure on agriculture financed an ill-conceived and ultimately self-defeating program of soil conservation, the coercive aspects of which became a focal point in African opposition to European rule.

13/ As of this writing, H. Kamuzu Banda is the Life President of Malawi. Prior to his involvement in the nationalist movement, he was trained in, and practiced, medicine in the United Kingdom.

14/ This confrontation is known as the Cabinet Crisis and proved to be an important turning point in the formulation of development policy in the country. An excellent account of the event can be found in (153).

key arguments that Dr. Banda used in his campaign against continued British rule was that Malawians would have greater opportunities for economic development after political independence. Having raised the level of expectations for benefits from political independence, the new government was under pressure to demonstrate the benefits of sovereignty. Dr. Banda was convinced that these opportunities would come from the agricultural sector. Senior policymakers faced the issue of whether agricultural development should be promoted through an estate-oriented strategy, a peasant-oriented strategy, or some combination of the two.

There were clear attractions to a dual strategy. On the one hand, promotion of peasant agriculture would meet the demands and expectations of peasants in Dr. Banda's constituency; and the British, other bilateral lenders, and the World Bank could be expected to support such a policy. For these reasons, Dr. Banda allowed elements of the late colonial era policy favorable to peasants to continue and introduced new decidedly pro-peasant policies. The tilt against the estates consisted of limited land reform and initiatives to allow some African small-scale farmers to grow what had previously been European crops (tea and flue-cured tobacco). The land reform consisted of the government requiring estates to yield unutilized land for settlement by peasants, and, in a few cases, entire estates were broken up.

The reasons for pursuing an estate strategy ultimately are less obvious than those for aiding smallholder development. Although none of the coalition members had an interest in promoting large-scale agriculture, there were factors that made the estate strategy attractive to the government. Four of these factors stand out in retrospect: 1) ethnic group considerations, 2) a demonstrated presidential prejudice in favor of estates, 3) the leadership's perceived need for discretionary funds, and 4) questions about the ability of the smallholder sector to generate sustained growth in output for exports.

The first three points are outside the scope of this paper. 15/ The latter point, however, is part of an issue that lies at the heart of agricultural trade policy in many of the countries considered in this study: how to organize agricultural export production? The question is, at least in the short run, who will receive the direct benefits of increased agricultural exports? On the one hand, estate agriculture would be easier for the government to organize and control, but only a small group of landowners would accrue the benefits thereof. The promotion of smallholder agriculture, however, would benefit a larger number of farmers directly, but would be slow to get started and have a less certain outcome.

In Malawi, policymakers discussed the issue of smallholder versus estate agriculture during the late 1960s. Doubts about the reliability and the productive potential of smallholder agriculture centered on dissatisfaction with the output performance of peasants and doubts about the compatibility of a pro-peasant policy with the anticipated revenue needs of the public sector. 16/ Further, many in government regarded peasant agriculture as being far more susceptible to climatic variations than was estate agriculture. Against the background of two poor harvests, the Government of Malawi's 1968 Economic Report expressed doubts about the ability of the peasant sector to sustain the rate of growth of marketed output that was thought necessary to underpin rapid growth in other areas of the economy, especially the public sector. A factor further contributing to pessimism concerning the potential of peasant agricultural growth was a collapse of the market for dark-fired tobacco, which was the peasant produced crop with the greatest output and foreign exchange earnings of any smallholder crop. Since Malawi was already the single largest exporter of dark-fired tobacco,

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15/ A detailed account of all four of these issues can be found in (136).

16/ Revenues were needed to compensate for the reduction in the British budget subvention as well as to finance a number of development projects that were being contemplated.

it appeared unlikely that there could be much expansion in production of this high-value peasant crop without adverse price effects. Apart from official pessimism about the production and market prospects for peasant agriculture, the government felt that the peasant sector was providing an inadequate contribution to government revenue. The 1968 Economic Report commented:

> Rural non estate agriculture, which accounts for over 40% of Malawi's total domestic production, contributes only 0.7 million (pounds sterling) to direct taxation (in minimum tax) and otherwise is taxed indirectly through what farmers consume. Out of total tax revenue of 10.7 million (pounds) in 1968, these farmers perhaps contribute around 2 million (pounds) or just under 20%. The government is particularly aware of this imbalance and is anxious to ensure that this sector should contribute more to general taxation but in such a way that incentives to produce are sharpened and not reduced.

It was against this background of skepticism about smallholder agriculture that the estate-oriented strategy was formulated, although the estate orientation was ostensibly part of a dual sector development strategy that included smallholders. Smallholder agriculture was to have been the primary beneficiary of donor assistance, particularly through existing integrated rural development projects. Also, the government pursued the pro-estate strategy to satisfy its political requirements. Although the government publicly supported components of the dual strategy, inherent conflicts in this approach precluded successful development of the smallholder sector. This conflict centered on the pricing policy for smallholder cash crops but included a range of other issues as well.

Conflict Between Estate and Smallholder Agriculture

In order for the estate strategy to expand, four main ingredients were necessary: land, an assured international market for the crops produced, experienced managers to operate the estates, and inexpensive sources of financing. A detailed analysis of how the first three requirements were met is outside the scope of this paper. 17/ The latter requirement, however, deserves elaboration here since much of the financing for the tobacco estate expansion came from taxing smallholder production of cash crops and, therefore, constituted the principal source of conflict between the two agricultural sub-sectors. By suppressing the prices paid for smallholder marketed output to a point that was well below export parity, ADMARC was able to generate substantial profits on its crop trading account. Smallholders receive, on average, 29 percent of the auction price for tobacco production, while estate tobacco producers obtain the full auction price by ADMARC (table 7). It has been estimated that between 1964-80, the real value per capita of ADMARC crop purchases from smallholders was constant (140). This occurred at a time when international commodity prices generally were buoyant. ADMARC's profits were invested in enterprises, including the domestic banking sector, that supported the expansion of estates. 18/ The problem with such a tactic, from the point of view of smallholders, is that such a pricing policy creates significant production disincentives for smallholder cash crop production. It is the disincentive effect resulting from ADMARC's pricing policy that accounted for the low growth rates of smallholder marketed output during the 1970s.

17/ A complete account of how the estate tobacco and sugar industries were organized can be found in (136).

18/The control of the country's commercial banking system by ADMARC and Press (a holding company owned by the President) resulted in substantial increases in loans to estate agriculture. The details of this policy can be found in (132, 136, 140).

In addition to ADMARC's monopsony position vis-a-vis smallholder's marketed output, other factors contributed to the government's ability to exploit the smallholder. First, ADMARC controlled the types of crops grown by smallholders as well as the supply of many of the purchased inputs used by smallholders. Although the extent of ADMARC's control over inputs, licensing, and output marketing was probably not a critical factor for subsistence farmers, they were important policy tools for directing the resources that were allocated to, and among, production of smallholder crops. By determining the price of purchased inputs and marketed output, ADMARC was able to exercise considerable control over the profitability of labor time in smallholder agriculture. Second, cross border marketing opportunities for smallholders in Malawi were virtually nonexistent. Frequently, peasant farmers sold part of their output in neighboring countries when prices in domestic markets were unattractive. For Malawian peasants, however, this was not an option during the 1970s since each of the neighboring countries (Tanzania, Mozambique, and Zambia) was pursuing policies that made marketing agricultural commodities in any of these countries less attractive than in Malawi. As a result of these factors, ADMARC taxed smallholder agriculture and directed those resources toward the estate sector (table 7).

Table 7--Ratio of producer to auction price for tobacco

	Smallholder fire-cured			
	Northern	Southern	Estate	
Year	division	division	Flue-cured	Burley
		Percent		
1970	35	35	100	100
1971	27	21	100	100
1972	38	28	100	100
1973	36	30	100	100
1974	22	15	100	100
1975	18	14	100	100
1976	17	16	100	100
1977	17	15	100	100
1978	39	47	100	100
1979	38	52	100	100
1980	34	48	100	100
1981	24	33	100	100
1982	15	20	100	100
1983	29	37	100	100

Source: Calculated from data in Appendix C.

A further consequence of ADMARC's pricing policy was a net migration of labor out of peasant agriculture in search of more attractive employment opportunities. The pricing policy pursued by ADMARC occurred in the context of increasing land pressure in most administrative districts in Malawi. The increasing population pressure caused many plots to be subdivided to the point where they were no longer adequate for subsistence farming. 19/ As

19/During the 1970s, the population growth rate was estimated at 2.6 percent per year.

a result, one or more family members were forced to find sources of off-farm income. During the 1970s, the number of males who worked full time in smallholder agriculture declined by 1.4 percent per year, while at the same time, part year labor commitments to smallholder agriculture increased (140). As noted earlier, there is a well-established tradition of migration abroad by Malawian labor. Therefore, a logical source of employment for smallholder labor was international migration, especially to the mines in South Africa. This option, however, was closed in 1974 when official migration to South African mines was prohibited by the Malawi government. As a result, the remaining migration option for the vast majority of smallholder labor seeking off-farm employment was the expanding estate sector. The pattern of interdistrict migration during this period shows a large movement toward the districts with newly formed estates (133).

Distributional Consequences of Agricultural Policy

The consequences of Malawi's agricultural policies for the distribution of income in the country can be approximated by considering the change in the structure of the economy during the 1970s. The rapid growth of the agricultural estate sector was the principal change in the economic structure. Between 1964 and 1984, the estate sector's share of GDP rose from 4 percent to 7 percent, while the smallholder sector's share of GDP declined from about 51 percent to 32 percent. In addition, the estate sector and related industries accounted for half of all wage employment as of 1977. ADMARC's pricing policy with respect to smallholder marketed output caused the real net value per capita of purchases from smallholders to decline during the 1970s.

The distributional impact of such a policy is obvious. The pricing policy depressed incomes in the smallholder sector, while the preferential treatment provided to the estates increased that sector's demand for resources, especially labor, relative to the smallholder sector. Consequently, labor left peasant agriculture and moved into estate employment. This movement had the potential to improve distributional equity in the long run, had remuneration in the estate sector been higher than the implicit wage in the smallholder sector and the estate sector been able to absorb enough peasants. Wages in the estate sector, however, were lower than those in peasant agriculture, and labor absorption rates were not maintained.

This unusual situation of transferring labor to a comparatively low wage sector was the result of the land pressure faced by smallholders. Those individuals migrating from the smallholder sector to the estate sector, either for part- or full-year employment, were unable to claim sufficient land to operate a viable farm. This was a consequence of the distribution of land within the peasant sector. Although generally regarded as equitable, land distribution still maintained differences which, in a poor, land scarce economy, were of vital importance.

The economic changes in Malawi and the government's failure to pursue programs to ameliorate the consequences of these policies caused distributional equity to worsen. 20/ In light of the nature of economic change in Malawi, it is not surprising that the research conducted on income distribution in Malawi demonstrated increasing distributional inequity (135). Comparing the distributional patterns generated for the two time periods revealed an increase in the value of the Gini coefficient from 0.491 in 1968/69 to 0.530 in 1977.

20/Health care, education, and rural development provided the government with opportunities to ameliorate increasing income inequity. The expenditures on health care and education were not sufficient to correct the negative distributional trend. Expenditures were made often on facilities that served middle and upper income groups such as urban hospitals and higher education. Although these facilities may have been necessary, they did not benefit the rural poor.

Crisis Within the Estate Sector

In 1979, Malawi's economic progress was curtailed dramatically due to the following: 1) the rapid increase in public sector expenditures on both the development and recurrent spending accounts, 2) government's borrowing from foreign commercial lenders, 3) the weak management, financial structure, and performance of many of the tobacco estates, 4) the 1979 world recession with its high international interest rates, and 5) the deterioration of external transport links as a result of disturbances in Mozambique.

All but the third point can be omitted from the present analysis. 21/ The financial problems a number of tobacco estates experienced were largely the result of their rapid rate of expansion during the 1970s. In order to expand tobacco output as quickly as possible, many of these new estates accepted unusually high debt-to-equity ratios, and inexperienced and alienated management. 22/ Under these circumstances, even the most experienced managers would have required ideal weather and market conditions to achieve an acceptable financial performance. The deteriorating international economic situation in 1979-80 made an acceptable performance nearly impossible for many of the newer estates. Since Malawi's commercial banks were committed heavily to these enterprises, the banks attempted to salvage what was seen as a rapidly deteriorating situation by placing many of the troubled estates under the direct supervision of the commercial banks. This resulted in the introduction of new management teams to supervise the operation of these estates. As a result, the commercial banks closed about 10 percent of the estates, reducing estate sector output. The increases in output that eventually did occur were the result of increased efficiency, rather than the result of more acreage being cultivated. For this reason, the estate sector did not create many jobs after 1979.

The crisis that hit Malawi in 1979 should be seen as the end of an era rather than as a mere downturn in economic activity. The fragile financial condition of many of the new estates exposed during the crisis was evidence that the main component of the government development strategy had proved unsuccessful. The funds that ADMARC acquired from the smallholders through taxes and invested in the estate strategy were lost. One estimate indicates that ADMARC's rate of return on its investment portfolio during this period was negative (132). Therefore, the effort to establish a large-scale, export-oriented, growth strategy was unsuccessful. While considerable growth occurred, the investment proved to be a poor one with results that could not be maintained. The problem of establishing a self-sustaining agricultural export strategy remained. The solution to this problem would be attempted by a slightly different coalition of development planners.

Agricultural Policy in the Reform Period

The economic crisis of 1979 caused the Malawi Government to seek financial assistance from the World Bank and the IMF. In June 1981, the Malawi Government and the World Bank signed the first Structural Adjustment Loan (SAL) agreement. A second loan was signed in 1983 and a third loan in 1985. As of this writing, negotiations for a fourth SAL are still underway. The importance of the SAL program and World Bank and IMF involvement in Malawi represents an important change in the direction of the country's development strategy. Although the IMF and the World Bank had been active in Malawi prior to 1979, their positions

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21/For a detailed account of these issues prior to and during the crisis period, see (136).

22/Many of the estate managers recruited came from what was then Rhodesia. The obvious racial tensions, along with the generally short-term outlook of these managers, did not bode well for successful management.

at the time of the crisis were powerful ones since there were no other donors with the willingness and the necessary resources to assist Malawi's economy. Consequently, the World Bank and the IMF firmly negotiated which policy reforms would accompany the SAL. Due to the donors' tremendous influence, Malawi's development strategy was redirected. Therefore, among other things, components of the estate strategy (ADMARC's smallholder pricing policy) were altered, thereby limiting the ability of ADMARC to tax smallholder agriculture to subsidize estates.

Objectives of The Structural Adjustment Loan Program

The primary goal of the SAL program in Malawi, as in other countries, has been to improve the supply response of the economy to changing market conditions. The World Bank and the IMF hoped that SAL policy reforms would increase exports, improve the balance of payments account, and increase income growth. Although the specific policy reforms recommended may vary with different SALs, there are three broad types of reforms: macroeconomic stabilization, the liberalization of institutions, and the liberalization of markets. In Malawi, the three types of reforms sought to foster the development of smallholder agriculture.

In the first SAL, the IMF and World Bank hoped to improve the following: 1) the balance of payments, 2) price incentives and income policies, 3) resource management, 4) the government investment program, and 5) public sector institutions. In the short run, the major positive contribution to the improvement of the balance of payments came from a reversal in the decline in the volume of traditional, peasant-produced export crops (tobacco, groundnuts, and cotton). This was mainly to be achieved by substantial improvement in the prices paid to producers for these crops. An interministerial price committee would recommend the actual prices using a price-setting methodology in consultation with the bank. (This methodology was in sharp contrast to that pursued during the 1970s.) The only SAL measure proposed to foster estate production was SAL financing for a study of possible diversification options.

The first SAL in Malawi was experimental in many ways for the World Bank and the IMF. Although the bank had acquired considerable project experience in Malawi, it was relatively inexperienced with the broader macroeconomic functioning of the economy. 23/ As a result, some of the policy reforms advocated by bank officials were not implemented as originally expected. For example, the bank stipulated that the prices paid to smallholders be increased. The government, however, responded by substantially increasing the relative price of maize. Instead of the desired result of large increases in export crops, the country was faced with a maize surplus.

The second SAL was both a response to the experience with, and issues of, the first SAL. Those issues that dealt specifically with agriculture included: 1) improved price incentives for agricultural production; 2) improved financial and operational efficiency for ADMARC, in part, by forcing it to sell off assets not connected directly with smallholder agriculture; and 3) mitigating supply constraints, enhancing productivity, and encouraging diversification in the estate sector through establishing an estate credit facility. The increased involvement of World Bank representatives in the price setting exercise meant that producer prices were more in accord with the SAL II targets. The higher prices did increase smallholder production of export crops. In fact, by 1986/87, marketed maize production had declined as smallholders shifted out of maize as a cash crop and into groundnuts, pulses, and tobacco (to a lesser extent).

23/ For example, few of the numerous biannual country reports on Malawi mentioned the estate sector or the specifics of its operation.

The reform of ADMARC has proceeded more slowly than anticipated. During the 1970s, ADMARC invested heavily in enterprises outside the smallholder sector. In an effort to rationalize ADMARC's portfolio, the SAL agreements required divestiture of most of these assets. ADMARC has experienced difficulties meeting this requirement because of the lack of qualified buyers. The objectives for the agricultural sector under SAL III were: 1) to "encourage increased production and agricultural diversification for exports as well as maintaining the goal of food self-sufficiency through the provision of smallholder producer price incentives and the establishment of a credit facility for the estate subsector; 2) to eliminate subsidies on smallholder fertilizer and ensure estate use of fertilizer; and 3) to complement the estate credit facility, by establishing an estate sector management, training and extension service" (143).

The World Bank has accepted Malawi's justification for its maize self-sufficiency policy on the grounds explained earlier in this section. This policy has a high opportunity cost since the vast majority of maize produced in Malawi is the traditional rather than the high yielding variety. Therefore, a large amount of land is set aside for the production of a low-value crop using low production technology. Although this policy hurts the income growth potential of smallholders, it is maintained for food security and political reasons. 24/

With regard to the fertilizer subsidy removal program agreed to in SAL III, the Malawi Government pledged to phase out the approximately 25-percent subsidy on fertilizer sold to smallholders. The bank's concern over this issue stemmed from the implications of the subsidy for the government's budget and the consequent misallocation of fertilizer. The program's continuation was questioned by the government's concern over rising fertilizer prices, due to the subsidy removal, depreciating domestic currency, and the implications for food self-sufficiency. Although the issue of whether or not the subsidy removal program will be continued or modified has not been finally resolved, it seems likely that donors and the Malawi Government will agree to a limited, targeted subsidy program, the Fertilizer Subsidy Removal Program (FSRP).

Estate and Smallholder Performance

Due to SAL-sponsored policy reforms for estate agriculture, the government consolidated the financial and managerial position of the estates that experienced problems. Although the estates' financial position has improved, the increases in output from improved efficiency have been modest compared with growth in the first period, 1967-79.

As noted earlier, one of the primary objectives for the policy reform process has been increased output and income in the smallholder sector. This goal reflects the view held by the World Bank and the IMF that improved supply response is the appropriate policy. Thus far, efforts to achieve this objective in the context of the SAL program have concentrated on using higher producer prices. Although it is difficult to isolate the impact of prices on output, the change in pricing policy is the most plausible explanation for the change in output trends that occurred in the early 1980s. The average annual growth rate for most smallholder marketed output was higher in 1980-87 than in the earlier period.

The best available indicator of the change in smallholder cash income is the value of ADMARC purchases (table 8). The value of ADMARC's purchases rose substantially beginning in the

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24/These remarks are not intended to stand in judgement of Malawi's food self-sufficiency policy. In the author's view, there are legitimate reasons for Malawi's food policy. It is worthwhile, however, to point out the economic cost of such a policy.

1982/83 marketing year, which refers to the 1981/82 agricultural year. 25/ Between the marketing years 1978/79 and 1981/82, the average annual value of ADMARC's purchases was K28.2 million. Over the next 4 marketing years, 1982/83 to 1985/86, the average annual value of ADMARC's purchases from smallholders was K61.8 million, an increase of 119 percent over the earlier period.

Table 8--Nominal value of ADMARC purchases, 1970/71-1985/86

Year	Total purchases	Year	Total purchases
	1,000K		1,000K
1970/71	9,542	1978/79	28,460
1971/72	14,411	1979/80	27,633
1972/73	15,075	1980/81	29,086
1973/74	12,842	1981/82	27,613
1974/75	16,004	1982/83	40,903
1975/76	14,654	1983/84	45,802
1976/77	21,414	1984/85	72,760
1977/78	23,867	1985/86	87,897

Sources: (144, 147).

Although this increase in smallholder revenue is impressive, the benefits of the pricing policy reform have been concentrated among the larger landholders. Only those farmers with sufficient land for subsistence food requirements are eligible for extension assistance for cash crop production. As a practical matter, this means that smallholders with less than a hectare of land do not grow significant quantities of cash crops. The National Sample Survey of Agriculture for 1979/80 found that less than 25 percent of farmers had access to land holdings of more than 1 hectare.

Agricultural policies pursued during the 1980s have been less transparent than those pursued during estate period. In part, this is due to a lack of consensus among domestic groups about the future direction of agricultural policy since many of the political forces that gave rise to the estate strategy were still in place at the time the SAL program was initiated. The donor community (most notably the World Bank and the IMF) has been the most influential in defining the shape of the country's agricultural policy. World Bank-IMF policies have enhanced the economy's supply responsiveness by substantially improving the macroeconomic environment and liberalizing both markets and institutions. At the heart of this set of policies has been the effort to strengthen commercial smallholder agriculture. Although smallholder marketed output of food crops and, to a lesser extent, export crops has responded to the incentives offered, the impact of the SAL program on smallholder agriculture has been far from uniform. This should not be construed as a criticism of the SAL program, since the policy reforms required by the SALs have accomplished many of their initial goals. What

25/Recall that these data refer to ADMARC's marketing year, which is the previous year's crop. For example, the crop planted in 1985 and harvested in 1986 is referred to as the 1985/86 crop, but is included in ADMARC's accounts for 1986/87.

remains to be done is to extend the benefits of the policy reforms to a larger segment of the smallholder population, while protecting them from the adverse consequences of increased commercialization of agriculture.

Summary

The links between Malawi's development and agricultural policies provide an important example of how a strong agricultural export performance can hurt broader development goals. Malawi's agricultural strategy promoted large-scale production for exported growth. In order to establish an agricultural export sector, Malawi subsidized estates with financing coming from the taxation of smallholder agriculture. The need to transfer financial and labor resources from smallholders to estates caused a conflict between the expansion of agricultural exports produced on estates and the economic growth and development of smallholder agriculture. As 75 percent of the population work in smallholder agriculture, the success of an agricultural export strategy based on estates seriously hurt the development prospects of the smallholder sector. This inference is supported by the evidence on distributional equity and basic needs measures. Not only is there strong evidence of increased distributional inequity, but representative basic needs indicators for Malawi show only modest improvement over the past 20 years.

In analyzing the development and agricultural policies pursued by the Malawi government during 1967-79, one can be critical of the policy choices made by the government. It should be recognized, however, that despite the strong performance of smallholder agriculture during the late colonial period, there were legitimate doubts about the ability of smallholder agriculture to serve as the basis of a self-sustaining agricultural export strategy. In addition, the country's leadership had shortrun political needs that could be best met through the pursuit of a large-scale agriculture for exports. Although a smallholder-oriented export strategy could meet development objectives, such a policy is more difficult and time consuming to implement. The pricing policy reforms that accompanied the SALs resulted in immediate and impressive increases in smallholder output. In order to sustain this growth and promote the increased commercialization of smallholder agriculture, it will be necessary to devote resources to technical improvements in smallholder production, improved markets for inputs and outputs, and research in support of smallholder farming.

The challenge that Malawi presently faces is how to maintain its export performance while establishing the basis in the smallholder sector for self-sustaining growth and development. This is not only an economic challenge, but a political one as well. Donors will find it necessary to maintain the policy reform gains realized by the SAL program and assist in commercializing agriculture to foster development and growth. To complicate the objective, these policies need to be implemented in a way that meets a set of political needs to ensure a stable governing coalition that is able to support the reformed development strategy.

KENYA

Overview of Agricultural Policy

The agricultural sector figured prominently in Kenya's economy at independence in 1963, accounting for approximately 35-40 percent of GDP and 75 percent of total employment (127). Nonmonetized, subsistence agriculture accounted for about 22 percent of GDP at factor cost between 1964-72, while monetized agriculture accounted for 16 percent over the same period.

Kenya's development strategy has emphasized the establishment of an import substituting manufacturing sector and financed the agricultural sector. Therefore, the agricultural sector has been responsible for: 1) generating foreign exchange earnings to finance import substituting manufacturing, and 2) reducing foreign exchange expenditures through minimizing food imports while promoting self-sufficiency in the country's staple grain. The agricultural sector in Kenya has provided stable foreign exchange earnings. In addition, the agricultural sector has provided a strong food base for the pursuit of nonagricultural development by minimizing the use of foreign exchange to finance food imports. Although the agricultural sector has not provided food self-sufficiency in all years due to weather, it has met the majority of staple food requirements in most years. Table 9 demonstrates Kenya's relative self-sufficiency in maize, its staple food crop. For 1966-86, the average ratio of production to total use of maize in Kenya was 101 percent. On average, domestic production in Kenya has met domestic needs for maize.

Recent agricultural policy in Kenya can be divided into three periods. In the first period, the late colonial era (1952-63), agricultural policy reversed an earlier bias and favored increased smallholder production of cash crops, especially tea and coffee. Prior to the early 1950s, agricultural policy favored large-scale agriculture, which meant European agriculture. In response to the Mau Mau uprising, however, authorities sought to gain the allegiance of African agriculturalists by relaxing existing restrictions. This program of policy reform centered on the Swynnerton Plan and covered most of the post independence period (1963-80). Therefore, the process of land reform and growth in smallholder output continued. The third period (1980-86) was one of policy reassessment, during which many of the agricultural policies and institutions created during the early post independence years were reexamined in light of fiscal austerity.

In order to understand the success of Kenya's agricultural policies and their linkages to the country's more general development success, it is necessary to understand the importance of land policy since the end of World War II. The redistribution of land from independence allowed a significant number of small-scale producers to participate in the rapid growth of exports. Kenya's policy of not taxing agricultural exports, the comparatively equitable distribution of land after independence, and the support provided to coffee and tea producers meant that the benefits of income growth accrued to a broader group than was the case in Malawi.

During the colonial period, most of the best agricultural land in Kenya (the "White Highlands") was reserved for Europeans. This policy, along with a critical shortage of land in Kenya, caused access to land to become one of the key issues in the struggle for independence. With independence and the cancellation of restrictions on land use along racial lines, smallholder access to high potential agricultural lands resulted in more intensive land use and substantial increases in agricultural output. The increased availability of land, along with widespread diffusion of high-yielding maize varieties and increased tea and coffee production, accounted

Table 9--Sources of supply for maize

Years	Production	Consumption	Net imports	Exports	Net exports	Total use 1/	Share of production to total use
			1,000 metric tons				Percent
1966	1,451	1,585	149	3	-146	1,597	90.86
1967	1,633	1,261	0	157	157	1,476	110.64
1968	1,600	1,086	1	249	248	1,352	118.34
1969	1,400	1,003	0	178	178	1,222	114.57
1970	1,500	1,288	14	25	11	1,489	100.74
1971	1,300	1,132	29	2	-27	1,327	97.97
1972	1,700	1,435	0	20	20	1,680	101.19
1973	1,600	1,140	0	154	154	1,446	110.65
1974	1,600	1,307	1	56	55	1,545	103.56
1975	1,900	1,507	0	130	130	1,770	107.34
1976	2,195	974	0	105	105	2,090	105.02
1977	2,205	1,869	0	8	8	2,197	100.36
1978	1,895	1,927	0	13	13	1,882	100.69
1979	1,450	1,630	0	104	104	1,346	107.73
1980	1,750	1,753	364	10	-354	2,104	83.17
1981	2,200	1,725	334	5	-329	2,529	86.99
1982	2,340	1,828	89	6	-83	2,423	96.57
1983	2,070	1,962	0	39	39	2,031	101.92
1984	1,700	1,843	250	0	-250	1,950	87.18
1985	2,650	1,959	315	0	-315	2,965	89.38
1986	2,750	2,089	0	250	250	2,500	110.00

1/ Total use is equal to production plus imports minus exports.
Source: (118).

for most of the rapid output growth, approximately 4.6 percent per year, experienced by Kenyan agriculture between 1964 and 1972 (130). It should be noted, however, that the preferences shown smallholder agriculture after independence did not mean that large-scale agriculture was phased out, since in the early 1970s agricultural estates still accounted for half of marketed output (125). In this regard, Kenya's agricultural strategy differs sharply from that pursued in Malawi. Whereas Malawi's agricultural strategy resulted in a conflict between smallholder and estate agriculture, this was decidedly not the case in Kenya where the two subsectors seem to have coexisted without significant cost to development.

Colonial Agricultural Policy

The objective of colonial agricultural policy in Kenya, as in Malawi, was to create an economic environment that would attract and support Europeans. The colonial authorities hoped that by creating a European large farm sector they would generate additional freight

for the railroad running between Mombasa and Uganda. Smith argues that European "...settlers could not have been attracted, and encouraged, to remain in Kenya without sufficient protection to raise their standard of living to that being offered in Australia, New Zealand and South Africa" (125).

In order to achieve the necessary standard of living for European farmers, colonial agricultural policy was designed to protect the economic interests of this group. The central and most controversial features of agricultural policy were the differential access to land and restrictions on crop production enforced by colonial authorities.

> Pre-Independence agriculture was characterized above all by the division of the land between Europeans and Africans. Asians were virtually excluded from the ownership of agricultural land, and Africans were prohibited from acquiring land in the "White Highlands", which by the Agricultural Ordinance of 1955 became officially invested with the more neutral title of the Scheduled Areas. The Scheduled Areas occupied some 7.5 million acres, ... which was not far short of the acreage of the non-scheduled areas, the former "reserves" or Native Trust Lands (108).

While European settlers had their choice of land, the African population was confined to native reserves consisting of a block of land reserved for an African ethnic group. Those living in the reserves practiced small-scale agriculture largely to meet their subsistence needs but also produced some cash crops. Perhaps most important from the European point of view, the reserves were a source of agricultural labor for the European community. As Leo argues "...the reserves were first and foremost a reserve of labor--often by pressure and sometimes by out-and-out force" (122). 26/

This view is supported by Heyer who argues that:

> Before the second world war, government activities in many African agricultural areas were mainly concerned to provide the conditions under which European agriculture could flourish. Government administrative, agricultural and veterinary services were directed towards ensuring firstly, that African areas remained sources of cheap and plentiful labor and secondly, that they supplemented agricultural production for export and for the urban domestic markets to the extent that this was possible (a) without competing for markets with large farms and (b) without jeopardizing the cheap labor supply (109).

As a practical matter, the distinction between scheduled and nonscheduled areas coincided with that between large- and small-scale farms. At independence, there were approximately 1 million households in the nonscheduled areas. Most of the agricultural holdings in these areas

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26/ To force African labor to leave the reserves, the colonial government ensured that the land provided for the reserves was of poor quality and, therefore, could not support large households. The government also imposed taxes, thus creating a need for cash in African households. The alienation of over 20 percent of the best agricultural land from Africans for settlers forced many Africans to seek wage income on settler estates. The corresponding overpopulation and subsequent soil erosion in the remaining African reserves led to additional African migration to the estates in search of wages. The 1901 hut tax, 1910 poll tax, and duties on food imports used by Africans forced still more Africans into the wage economy and provided estate agriculture with a large labor surplus. The formation of the Department of Native Affairs in 1907, which restricted Africans from living on European land other than as laborers, and 1921 Native Registration Ordinance forcing Africans to carry passes indicating periods of employment and unemployment also helped to sustain a large labor surplus for estate agriculture.

were less than 5 hectares, in contrast to the large farms in the scheduled areas that were 600-700 hectares each (109).

During the Second World War, the restrictions on peasant agriculture were eased to accommodate the increased need for food due to the large number of military personnel stationed in Kenya. Special legislation was passed that increased government intervention in agriculture through guaranteed prices, crop insurance, and increased credit. Although these incentives were directed toward the European farmers to encourage the production of maize and other products, expanded marketing facilities for African farmers also were provided to encourage production. The increased demand for agricultural output revealed the growing shortage of land in both the large and small farm areas (113).

In the years immediately following the war, the government's agricultural policy concentrated on increasing exports and ensuring adequate supplies of food for the urban areas. In the government's view, this responsibility could be met best by the large farm sector despite large marketed surpluses produced by the small farm sector during the war. For at least a few more years, the small-scale farmer was once again relegated to meeting the food needs of the African population.

The Swynnerton Plan

It is ironic that the declaration of emergency in 1952 and the government's desire to have a more attractive economic program to offer to Africans forced the government to consider alternative agricultural policies. The policy program that the government chose, the Swynnerton Plan, proved to be an important one since it influenced the shape of agricultural policy for the remainder of the colonial period and well into the post-independence period. 27/ The importance of the Swynnerton Plan was its recognition of the potential of smallholder agriculture in Kenya. Given the shortage of land that existed at the time, the plan would intensify smallholder agriculture. At the heart of the plan was:

> the... basic philosophy that "Sound agricultural development is dependent upon a system of land tenure which will make available to the African farmer a unit of land and a system of farming whose production will support his family at a level, taking into account pre-requisites derived from the farm, comparable with other occupations" (128).

In keeping with this view, the two major provisions of the Swynnerton Plan were: 1) a land reform that called for the consolidation of small pieces of land in those areas where land fragmentation was serious and the registration of individual freehold title to land, and 2) the expansion of crop and livestock production for the market through farm plans, extension services, marketing facilities, and farm credit (113). The land reform component of the plan was intended to create a class of "progressive farmers" who would provide political support for colonial rule in the non-European agricultural sector.

The Swynnerton Plan generally is given credit for increasing the level of marketed output from smallholders to an average annual growth rate of 7.3 percent during 1954-63 to 12.6 percent during 1964-70 (113). Data on the value of marketed output, table 10, reinforce the impression of rapid growth of smallholder production during the 1950s.

The interesting issue to emerge from the implementation of the Swynnerton Plan is that both the colonial and post-independence governments, as well as the World Bank, believed that land

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27/ The Swynnerton Plan was named after its principal author, R.J.M. Swynnerton, the Assistant Director of Agriculture in Kenya.

reform was responsible for the increases in agricultural output. 28/ As a result, the need for revisions to the existing land tenure system became an accepted part of agricultural policy in Kenya. Smith provides the following reference to government policy in the area of land tenure.

> It has long been accepted that a necessary prerequisite to the development on much of the peasant farming areas is reform of the tribal systems of land tenure by registration of the title preceded by enclosures and, in many instances, consolidation of fragmented holdings.... The Government is determined to accelerate the process and complete as much of the remaining area as possible, particularly all medium and high potential land, within the next 10 years (120 in 128).

Smith argues that "...it seems likely that the initial success of the Swynnerton Plan was not due to the process of consolidation and registration per se, but rather to the final removal of restrictions on certain cash crops and the provision of the necessary resources to grow them" (128).

As was the experience in Malawi, smallholder agriculture in Kenya was more prosperous at the time of independence than at any other time during colonial rule. The critical component to this success was the removal of restrictions on smallholder production. It is important to bear in mind that the motivation for the change in colonial agricultural policy was due to concerns about food availability and the need to respond to the political and economic demands of the Mau Mau Emergency. The other important feature of colonial agricultural policy was the tremendous influence it had on agricultural policy after independence. The division of the agricultural sector into small-scale and large-scale farms continues to be the salient characteristic of agriculture in Kenya. What is particularly interesting is the relatively better protection afforded to Kenyan small farmers' interests relative to interests of large farmers in Kenya, compared with Malawi. This distinction in the treatment of small farmers is the most important factor in Kenya's superior development performance as compared to Malawi.

Agricultural Policy Since Independence

Agricultural policy in the post-independence period followed the spirit of policy in the latter part of the colonial era by maintaining a large farm and a smallholder sector within agriculture. Although the government was responsible for increasing the size of the small farm sector, the basic dichotomy within agriculture was maintained. The importance of this policy should not be underestimated in an economy where arable land is scarce. Despite efforts by government, conflicts will exist between the interests of small and large farmers. Therefore, by maintaining the colonial structure of agriculture, the government made a strong implicit statement about the nature of future agricultural policy.

Land Reform After Independence

The new government's decision regarding the structure of agriculture was the result of conflicting pressures. The importance of the land shortage issue as a rallying point for the

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28/ Smith cites the following example of the World Bank's view of land tenure.
...it has become increasingly recognized over the years that a sound system is the key to agricultural development. Whatever may be the merits of joint ownership of land suitable to pastoral use only, registered title is essential to the full employment of agricultural land. It provides an incentive to improvement and it furnishes the security need in order to obtain the loans required for development (128).

nationalist movement for independence meant that the government needed to make more land available for smallholders. The government's Development Plan for 1966-70 made this point:

> Once the outcome of Kenya's struggle for freedom had become clear, the existence of a large area of agricultural land reserved for the exclusive ownership of Europeans--the former Scheduled Areas--loomed as the principal anomaly in the national life. Legal restrictions on non-European ownership of this land were quickly abolished, but this did not help to solve the social, economic and political problems arising from the juxtaposition of the prosperous "White Highlands" and overcrowded, economically deprived peasant farming areas. The Government therefore gave first priority to a policy which would enable African farmers to purchase European-owned land. To this end agreement was reached with the British Government on a programme, mainly financed by U.K. loans and grants, which consisted of buying over 1 million acres of European-owned mixed farming land adjacent to densely populated African areas and dividing it into smallholdings to be settled by African farmers (120, pp. 124-25).

At the same time, the government recognized the need to maintain growth in the volume of agricultural exports, which was thought to be accomplished most easily through the large farm sector. 29/

> It is also of great importance that agricultural production of the present large scale farms...should be maintained and increased. These areas have, in the past, produced the major part of Kenya's exportable surplus and they form the backbone of the agricultural economy (120, p. 46).

As was the case in Malawi, when confronted with the demands of political and economic reality, the government attempted to meet both. An impressive amount of land was turned over to smallholder settlement schemes. The 1974-78 Development Plan reviews the results of these schemes under which a total of nearly 600,000 hectares of land were used to create farms for over 50,000 families. The land reform program for smallholders pursued by the government after independence encountered some criticism. Heyer notes that opposition to consolidation and registration of land, which was part of the Swynnerton Plan and continued after independence, was a crucial part of the independence campaign (113). Once independence was achieved, however, registration was made a part of land reform and was pursued vigorously by the government.

The government simultaneously reallocated land to small farmers and supported the sale of land formerly owned by Europeans to African large farmers, and the parastatal agencies financed the purchase of these large farms. Although some of these large farms were subsequently subdivided, many have been maintained as large farms. By providing the

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29/ Heyer argues that "Policies for the large farm sector revolved around the concern of the British government to establish conditions in which European farmers who wanted to leave could do so with adequate compensation, while those who wanted to stay could do so in an environment in which their interests were likely to be catered for. The incoming Kenya government was concerned to transfer European farming land to all classes of Kenyans: to the landless and unemployed, to small farmers who wanted to expand, and to the new Kenyan elite" (113).

financing for this takeover, the state helped to create an African landed elite class that in essence took over where the colonial era large farmers had left off. 30/

Table 10--Value of gross marketed output from large and small farms

Year	Large farms	Small farms	Total	Share by small farms
	Million Kenya pounds			Percent
1955	32.8	5.1	37.9	13.5
1960	37.7	9.5	47.2	20.1
1961	35.7	10.4	46.1	22.5
1962	37.1	10.6	47.7	22.2
1963	40.7	11.3	52.0	21.7
1964	35.8	24.6	60.4	40.7
1965	33.3	23.8	57.2	41.6
1966	36.0	32.7	68.8	47.5
1967	32.9	34.1	66.9	51.0
1968	34.4	35.8	70.2	51.0
1969	37.9	38.3	76.2	50.3
1970	41.2	44.2	85.4	51.7
1971	42.1	44.6	86.7	51.4
1972	50.3	55.6	105.9	52.5
1973	60.0	63.3	123.3	51.3
1974	73.4	75.0	148.4	50.6
1975	71.8	90.1	162.0	55.6
1976	122.1	128.0	250.0	51.2
1977	206.0	208.5	414.6	50.3
1978	147.2	178.6	325.8	54.8
1979	148.2	165.2	313.4	52.7
1980	168.8	184.5	353.3	52.2
1981	178.6	208.3	386.9	53.8
1982	216.7	323.2	448.9	51.7
1983	271.3	284.1	555.4	51.2
1984	386.2	402.5	788.8	51.0
1985	354.9	406.7	752.6	54.0

Sources: (117, 129).

30/ There is considerable evidence that privileges continue to accrue to large farmers. The financing packages needed to acquire these farms covered up to 90 percent of the purchase price. Frequently, however, the new owners had little experience with large farms. In order to remedy this problem, the government provided additional support to these farmers in the form of increased extension services and more credit. As late as 1975, many of these farms were still facing financial difficulties. In that year, the World Bank agreed to a US$10 million loan to allow rescheduling of debt for 90 large farms (113).

Domestic Marketing and Pricing Policy

Just as the set of policies adopted by the post-independence government on the issue of land tenure was an extension of colonial policies, the government's approach to pricing and marketing issues was influenced heavily by colonial precedent. Virtually every legal act in Kenya governing agricultural marketing predates independence (101). 31/ The government's involvement in agricultural marketing is extensive; as recently as 1983/84, the government was involved in the marketing of nearly 80 percent of agricultural production. In the same year, some 34 percent of all agricultural production was owned by the government prior to consumption or export (101). The share of each commodity that is marketed through official channels varies depending on the crop: maize, 25 percent; rice, 90 percent; wheat, 100 percent; and cotton, 100 percent.

The government influences agriculture through marketing boards, regulation of agricultural cooperatives, and some direct buying and selling of commodities such as sugar. The government dictates the producer prices most of the parastatals can pay for commodities. The stated goals of the government's intervention are to: 1) ensure supplies of staple food, 2) provide remunerative and stable prices to producers, 3) maintain reasonable costs for consumers, and 4) protect domestic markets for import substitution crops.

The government sets producer prices for maize, wheat, rice, sugarcane, cotton, milk, and beef. Minimum prices are set by the National Cereals and Produce Board for oilseeds, pulses, and minor food grains. Producer prices for major exports (sisal, tea, and coffee) are based on the price received on international markets less the cost of marketing; therefore, coffee and tea producer prices are quite close to actual export prices (table 11). Marketing restrictions are enforced by laws prohibiting the purchase and movement of these commodities by unauthorized agents. These laws are not enforced strictly, however, since active parallel markets exist for most commodities, which are partly dependent on the supply conditions for that year. Approximately 20 percent of milk and 25 percent of maize production are marketed informally in Kenya.

In addition to setting producer prices on most food crops, the government oversees the marketing and consumer prices of food items. Apart from the goals stated above, the government has a food self-sufficiency policy that is part of its import substituting development strategy. Self-sufficiency was encouraged by the control of imports rather than through direct price incentives to producers. Imports of agricultural products are restricted both by duties and government licensing requirements. Although the licensing requirements ostensibly are maintained to save foreign exchange, they also protect domestic producers, many of whom include the large farm interests discussed above.

Export Performance of Tea and Coffee

Colonial restrictions on the right of Africans to grow coffee and tea were an important causal factor in the Mau Mau movement. Therefore, it is not surprising that, despite the serious restrictions applied to the domestic trade of food commodities in Kenya, smallholder production of tea and coffee has been encouraged actively. The importance of tea and coffee

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31/ The exception to this is the National Cereals and Produce Board Act, which merged two crop marketing boards established during the colonial period. "The Agricultural Act, the main act governing administered pricing, commenced in 1955 although over the past thirty years it has been modified on more than forty occasions. The Agricultural Produce (Export) Act commenced in 1926, while the Agricultural Produce Marketing Act, which provides for the establishment of government marketing boards, dates from 1936" (101).

exports has translated into a policy of encouraging smallholder involvement in an export promotion strategy.

Table 11--World and producer prices for coffee and tea

Year	Coffee prices		Tea prices		Share of producer to export prices	
	Producer	Export 1/	Producer	Export	Coffee	Tea
	K Sh per 100 kg				Percent	
1970	747	829	674	725	90	93
1971	636	692	651	709	92	92
1972	779	784	602	699	99	86
1973	921	950	593	659	97	90
1974	1,008	1,071	721	782	94	92
1975	1,069	1,041	808	873	103	93
1976	2,524	2,406	1,057	1,072	105	99
1977	3,975	4,333	2,149	2,044	92	105
1978	2,818	2,920	1,583	1,487	97	106
1979	2,834	2,863	1,357	1,337	99	101
1980	2,634	2,701	1,591	1,547	98	103
1981	2,258	2,540	1,772	1,622	89	109
1982	2,780	2,864	1,941	1,930	97	101
1983	3,488	3,540	2,184	2,470	99	88
1984	3,844	4,203	5,184	4,155	91	125
1985	3,972	4,407	3,366	3,036	90	111

1/ Export prices are for unroasted coffee.

Sources: Prices to producers from (118, 119, 129).

Smallholder tea development in Kenya is frequently cited as the outstanding example of how to pursue an equitable export-oriented strategy for a commodity in which a country has a comparative advantage. 32/ Kenya has managed its advantage very well by providing the industry with effective management, a successful pricing policy, the necessary physical infrastructure, and extension services (121).

By 1983, approximately 150,000 smallholder families were involved in the production of tea on plots averaging 0.3-0.4 hectares. Between 1970 and 1983, the average annual growth rate for areas planted to smallholder tea was approximately 5 percent, while the number of planters increased by 5.5 percent per year over the same period. At the same time, the quality of Kenya's tea increased such that the 14-percent discount that was applied to output in 1969 has been replaced by a premium ranging from 6 to 15 percent. This strong performance has

32/ Kenya is perhaps one of the finest areas in the world for growing tea. Production is concentrated in the limited high potential areas, which makes the collection and processing of green leaf more efficient. In addition, growing conditions allow plucking throughout the year, in contrast to other countries where plucking is limited to 3 or 4 months per year (121).

allowed smallholder tea production to increase from less than 2 percent in 1963/64 to 50 percent in 1984/85 (table 12).

The Kenya Tea Development Authority (KTDA) has overseen the expansion of Kenya's smallholder tea industry. Lele and Meyers identify four factors as being partly responsible for the success of smallholder tea production: 1) the strong political support for smallholder tea development at the highest levels of the Kenyan government, 2) KTDA's expansion carefully balancing physical development with institutional and manpower training, 3) KTDA's considerable autonomy in management, and 4) KTDA's tea factories attracting some of Kenya's best educated people for management (121).

Coffee is Kenya's most important agricultural export crop since coffee's share of total export earnings (depending on international prices) has ranged between 14 and 42 percent from the early 1970s. Africans were not allowed to grow coffee prior to independence and the Swynnerton Plan. At independence, some European-owned coffee estates were subdivided and distributed to smallholders. As a result, smallholder coffee production rose from 25 percent of total output in 1963 to nearly 70 percent in 1985 (table 13).

The marketing and processing of smallholder coffee is handled through a system of farmers cooperatives. These cooperatives, with monopsony rights to purchase coffee, handle about 65 percent of the market share. Farmers are required to deliver their harvested coffee cherries to the nearest cooperative coffee factory. The cooperatives are owned collectively by the farmers, but membership is compulsory.

The Government of Kenya has been quite active in intervening in the coffee sector because of the importance of coffee exports and the need to maintain quality and limit output. 33/ The most significant ways the government intervenes in the coffee sector are through gazetting of land, control of planting materials, and export taxes. In Kenya, coffee can be grown only on land that is specified, or gazetted, by the government. Therefore, gazetting is a policy device for controlling the quality and, to some extent, the quantity of coffee produced. The government also exercises control over coffee production by limiting the supply of credit for the construction of processing factories and the supply of seedling stock. Restricting seedlings, however, has not been very effective since farmers still can acquire seedlings for infilling purposes. The export tax is the device with the greatest potential for decreasing production. At different times since independence, Kenya has experimented with a coffee export tax. In 1963, an export tax of KSh400 per ton, approximately 5 percent of value, was imposed. The tax was cut by 50 percent in 1967 and discontinued in 1973. In 1977, an ad valorem export tax was set at 15 percent of the value of auction sales proceeds above KSh20,000 per ton. 34/ The tax is low relative to those levied by other coffee exporting countries. This low rate of explicit taxation on coffee exports, along with the practice of paying producers the international market price with few indirect taxes, means that production incentives are maintained. Low coffee export taxes ensure, moreover, that coffee production does not significantly contribute to government revenues directly (130).

33/ As with tea, Kenya's coffee is among the finest in the world. Kenya goes to great lengths to maintain that quality by carefully monitoring the picking, processing, sorting, grading, and classifying of coffee. As a result, Kenya's coffee exports command a 10-percent premium over the standard Arabica coffees of Central America and Colombia. The need to restrict production is in response to the imposition of the International Coffee Agreement (ICA) quotas to which Kenya agreed (121).

34/ Since the export tax schedule is progressive, the effective tax rate increases with coffee prices. Between 1978/79 and 1979/80, the effective tax rate was 6-7 percent and over 9 percent in 1984/87 (121).

On balance, Kenya's agricultural policy from independence through the late 1970s was an extension of policy in the late colonial period as characterized by the Swynnerton Plan. Smallholder agriculture was encouraged through land reform and a small farm credit program. 35/ The rapid growth after independence occurred mostly in the high potential agricultural areas and involved increased smallholder production of attractive crops such as coffee and tea. Despite the obvious success of agricultural policy for tea and coffee, there are still problems

Table 12--Sources of tea production

Year	Estates	Small-holders	Total	Share by smallholders
	Metric tons			Percent
1963/64	17,800	300	18,100	1.66
1964/65	19,600	600	20,200	2.97
1965/66	19,000	800	19,800	4.04
1966/67	23,800	1,600	25,400	6.30
1967/68	20,600	2,200	22,800	9.65
1968/69	26,400	3,400	29,800	11.41
1969/70	30,300	5,800	36,100	16.07
1970/71	33,100	8,000	41,100	19.46
1971/72	28,200	8,100	36,300	22.31
1972/73	40,200	13,100	53,300	24.58
1973/74	41,500	15,100	56,600	26.68
1974/75	37,300	16,200	53,500	30.28
1975/76	38,800	17,900	56,700	31.57
1976/77	40,500	21,500	62,000	34.68
1977/78	55,600	30,700	86,300	35.57
1978/79	58,600	34,800	93,400	37.26
1979/80	61,600	37,600	99,200	37.90
1980/81	55,900	32,729	88,629	36.93
1981/82	55,100	35,547	90,647	39.21
1982/83	56,100	46,311	102,411	45.22
1983/84	68,800	47,058	115,858	40.62
1984/85	63,900	62,934	126,834	49.62

Sources: 1963/64-1984/85 tea data came from (116) and all other data came from (117, 129).

35/ The 1966-70 Development Plan called for rapid increases in the amount of credit made available to smallholders. If anything, the program was too ambitious and encountered problems administering the loans to small farmers. As a justification for reducing the size of the smallholder credit program, the 1970-74 Development Plan pointed out that loan repayments were in arrears by about 50 percent.

Table 13--Coffee production

Year	Estates	Small-holders	Total	Share by smallholders
	1,000 metric tons			Percent
1959	19.6	3.6	23.2	15.5
1960	18.8	4.6	23.4	19.7
1961	20.4	7.3	27.7	26.4
1962	41.4	7.8	49.2	15.9
1963	29.9	10.0	39.9	25.1
1964	24.8	16.6	41.4	40.4
1965	28.1	16.2	39.3	41.2
1966	28.4	28.5	56.9	50.1
1967	19.2	28.8	48.0	60.0
1968	18.8	20.8	39.6	52.5
1969	26.8	25.6	52.4	48.9
1970	27.9	30.4	58.3	52.1
1971	31.5	28.0	59.5	47.1
1972	34.2	27.8	62.0	44.8
1973	35.1	36.1	71.2	50.7
1974	30.8	39.3	70.1	56.1
1975	31.2	35.0	66.2	52.9
1976	42.6	37.7	80.3	47.0
1977	51.5	45.6	97.1	47.0
1978	36.6	47.7	84.3	56.6
1979	26.5	46.6	75.1	62.0
1980	39.3	52.0	91.3	57.0
1981	32.7	58.0	90.7	63.9
1982	34.0	52.0	88.0	59.1
1983	33.0	52.0	95.0	54.7
1984	54.0	75.0	119.0	63.0
1985	29.0	65.0	94.0	69.0

Sources: (129, 131).

in Kenya's agricultural sector. The easy production gains in coffee and tea were due in large part to the reallocation of landholdings. While there is some scope for increased production using this method, it is very limited. In addition, the low potential agricultural areas have not received sufficient attention and, therefore, have not experienced the growth that has characterized the tea and coffee growing areas. The limited supplies of arable land, along with the rapid population growth rate, is placing increased pressure on the ability of many households to earn even subsistence incomes. In addition, the government's substantial regulation of the economy, especially in the agricultural sector, appears to have reduced growth in recent years. At present, the government is looking for ways to increase smallholder agricultural production.

Era of Agricultural Policy Reform

As was the case with so many other countries in the late 1970s and early 1980s, Kenya experienced serious economic problems and sought assistance from the World Bank (IDA) and the IMF. As is also the case with most countries, many of the proposed solutions to Kenya's economic problems still are being implemented and evaluated. Therefore, the present discussion is limited to a description of the recommended remedies and inferences about what they may mean for Kenya's future agricultural policies.

Kenya's economic difficulties were characterized by a number of institutional problems, a rising government budget deficit, exchange rate distortions, declining terms of trade, and a weak performance on a number of development projects cofinanced by the World Bank. The government's budget deficit resulted from increased expenditures that accompanied the boom in coffee prices in the late 1970s, which have not declined after commodity prices fell. The first structural adjustment loan (SAL), in June 1980, did not contain an agricultural component, but concentrated on a more efficient and export-oriented industrial sector, more effective external borrowing and debt management, and improved budgeting of public revenues and expenditures. The first SAL was cofinanced by the IDA (US$55 million), EEC (US$15 million), and OPEC Fund (US$4.1 million). The five specific goals were: 1) reduced industrial protection through eliminating quantitative restrictions on imports, 2) an improved export compensation system, 3) implementation of a full debt service recording mechanism and preparation of an annual debt external borrowing program, 4) changed level and structure of interest rates, adjusted to encourage savings and profitable investment, and 5) an improved government budgeting procedure.

A number of studies were undertaken in preparation for the anticipated agricultural reforms in the second SAL to identify constraints in the agricultural sector. The second SAL was approved by the World Bank in July 1982 and included recommendations for agricultural policy reforms. The recommendations of the second SAL included: 1) implementation of producer price policies to encourage domestic production, especially for food crops, consumer prices to cover production, processing, and marketing costs, and subsidies only for food imports and security stocks necessary to meet shortages of essential foodstuffs, 2) a study to determine the most efficient marketing mechanism for maize with a recommended food security plan, 3) a review of the organization and management of the Ministry of Agriculture to identify changes and training required to improve implementation of agricultural projects and programs, and 4) adoption of procedures for the adjudication of land disputes and the registration of land as quickly as possible in accordance with the policy that land tenure should be by individual title, and subdivision of group-owned and cooperative farms will be institutionalized through a government designed program.

Donors are generally disappointed with results of the first two SALs. Progress on the first two conditions was severely hindered by the drought in 1984, the worst in 50 years. Efforts to address the serious land shortage problem have been disappointing. Although a Land Use Committee was established to review the complex and politically sensitive issue of land availability, the degree of government support for this activity is unclear. Attempts to address the country's pressing land problems likely will fail without backing from senior levels of government.

Summary

Agricultural policy has not occupied the central role in Kenya that it has in Malawi. But it has still been a crucial component of the development strategy since independence. Kenya has pursued a limited import substituting strategy to encourage growth in the manufacturing

sector. Nonetheless, the same pressure from agricultural interests that gave strength to the independence movement forced the government to pursue policies encouraging income growth in the agricultural sector. This outcome is in contrast to Malawi. The principal difference in the two cases seems to be the greater political organization and strength of some peasant groups in Kenya. The government's response to this pressure after independence was to ensure that a significant part of the high potential land in the Central Highlands was distributed to smallholders. In addition, the extension and marketing policies pursued encouraged smallholder production of export crops. Among the most notable of these policies was the relatively low level of taxation of smallholder production for export. The smallholder and large farm sectors were supported simultaneously. Both sectors were insured adequate supplies of credit, extension services, and marketing assistance. In this way, the agricultural sector supported the broader development strategy by generating foreign exchange and employment in the rural sector. Even though agriculture was more central to Malawi's growth efforts than was Kenya's, smallholder agriculture was treated much less favorably in Malawi. However, Kenya's agricultural sector was not treated uniformly. The success of Kenya's smallholder agricultural policy was in coffee, tea, and dairy, which are produced primarily in areas with the greatest agricultural potential. Other areas of the country have received much less attention and experienced significantly less income growth as a result. In this way Kenya and Malawi are facing similar problems in their agricultural sectors since easy gains in agriculture have already been realized. Kenya has taken advantage of the tea and coffee producing areas for a number of years, while Malawi has reformed pricing policy more recently to improve production incentives. Future increases in productivity and income, however, will be more difficult to achieve and will require greater investment in agriculture.

Rice has been the cornerstone of Thailand's trade and development policy for the following reasons: 1) it is the staple food and the main subsistence and cash crop for most farmers, 2) more than 50 percent of farmland is planted to rice, and 3) rice is the most important source of foreign exchange. Because of these three characteristics, rice is the principal commodity used to determine the internal and external terms of trade. Therefore, rice is a principal target for domestic and international trade policy. The current focus of policy is how to respond to a structural change in both the domestic resource base and international demand for cereals to maintain a dynamic, if smaller, agricultural sector. Thai policymakers also must tackle the difficult task of minimizing the impact of economic transformation on the poorer groups in the agricultural sector.

Overview of Current Challenges

The last three decades of steady agricultural growth can be attributed to Thailand's large land surplus. The availability of tractors and the development of road networks since the mid-1950s added to the speed and profitability of land development. Land under cultivation expanded 3.2 percent per year between 1960 and 1977, and 2.3 percent between 1977 and 1980 (255). Agricultural policy as far back as the late 1800s has encouraged extensification. It was not until the 1980s that the limits to arable land were reached and concerns raised about the environmental dangers of continued cultivation of marginal land and the concomitant declining yields.

One of the challenges facing government policymakers is how to redirect agriculture and trade policy to facilitate the intensification and diversification of the agricultural sector. Land pressure and the slow growth in the demand for primary commodities require permanent change in Thai agricultural policy. 36/ Shrinking markets for primary commodities in recent years can be attributed to the institutionalization of agricultural protection in the more developed countries and also to food self-sufficiency policies developed and maintained by many countries in the region. These policies limit the potential for growing regional markets. Efforts to intensify agriculture will allow resources to be directed to those areas where yield potential is the highest and diversification will help to minimize the vulnerability to world vicissitudes in primary commodity prices.

The second major challenge for agricultural policy is transforming national and sectoral growth into improved development performance. Agriculture has been the engine of growth and domestic saving for investment in infrastructure and in other sectors. In Thailand, the rice tax has been one mechanism used to collect public revenue. This revenue from agriculture, then, can be used either for reinvestment in the sector or to finance public expenditures in other sectors. In this way, surpluses are extracted from agriculture and transferred to other sectors (table 14). Agricultural taxes (rice taxes) stimulate growth in other sectors by reducing the wage bill for employers in the nonagricultural sector. The taxes increase the profitability of those investments. This occurs in situations where the price of a wage good like rice is depressed by taxation.

36/ This is not to assume that there will not be periodic shortages on the world rice market that will lead to increases in the demand for Thai rice. (See Timmmer (265) and Siamwalla (256) for discussions of the changing structure of the international rice markets and the need for diversification of countries like Thailand out of cereal production.)

Table 14--Farm-level price of rice as a percentage of world price

	1961-65	1966-70	1971-75	1976-80
		Percent		
Thailand	71	55	62	70

Source: (243).

Agriculture has provided much of the savings for national investment, and large numbers of households have been lifted out of absolute poverty since the early 1960s. Half of the households were in poverty in the 1960s and 25 percent in the 1980s. More than 90 percent of poor households are in the rural areas with 75 percent of these tenants and farmworkers in the north and northeast (278).

Regional Patterns of Economic Growth and Development

Farmers in the central plains have benefited the most from two decades of growth. This area, which has 20 percent of the total population, experienced a very dynamic agriculture from highly productive land and the movement of approximately half of the population out of rice production into maize and sugar. These households have experienced a doubling or tripling of income since 1960 and have maintained an income twice that of the rest of the country. Public investment has been high in this area. The producers generally are better educated and have been in commercial agriculture for many generations.

The north and northeast contain two-thirds of all agricultural households. Half of the households in this area diversified into crops with growing demand and produced their subsistence needs. The households that diversified experienced an increase in income above that of the average farmer, while the other half of the households in those regions did not participate in diversification because they lacked the infrastructure, education, or the ability to risk vulnerability to the weather or market forces.

The south did not share in the rapid growth experienced in the central plains. The diversification that occurred was into rubber, which, because of depressed prices, did not provide significant income. These households, however, fared better than did the subsistence farmers in the north and northeast.

The aggregate trend is a reduction in total poverty, but the benefits from economic growth are skewed toward the better off thereby worsening the distribution of income. This is supported by the Gini coefficient, which has increased with time. 37/ This skewed distribution of wealth can be explained by the 1) unequal distribution of highly productive land, 2) damping of the real wage rate for unskilled laborers, and 3) regressive effects of rice taxation policy.

The large percentage of resource-limited households unable to take advantage of the growth in the agriculture sector exerted a downward pressure on the real wages for the unskilled. This pressure dampened wages for unskilled labor outside of agriculture. Agricultural policy contributed to the growth of the economy directly by providing government revenue and

37/The coefficient was 0.361 in 1962/63 and rose to 0.437 in 1981 (246).

indirectly depressing the price of labor in the agricultural and nonagricultural sectors. The low real wage enhanced infant industry development because the depressed wages assured Thai industry of at least a shortrun comparative advantage.

Since agriculture has been the engine of growth for the Thai economy, policies helped those with skills and resources but perpetuated poverty for those with limited resources. The challenge for agriculture and trade policy is to minimize the growing gap in access to resources and incomes. While government involvement in development activities has been limited compared with other developing countries in Southeast Asia, poor and landless farmers and urban groups will exert political pressure on the government to maintain policies promoting cheap food. 38/

History of Agricultural Trade Policies

The early rice trade in Thailand was dominated by the Chinese who were accorded preferential access by the monarchy. 39/ The development of shipping routes to Bangkok in the late 19th century greatly enhanced the international demand for Thai rice. Demand expanded due to opening non-Chinese markets that served colonial interests in Africa, Southeast Asia, Europe, and Japan. The increase in demand for Thai rice exports led to an increase in exports per capita. The larger farms in the more commercialized area, the central plains, supplied the increased volumes of rice. The growing demand for rice and the concomitant returns to the owners led to the increased concentration of landownership. This was the beginning of discrepancies in landownership patterns (279).

As international interest in Thai rice developed, the government brought Chinese in to build the canals and railroads that opened up the interior. Much of this land was inferior to the central plains, thus explaining the declining yields over time. 40/ During the 19th century, Thailand was sparsely populated so that when demand increased for rice, labor became scarce, encouraging more extensive farming. Farms grew larger in the central plains as smaller farmers sold their plots seeking cheaper and larger farms in the growing areas. This movement to the more remote areas may have come also from a combination of royal mandates and incentives. The result was that, by 1929-30, farm sizes in the central plains were much larger than in the less commercialized areas (258).

The Chinese played an integral role in the early development of the Thai rice industry. Not only were the Chinese a source of labor, but they were also the first to develop tools to increase the productivity of labor. 41/ Chinese merchants were crucial to the expansion of international trade devising methods to secure steady sources of rice supplies. This was accomplished by providing consumption goods for the farmers in the outer areas on credit and by controlling the transportation networks that serviced these areas. As each new transportation route opened up (either railway or canal), the Chinese entrepreneurs competed to secure rice surpluses from previously subsistence farmers, though the most reliable source of supply, especially in the more commercial areas, was procured by the Chinese by purchasing

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38/ During the last two decades, there has been considerable concern over the influence that 'communist' factions were having in the poor areas in the north, south, and northeast. This concern helped to focus government development activities in the area.

39/ The rice trade under the Ayathaya monarchy (14th to 18th centuries) was carried out by the Chinese who acted as monopoly holders by royal favor (258).

40/ Yields in the early 1900s were approximately 280 kg/rai and declined to 240 kg/rai in the 1960s (263).

41/ Examples of these implements are the steel ploughshare and steam rice mills (258, 279).

padi land. While tenancy was scarce in the newly opened areas, it became common in the central plains as early as the 1920s (271).

Although most of the growth in the demand for rice occurred before World War II, the Chinese control over the supply of rice and the farmers' permanent debt to the Chinese limited the production of rice sufficiently that the growth in rice production never provoked overall growth in the economy. 42/

The Thai government entered the rice trade after World War II when the government became responsible for war reparations in rice. Shortly after the war, rice prices rose and the government could not meet its obligations. This led the government to place the burden on the farmers by depressing domestic prices. The government also banned private exports and set up a rice office with the sole right to export. Although the war payments were concluded in 1948, the government saw the potential for procuring revenue by keeping the domestic price below the world price. The government maintained this monopoly until 1954 after which rice was sold through private brokers, except when sold abroad. An export quota and fee were required for foreign sales and licenses were granted on a quota basis. The export fees were not regarded as a tax, which would have required approval by the legislature, but were under executive control allowing great flexibility in using this as a policy instrument.

Exchange rate control also taxed rice. A multiple exchange rate was adopted to counter a black market brought about through an overvalued exchange rate. Exporters of nontraditional goods sold foreign exchange obtained in the market at the going rate, whereas exporters of rice had to return the foreign exchange to the Bank of Thailand at 80 percent of the market rate. The result was a significant tax on rice that lasted until 1955.

The effect of the export tax, or premium, to the government was: 1) substantial amounts of direct revenue were obtained, 2) the tax allowed for the creation of a cheap rice policy, which aided urban civil servants just recovering from the inflation after the war, and 3) the government assumed that Thailand had a monopolistic position in the world rice market; therefore, an export tax would improve the terms of trade. Officials argued that if the tax was lifted, only the middlemen and exporters would gain.

The 1950s to the 1960s was a period of relative stability in the world rice markets. Policy sought to maintain the price of rice at levels acceptable to urban consumers. The rice premium changed little and export quantity controls were used to stabilize domestic prices. Intervention relied heavily on price signals and there was a tendency to stockpile rice when world prices were high. This stabilized the domestic price, but it had a disruptive effect on world prices. Policymakers used quantity adjustments in exports instead of the rice tax because they believed the elasticity of demand for Thai rice was very low, an assumption which is probably correct when there is excess demand (255).

The first shock to the rice economy came in 1966-68 when domestic prices rose by 50-70 percent from the average for 1955-66. There was some discontent in the cities, but this was tempered by a decade of steady growth. The American presence in the area also had greatly simulated the economy (not only in Bangkok but also in the interior where the American

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42/ The farmers' increasing debt burden was a disincentive to further investment in the land, and hence diminished the productivity that would have allowed a greater contribution to both the sector's growth and growth in the economy in general. Silcock suggests that overall growth in the economy did not occur because much of the competitive efforts of the entrepreneurs were directed toward securing control over supplies of rice and not toward increasing the efficiency of production.

military was responsible for the development of a huge network of roads). The government justified higher consumer prices saying that they would benefit the farmer. To assist the urban poor, the government established a program by which the poor could purchase inexpensive rice from government warehouses, which was procured from mandatory sales by exporters. This option had been available to government employees since 1962 (254).

The late 1960s and early 1970s were periods of great surplus. The high prices of 1966-68 increased farmers' expectations. When prices dropped, the government felt some pressure to assist the farmers. The government was slow to alter the premium rate and maintained that the elasticity of demand for rice was very low. While this may have been true during times of shortage, the surplus and stocks available made it possible for buyers to shop around the world markets, creating a much more elastic demand. The delay in adjusting the premium cost Thailand a temporary loss in its competitive edge in world markets and exports fell to their lowest level since the Second World War. Domestic prices were depressed in order to control the level of exports with the high premium rate (254).

To assist the farmers in dealing with the precipitous drop in price, price supports were instituted in 1965. But these offered little assistance since the price was below market price. By 1969, prices were supported at market levels, but the program failed because the funds necessary to purchase large amounts of rice were not forthcoming. 43/

As worldwide production shortfalls began to be felt in 1972, exports quickly rebounded, and lost market shares were recaptured. This was followed by a fear that there would not be enough rice for exports that year. The government banned exports as stocks disappeared due to fears about not having rice available for 5 months. The crisis dissipated by August of 1973 but contributed to the downfall of those in political power. The disruption in supply to many of Thailand's developing country markets reaffirmed the need in many of those countries for maintaining a certain level of self-sufficiency in food production.

Throughout the period discussed, the main objective of rice policy was price stabilization. The policy instruments used were export quotas and the rice premium. The government did not try to influence price through large public expenditures to stimulate infrastructural development. There were research and extension facilities whose purpose were to assist in increasing production. Therefore, the only way to influence domestic availability of rice and price was by increasing or decreasing exports. In this way, agricultural pricing policy determined trade policy.

Rice policy had different objectives during the different time periods discussed, most of which focused on maintaining a low price and price stabilization. These policies also played a major role in determining the structure of agriculture as it evolved over the last three decades.

The rice premium began as the result of war reparations with the objective of transferring income from producers to the government. By 1955, the premium was increased to ensure domestic supplies of rice and stabilize the cost of living. This was in direct response to pressure from urban civil servants. The price damping effect of the tax also allowed the government to maintain a cheap food policy for the urban groups. The export tax, with its accompanying low rice price, was helpful in protecting Thai industry against import

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43/ To effectively support rice prices during times of low international demand would require a large budgetary commitment and, therefore, may not be the most feasible action for a country like Thailand with a limited tax base.

competition. 44/ One of the most controversial discussions centers on whether the tax policy was a deliberate attempt to force diversification out of rice. Whether it was deliberate or not, the premium and other taxes had a profound effect on the structure of agriculture, especially commercial agriculture.

The premium discouraged commercial rice production through depressed prices, providing little incentive to purchase the inputs needed to intensify production. In the areas with a good agricultural infrastructure such as the central plains, the low rice price stimulated production out of rice into higher valued horticultural crops. The premium, which is essentially a pricing policy, had little influence on production decisions by subsistence farmers. Those farmers having the resources to purchase inputs and intensify rice production would probably choose to diversify into other higher valued crops (unless they were risk adverse, not near marketing channels, or had not met all their consumption needs).

Structural Change: The End of Extensification

By 1980, two forces that had been acting upon Thai agriculture required policymakers to re-evaluate the past agricultural strategy. The first was the problem of growing land scarcity. The abundance of land was the main factor contributing to the steady growth of agriculture during the last three decades. The signals that land was in short supply were declining yields, soil erosion, damage to watershed from over-cropping marginal land, and the high incidence of squatter settlements on virgin rain forest. 45/ The second, and perhaps less tangible concern, reinforced during the recession of the 1980s, was the vulnerability of the sector to revenue derived from exporting rice.

Rice is a particularly vulnerable crop because of the growing thinness of the market. 46/ Not only were the policies of the more developed countries changing the structure of the international rice market, but the growing capability of Thailand's ASEAN partners to meet their own food requirements has diminished prospects of expanding or even maintaining their export market demand.

These two developments, land scarcity and shrinkage in the international rice markets, encouraged policymakers to concentrate on programs to increase the productivity of land and labor. This would be accomplished through policies encouraging the intensification of rice production and diversification of the export product mix.

Intensification in Rice Production

The aims of intensification are to increase yields through input use and labor productivity. The intensification schemes are concentrated in areas with already existing infrastructure and commercial expertise. The enterprises participating would be those already large enough to be commercially viable. This precludes the small subsistence dryland farmers from participating

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44/ Expenditure for rice is a major component of a household budget and therefore its price affects the real value of wages. When the price of rice is low, wages can be lower. This allows firms which compete internationally to take advantage of lower production costs and pass this lower cost on to potential clients, thereby establishing a competitive edge.

45/ Declining yields can be partly explained by the marginality of land that had been brought under cultivation during the extensification period.

46/ A market is characterized as thin when there is a small volume of the commodity traded relative to the amount produced.

and constrains the effort to the central plains and sections of the north. To stimulate intensification, current policies inhibiting rice production need to be addressed. These policies include the rice premium that keeps the price of rice so low that there is little incentive to increase inputs. 47/ Along with the rice tax, indirect taxes depress rice intensification. The indirect taxes are tariffs on nonagricultural imports. These tariffs are imposed to protect domestic industries and without them nonagricultural imports would have been much larger than with equilibrium foreign exchange. This difference between the equilibrium rate with the tariff and without is a measure of taxation on agricultural exports. The cumulative result of these taxes is that domestic price is below world price. This has the effect of reducing the real wage cost to nonagricultural employers, thus providing an artificial advantage to domestic nonagricultural industries. This has been the major mechanism by which revenue is extracted from agriculture and transferred to the nonagricultural sector.

Producers responded to this taxation by minimizing the scarce resources that went into rice production. Yields barely increased in 1960-80, while throughout the rest of Southeast Asia technology was adopted that tremendously increased yields. The previous trend of land extensification allowed for a significant extraction of surplus out of agriculture into the other sectors. If agriculture is to be intensified, resources for investment must be channeled back into the sector.

The fertilizer price also has been a major block to intensification. Thailand has one of the lowest rice yields among the major rice producers. This is probably due to unfavorable fertilizer/paddy price ratios, which are the highest of all the Southeast Asian countries. A recent World Bank study demonstrated that by eliminating the export tax on rice and the import tax on fertilizer, the fertilizer/price ratio would drop to the point to make intensification more profitable (278). There are plans to complete a large fertilizer plant by 1990 to produce the combination of fertilizers most appropriate for rice cultivation. If the fertilizer price can be maintained at a competitive level, it is possible that yields could increase, at least among the large commercial farmers in the central plains.

The problem with pursuing a set of policies to encourage rice intensification is that in many of the areas conducive to intensification, the central plains and the north, the commercial farmers have responded already to international price signals and apparent priorities of government policymakers. These farmers responded by diversifying out of rice production into high-valued crops where a much larger return can be gained. It should not be assumed that rice production will be phased out of the central plains area for rice plays a major role in the country's food self-sufficiency agenda.

Diversification of Agriculture

Diversification of agriculture may hold the most promise for easing the transition out of rice, a commodity with fluctuating and depressed prices, to higher value horticultural and livestock products. The roots of this transition go back to the postwar era with expansion in tobacco, oil palm, and maize. This diversification was accompanied by growth in per capita output and also resulted in improvements in transportation, irrigation, and research (256).

The commodities for expansion that seem to have the most promise are fruits and vegetables, livestock, and protein sources to supply first the domestic and later international markets.

47/ In the 1970s, there was a policy move to reduce the premium, increase farm prices, and lower fertilizer prices. This was more a response to concerns of equity and farmer discontent and not an attempt to increase production.

Each of these will be intensive in the use of technology and inputs. 48/ Therefore, farmers able to switch will likely be in irrigated areas because the cost associated with these crops without water would be high for subsistence or semi-subsistence farmers.

Diversification into fruits and vegetables, which contributed to 29 percent of value added in crops in 1985, uses much less land area than cereal crops such as rice and is very labor intensive (255). If an area cultivates fruits and vegetables, then it is using its cheapest resource (labor) and minimizing the scarce resource (land) (see table 15 for data on Thailand's exports of horticultural products). Fruit requires more land than does vegetables, and the option for livestock requires the most extensive land use. Whatever alternative or combination

Table 15--Horticultural exports

Year	Vegetables, fresh and preserved	Fruits, fresh and preserved	Flowers	Total horticultural
		Million baht		
1979	210.85	511.06	513.69	1,235.60
1980	204.84	581.48	618.67	1,404.99
1981	313.80	942.36	651.54	1,907.69
1982	506.74	1,326.24	726.71	2,559.68
1983	667.44	1,306.31	850.53	2,824.28
1984	719.56	1,440.78	972.49	3,132.84

Source: (263).

of alternatives is pursued, it is likely that a growing contrast in the future intensity of irrigated versus rainfed areas will occur. Agriculture, can absorb much rural labor (table 16). Agriculture has been the main source of income for close to 75 percent of the population, a ratio more commonly seen in countries such as Bangladesh or Burma. The current problem is that unless diversification and intensification facilitate the absorption of surplus labor into commercial production, labor will be absorbed only by reducing the implicit wage rate in agriculture as falling world prices for traditional agricultural products get passed on to owners of land and labor, especially labor. 49/

The number of farm families actually making a living from fruit and vegetable production, livestock, and fisheries is still small, though large when compared with the entire manufacturing sector. Most farmers still grow field crops, especially rice (table 17). Even in the more commercialized areas, fruits and vegetables are still grown as the subsidiary crop for rice farmers. At this point in the development of the industry, domestic demand has led in the growth of fruits and vegetables. As international markets develop, Thai exporters can expect to face keen competition while growers develop the resources and techniques to

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48/ The transition to horticultural crops will require considerable technical and managerial expertise and will most likely be at least a shortrun constraint to fully exploiting the potential of new crops.

49/ This assumes that the other sectors in the economy will not be able to absorb a significant amount of surplus labor.

Table 16--Contribution to employment growth of economic sectors by labor force aged 15 years and over

Sector	1960-70			1970-80		
	Male	Female	Total	Male	Female	Total
	Percent					
Agriculture/forestry/ hunting/fishing	34.23	23.28	57.50	26.44	29.92	56.35
Mining	1.68	.59	2.27	.04	.10	.13
Manufacturing	3.77	4.35	8.12	4.44	4.69	9.13
Repair/demolition/ construction	3.90	.77	4.67	1.88	.58	2.45
Gas/water/sanitary services	.32	.10	.42	.42	.09	.51
Commerce	1.77	2.54	4.32	4.76	7.24	12.00
Transportation/ communication/storage	4.12	.30	4.43	1.88	.26	2.14
Services	12.44	9.38	21.8	25.23	5.07	10.30
Other activities	-1.70	-1.84	-3.54	3.80	3.18	6.98
Total major industry group	60.52	39.48	100.00	48.88	51.12	100.00

Source: (264).

Table 17--Agricultural labor force classified by subsector

Commodity	1970	1980
	1,000	
Rice	9,837	12,082
Maize	377	619
Rubber	344	648
Cassava	98	464
Other field crops	270	408
Coconuts	86	126
Fruits, vegetables, and horticulture	447	819
Livestock	2	95
Fisheries (inland and marine)	116	190
Total	11,572	15,452

1/ Classification is by the main occupation of the worker and labor force is aged 15 and over.

Source: (255).

effectively compete with other well-established horticultural exporters. This makes a total production commitment into horticultural production a risky venture.

There are essentially two ways by which farmers can allocate their resources in response to the changing structure of agriculture. 50/ If nonagricultural employment opportunities expand, households may find it worthwhile to abandon agriculture. If nonagricultural employment does not expand, farmers, in an attempt to avoid a decline in income, may either clear marginal land or intensify their cropping systems and/or diversify if they have the resources. The increasing land scarcity and falling man/land ratio will force the implicit wage to fall, making it feasible to intensify agriculture.

How households choose to allocate their resources will depend a great deal on how much labor can be absorbed in the nonagricultural sector. The need to absorb labor from the rural areas is new to the Thai economy and is an indicator of how quickly the agricultural sector is forced to move from growth through extensification to growth through intensification. Agricultural policymakers can facilitate this transition by ensuring that policies in other sectors are not biased against labor, and also by encouraging the agricultural research and extension necessary to support intensification and diversification.

Government policies can induce increased production or a change in its composition by extending new production technology, manipulating input and output prices, and providing infrastructure. A recent example of this in process is the development of the soybean industry. This involved long-term planning: a period of research and extension, a gradual expansion of production, and the development of processing and marketing links. Thus, policy cultivated a comparative advantage in commodities for which there was international demand.

A limit to diversification is the need for new capital at a time when public sector expenditure is expected to contract. To facilitate the acquisition of capital, long-term credit must be made available. Policymakers are addressing land titling, the constraint that limits access to credit. Although the land of marginal farmers is not titled, land titling remains the most binding constraint. Another problem is developing linkages between finance, production, and marketing. As new crops and technologies are adopted, the organization of agriculture becomes more complex. An approach to this concern has been heavy investment by processors and shippers into agriculture, mostly sugar and cassava. This investment has been coupled with the middleman's involvement in the delivery of new technology.

Unless limited resource farmers are brought into this process, the above efforts by policymakers may not make a significant contribution to the welfare of the farmers in the rainfed areas. This is because much of labor-biased agricultural technology is more relevant to irrigated lands. Resources are constrained in rainfed areas and the pain of this transformation is felt most acutely.

Much of the above discussion of structural change focuses on the challenges to the agricultural sector in general and represents the transition the commercial subsector is making in particular. The most important question is the linkage between agricultural growth/modernization and development. 51/ The revitalization of the subsistence and semi-subsistence sector is vital to policymakers because of the contribution of the sector to

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50/ The changing structure refers to the process of diversification and intensification.

51/ The difference between modernization and development is as follows: modernization connotes new technology or techniques that increase productive potential; development, on the other hand, has implications for the distribution of gains made through new-technology or new-found efficiency.

food security needs and the political role of this group. Also, to assure long-term steady growth in the economy in general, all sectors must benefit and contribute to this process.

Agricultural Links to Development

This section explores the major constraints that limit the participation of a large section of rural agriculture in the benefits of sectoral growth. These constraints are the results of both structural factors and agriculture and trade policy. The primary structural impediment is land distribution and use, which is attributable to both economic and agronomic differences, and has its roots in the early development of a commercialized sector. The policies that reinforced a growing disparity in income and welfare for the poorer households in the rural areas are those that limited the flow of resources such as credit, fertilizer, irrigation, and rice price policy. The inequities in the distribution of the benefits of sectoral growth are aggravated by the demarcation between the subsistence and commercial sectors. The commercialized sector, the export sector, has taken advantage of the growth in world markets and responded appropriately to the transformation of the sector. The subsistence sector, however, has not participated in this transformation.

The dichotomy that evolved between the development of a growing commercial sector and subsistence has its roots not in a colonial past as in most of Southeast Asia, but in the development of an international demand for rice which began in the mid-1800s. The rich plains area was commercialized, with subsistence and semi-subsistence agriculture occurring in the more extensively used dryland areas. This geographical split was a response to the extensification of padi land spurred by the growing international demand for rice. The growth in the international markets led to the purchase of land in the central plains by ethnic Chinese to control a large supply of rice. This consolidation of commercial interests further reinforced the geographical split between a export sector and a subsistence sector.

The subsistence sector, which is for the most part on the more marginal lands, received little public assistance in the development of an infrastructure to increase the productivity of land and labor. As the limits to extensification began to be felt (declining yields and scarcity of land to clear), there were few alternatives for these farmers. But, in the central plains and the other commercial areas, the infrastructure had expanded for several decades, which facilitated diversification as a complement to more intensive rice cultivation.

The minimal amount of investment in the subsistence sector during a time of rapid investment in the commercial sector made it difficult for subsistence producers to gain access to the resources needed for intensification and diversification. These resources are land and inputs such as fertilizer, irrigation, and credit.

Most of the increase in income in the last three to four decades of growth came from land expansion. Therefore, landownership would determine in part how benefits were distributed. Tenure arrangements would create differences in land productivity that would affect farm income and its distribution.

The worsening of the distribution of income in Thailand could be attributable in part to the increase in land tenancy and landlessness at least until the late 1970s (table 18). Tenancy increased greatly from 1963 to 1976, but the area of holdings increased 36 percent and population increased 11 percent (246). Although there was an increase in land per person, data are not available that reveal how the land was distributed. Increases in the average size of landholdings and increases in tenancy support the hypothesis that the distribution of newly acquired lands was unequal. Krongakaew suggests that the distribution of landownership by different groups was highly skewed, and that data reveal that poor farmers are losing land

and gradually changing into farm tenants. He suggests that poverty could have increased because poor farmers did not have enough land for subsistence production or the income to improve poor land (246).

Table 18--Ratios of rented land to total landholding

Region	1963	1971	1973	1978	1981
			Percent		
North	0.8	14.9	15.5	16	13.8
Northeast	.2	3.4	3.3	3.9	3.5
Central 1/	7.5	27.1	29.3	28.3	27.9
South	.3	4.2	4.4	4.4	4.3
Total	3.6	11.9	12.3	12.6	11.6

1/ Figures for 1963 and 1971 include upper and central plains only, and exclude rural Bangkok.

Sources: Data for 1963 and 1971 adapted from (244); data for 1973, 1978, and 1981 from (263).

Although the number of landless households in the rural areas did not increase significantly in the three decades, landlessness is now a problem. In the northern regions, 13.5 percent of agricultural households were landless; 10.6 percent in the central plain were landless. In the upper north, two-thirds of the landless are under the poverty line (246). This degree of landlessness, coupled with economic growth in the rest of the country, exacerbates the growing gap in income leading to institutionalized poverty, which will be permanent unless a large amount of relatively unskilled labor can be absorbed into other sectors.

Another particularly acute constraint in the subsistence subsector is access to credit for long-term assistance to develop infrastructure to intensify production or diversify to higher value commodities. Much of the land cultivated by subsistence and semi-subsistence farmers in the last few decades was obtained initially by clearing and producing on it. The problem is that untitled land cannot be used as collateral for agricultural loans in the formal sector. A large government program now underway registers titles to provide credit, improve the land, and allow farmers to break out of poverty. The lack of irrigation in the rainfed areas also has limited investment in inputs (fertilizer) and high-yielding varieties of rice. Without guaranteed water, it is too risky to invest in inputs and unlikely that public monies will be spent to develop an irrigation network. The high fertilizer/padi price ratio provided a disincentive for farmers seeking to improve their yields, but again the critical constraint is not this expense but the availability of an appropriate amount of water. The beneficiaries of the fertilizer subsidies are the better-off farmers who get 85 percent of the subsidized fertilizer flowing to the irrigated areas (278).

One of the most controversial issues in agricultural policy is the effect of changes in the rice premium tax and therefore the price of rice on incomes of limited resource farmers. Two thorough studies of this issue concluded that the rural poor would gain very little, if any, from increased rice prices. Most of the gains would accrue to large commercial farmers (267, 278).

Many of the rural poor subsist on the padi they produce and also seek outside employment to purchase the additional rice they need. They are, therefore, net purchasers of rice. The Trairatvorakul study shows that only 13 percent of net rural gains would go the poorest farmers, while the richest households would receive 48 percent of total net gains. The benefits that would accrue in the rural labor market due to an increase in rice price would most likely be minimal. The amount of hired labor is a small proportion of total labor in padi production and therefore it is unlikely that increased output price will have much of an impact on rural wages.

The urban and rural poor, who must spend a proportionately large amount of their income on rice, may actually become worse off, especially in the short run. At the present price levels, approximately half of the rural and urban poor have calorie deficient diets. Further undermining of their fragile existence could be expensive politically and present longrun economic costs to the country.

The agricultural sector as a whole has benefited from agricultural growth. Along with this growth has been a worsening gap in income distribution, a warning signal that a large segment of the rural population is not benefiting from growth in the sector. This disparity originated in the geographical separation of the commercial and subsistence sectors. The commercial sector has the most productive land, highest returns, an ability to reinvest in the land, an infrastructure to facilitate the most efficient use of inputs, and the most developed transportation system to assist in marketing. In the subsistence sector, on the other hand, most of the growth came from extensification. Now that land is constrained and yields are declining, the sector needs to be revitalized or it will suffer tremendous declines in the standard of living.

At least two changes need to occur in the sector to prevent a decline in welfare. First, the excess labor from the sector must be absorbed into either the commercial sector or manufacturing. Second, public investment must be channeled into the subsistence sector to allow the sector to increase rice yields, contribute to food security, and diversify and participate in potential benefits from trade.

The impediments to intensification stem from agricultural policies currently biased against the subsistence sector. These include policies such as the fertilizer policy and the rice premium which served as disincentives to increase production. The price guarantee and support programs have failed for the most part because of budget problems and inadequate storage. Those who benefited were not subsistence farmers but middlemen and owners of storage facilities.

These growing inequities must be seen in the context of a country trying to adjust to a changing resource base and international environment. The problem of structural poverty is exacerbated by a geographical split, with commercialization taking place on the most productive land and subsistence production on much less productive land. The most efficient solution to structural poverty may not be duplication of the infrastructure in the central plains, but easing the necessary transition of resources out of subsistence agriculture to other sectors of the economy. The Thai government has made numerous endeavors to facilitate economic ventures to raise the income of those living in the marginal areas. This is exemplified by the development of soybean production and processing and the cassava project in the northeast. 52/

52/ The government is also attempting to develop soybeans because it expects that rising incomes will change diets to include more red meat and poultry and that this will require larger imports of meat which it would like to avoid.

Conclusions

The main issues that Thai agriculture and trade policy now have to respond to are: 1) dealing with the end of a long period of growth due to extensification, and 2) reduced demand for primary export products on the world market. The challenge for policymakers is how to redirect agriculture and trade policy to facilitate the intensification and diversification of agriculture. As the whole economy has been geared toward international trade and self-sufficiency in rice for centuries, this abrupt redirection of agriculture will be difficult.

The central problem inhibiting growth in the sector is that the mix of agricultural export products (rice, maize, cassava, and sugar) is very vulnerable to the dumping practiced by the more developed countries. These countries are rival suppliers for these commodities. 53/ The regional demand for rice in Southeast Asia also has changed in the last decade since more of the importing nations have developed their own rice producing capabilities as a move toward food self-sufficiency. The result of these structural changes is tremendous price declines that have transformed agriculture from a leading sector to a lagging one. Sectoral growth is slowing since the earlier abundance of land that at one time contributed to Thailand competitiveness in agriculture has disappeared.

Policies that may respond appropriately to this crisis will most likely not be found in traditional export agriculture based on land-extensive cereals, starches, and sugar. This is especially true if the changes in the international commodity markets reflect structural change in participating country agriculture and are not merely another cyclical downturn in world commodity prices.

The primary response by the agricultural sector has been diversification into more highly valued crops such as fruits and vegetables. Agricultural trade policy has moved to support more import substitution policies. Thailand imports large quantities of cotton, dairy, and soybean meal and is self-sufficient in vegetable oil due to strong protectionist policies. However, the effect of import-substitution on the agricultural sector will be small since these industries require a small amount of land and labor. Given this prognosis, the question now remains how the two subsectors of agriculture, commercial and subsistence, will respond to the changing situation, and what policies will encourage a positive response, both with regard to increasing growth potential and development performance.

Government involvement in Thai agriculture has been low relative to most of its neighbors. The main policy tool used is the rice price premium. The objectives of this policy are numerous and have varied over the years. It seems likely, even if unintentional, that this policy of taxation contributed to the early diversification from commercial rice production to high-value crops. The commercialized central plains, which grows most of the rice for export, benefited the most from the rapid growth in exports and consequently was able to develop the infrastructure needed to diversify. The government could play the most efficient role in this subsector by assisting in agronomic and marketing research. The most limiting factor for successful diversification for the agricultural sector will be in reading international demand; that is, determining the mix of cultivation activities that will maximize income and for which the area either has a competitive advantage or is willing to develop one. The depressed agriculture sector has led to low wages among the unskilled. This will enable the commercialized sector to intensify production and perhaps create a temporary advantage due to cheap labor.

53/ Since Southeast Asia is experiencing a major drought this year and production, at least in Thailand, has been cut in half, it is very likely that the United States will respond in 1988 by reducing its acreage restriction program.

The subsistence subsector was unable to take advantage of much of the growth that occurred in the last two decades. The sector has suffered from underinvestment and persistent poverty. There are numerous constraints preventing the subsector from participating in the move toward diversification. Among them are access to enough fertile land to subsist and provide a surplus and access to inputs and credit. The most painful aspect of the changes occurring will be in the labor market because it is overwhelmingly agricultural. A major part of agriculture will stagnate, and the standard of living will continue to fall. It is doubtful whether either the commercial sector of agriculture or the industrial sector will be able to absorb much labor. To compete in the international market in a time of increasing protectionism, the sector as a whole must develop the flexibility necessary to respond to changing markets. The challenge is for agriculture and trade policy to minimize the growing gap in access to resources and incomes.

Malaysia's tremendous resource endowments and low population allowed it to become, in many ways, a showcase of agricultural growth and development. The British colonial heritage left an agricultural structure from which Malaysia continued to build a growing export sector. The export sector flourished in part due to large quantities of exploitable land, a rich mineral base, and the ability to respond to a changing international demand for primary commodities. As in many developing countries, agriculture was viewed as the engine of growth for the rest of the economy. 54/ This surplus was used to develop a manufacturing sector, reinvest in both smallholder and estate agriculture, provide for the infrastructure necessary to maintain a level of food security, and to meet the development objectives laid out in the various 5-year plans. Domestic agricultural policy played a vital role in determining the success of the export strategy that Malaysia pursued, and provides an understanding of the ways in which agricultural growth contributed to development performance.

Any analysis of Malaysia's agricultural policy must include two major policy initiatives: the New Economic Plan (NEP), which began in 1971, and the National Agricultural Policy (NAP, 1984). The NEP was designed to facilitate the integration of ethnic Malays into the economic activities of the country and thereby address the serious income differentials among the dominant ethnic groups of Malaysia. NEP was essentially a response to the colonial structure of production and the social and economic inequities that it created. This involved a collection of policies aimed at establishing opportunities and skills for Malays to eliminate economic stratification based on ethnic origin. In other words, the NEP was intended to be a policy to facilitate the integration of ethnic Malays into the economic activities of the country and thereby address the serious income differentials among the dominant ethnic groups of Malaysia. The NEP would allow the Malay population to develop skills and gain access to the factors of production to compete equally with other racial groups. Under the NEP, the agricultural sector was emphasized as a major source of growth for the economy as a whole and so policy has been directed toward encouraging the efficient commercialization of export crops such as rubber, oil palm, and cocoa. As such, agricultural growth has been regarded as an important way to finance industrial development. Linking growth in the sector to development, agricultural policy under NEP has been seen as a means to alleviate rural poverty. It also has incorporated rice self-sufficiency goals aimed at providing national food security and as a way of providing an income for traditional padi farmers.

NEP was based on the belief that the problems encountered by Malays, especially in the rural areas, arose from imperfect markets and low productivity. The four main interventions conceived to address the problems of rural poverty were: 1) institution building, namely the creation of a central bureaucracy that was supposed to implement specific policies, 2) fiscal policy, 3) large-scale input and output subsidy programs, and 4) extensive land development and resettlement schemes. These intervention mechanisms sought to transfer assets.
The NAP represents a significant departure from NEP because the policy is responding to very different situations. NEP was a set of policies responding to the inequities of a colonial heritage in an environment of growing international demand for primary products whereas the NAP was responding to a contracting world demand and the deterioration of many commodity prices. All had serious repercussions for the highly export oriented Malaysian economy. Debt problems also contributed to the belt-tightening under NAP. Malaysia, along with much of the world, found itself with serious debt in part caused by the recession and also partly due to perhaps over ambitious development expenditure under NEP.

54/ This process was greatly aided by rich tin reserves and later through oil reserves.

Private investment took a downturn in the mid-1970s. There is some argument that this was a response to the investment restrictions imposed by NEP and that public investment then grew to fill the gap and maintain the commitments to development expenditure and government investment in the corporate sector. 55/ The prolonged downturn on the international market, and growing debt, led to a choice among policymakers to either continue to support growing public sector involvement as under NEP or to give freer hand to market forces as proposed under NAP.

The NAP's major objectives are "income maximization from agriculture through the efficient resource use and revitalization of the sector's contribution" (183). With respect to agriculture, it constitutes a shift away from a belief in the economic viability of smallholder production and their subsistence orientation in favor of increased commercialization of smallholder output. The shift from NEP to NAP represents an adjustment from a era of rapid growth to much slower growth and therefore a much more careful management of public resources and an emphasis on privatization. This policy change also has required some postponing of the socioeconomic goals of restructuring under NEP and a re-evaluation of the costs of poverty eradication.

Structure of Malaysian Agriculture

Evolution of Export Agriculture

The objectives of the British colonialist in Malaya were to establish rubber estates and extract the rich tin reserves. Unlike many colonial situations, the British had little interest in involving themselves in the domestic economy of Malaysia. It was possible to isolate their activities because of the vast amount of uncultivated land available, and because they used imported labor for their commercial activities. 56/ The labor imported from China and India reinforced a dualistic structure of agriculture with the estate sector typified by high returns to the owners of production and low returns to estate workers and farmers. This dualism developed racial connotations as the Chinese evolved from estate and mining workers to owners of production and traders while the Malay population maintained its traditional subsistence rice economy. The tremendous inflow of Chinese and Indian workers to fulfill the labor requirements for the British set the stage for serious racial problems.

The British colonial policy ensured that almost until independence Malays were involved very little with commercial agriculture and were given little direction and support, particularly in the subsistence sector. There was interest in the subsistence sector only when the exports could not support international purchases of rice. The focus of colonial agricultural policy until after the Second World War was in support of estate rubber production.

The first serious involvement of indigenous smallholders in rubber production came in the 1950s a decade before independence. This added a new dimension to export production. The

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55/ One of the ways seen to restructure the society involved the ownership of share capital. In 1970, about 63 percent of the share capital was foreign owned, and Malays owned less than 1 percent. The goals for restructuring equity were to increase national ownership to 70 percent by 1990, and to increase the Malay share including public trusts agencies to 30 percent (238).

56/ The land used for the estates was not being used for padi production, although the land the British acquired was most likely under traditional ownership by Malays and contributed to their subsistence production.

high world price for rubber stimulated rapid planting on smallholder blocks. The 1960s brought falling prices for rubber but productivity gains in both estate and smallholders sectors enabled the growth of production and exports in spite of declining prices. Smallholders had yield increases of more than 5 percent per year during this period, much more rapid than the increases of estates. Total production on the holdings grew three times as fast as the estates but average yields were still about 70 percent of the estates. The rapid build up of production on the smallholder blocks resulted in only a modest to flat increase in real income because of declining world prices and an increase in the rural population (208).

The estates on the other hand, were more flexible in dealing with the downward trend in world prices. They were able to sustain profits by increasing the productivity of land and labor. For example, wage costs in relation to value of output were reduced. The estates, because of their access to capital, were diversified rapidly out of rubber and into palm oil in response to declining world prices.

At this point, the estates had many advantages over the smallholders. The structure of agriculture as it evolved from colonial times reinforced the advantages that estate production had over the smallholder. The estates, by nature of their international sophistication in areas such as access to credit, technology, knowledge, infrastructure, and ability to take risks, were able to adjust and adapt to a changing international market. The smallholders, on the other hand, did not have the same advantages. This disparity in access to resources provided the rationale for the government to take the initiative to assist smallholder production.

The economic tensions in the 1960s caused by depressed commodity prices and declining terms of trade for the rest of the rural economy exacerbated an already serious racial tension between the Malays (who were 80 percent of the rural population) and the Chinese. 57/ These tensions culminated in riots in 1969. The growing disparities within the economy both with regard to race and access to resources (estate versus smallholder) provided a strong impetus for radical restructuring of the economy and inspired the evolution of the NEP. 58/ As discussed previously, the objective of policies under the NEP was to address the social and economic inequities resulting from the colonial period. It was hoped that the development of a smallholder sector would be a means to increase the export potential of the country and to deal with the growing income disparities both within the rural sector and the economy. The commercialization of smallholder agriculture was seen as a way to include a large section of Malay producers in the rapid growth of the export sector. This would result in increased exports, contribute to household income, and thereby alleviate the poverty in the rural areas. These objectives could be accomplished by massive replanting, land development, and resettlement.

The smallholder subsector consists of independent rubber smallholders, participants in FELDA (a government-sponsored resettlement scheme for rubber and oil palm producers), and those participating in the Integrated Agricultural Development Projects (IADP).

57/ The ethnic make-up of the national population is a source of debate. One estimate is that the Malays comprise 50 percent of the population, with the Chinese consisting of 33 percent and the Indians 10 percent (238).

58/ The Malays' political power and the Chinese' economic power contributed to the urgency for restructuring under the NEP.

Smallholder Rubber Production

The highest incidence of poverty in Malaysia is among rubber smallholders. Low incomes are a function of the size of holding and yields, with the two tending to feed on each other. Those producers with low yields tend to be smallholders with less than 3 hectares, while those who plant mostly high-yielding crops own more than 5 hectares. The policies adopted to deal with the land constraint and risk adverse behavior of the smallest producers is through government subsidized replanting and relocation in development schemes. The replanting efforts have met with limited success for the poorest group due to uneconomic size of land holding. Fragmentation of the land further exacerbates this problem and has led to abandonment of land. The Rubber Industry Smallholders Development Authority (RISDA) reports that the smallholders are very efficient users of resources since they are able to achieve yields comparable to the estates (table 19).

It can be concluded, then, that smallholder poverty stems from structural factors and not inefficiency. 59/ It has been suggested that even if smallholder production were raised 30 percent through more subsidies than under the present landholding system, this would still not provide the income to raise the household above the poverty line (208). Therefore government attempts to increase resources in the form of input subsidies ignore the fact that land size is a structural block inhibiting any progress toward alleviating poverty.

Policies Affecting Rubber Smallholders

Fiscal and pricing policies have been a means by which smallholders have supported the estate sector. The rubber tax in Malaysia dates back to the colonial adminstration (194). Smallholders still are subject to a similar tax and are taxed at the same rate as estates. The taxes include: 1) an export duty, 2) research duty, and 3) replanting duty. These taxes are expressed as a proportion of household and estate income and are regressive. The smallholders indirectly shoulder an additional tax burden since they essentially subsidize the estates; therefore: 1) most of the benefits of research accrue to the estates and 2) the replanting subsidy, administered by RISDA, benefits the estate sector since estates receive a full refund for replanting costs whereas the smallholders are entitled to a grant only after they replant, and in yearly installments (208). 60/

Smallholder Oil Palm

In the 1970s, the government re-invigorated a massive land development and resettlement scheme that had its roots in the late 1950s. This scheme was called FELDA (Federal Land Development Authority) and had two objectives: 1) to create a large 'estate' type of production system for the export market, and 2) to develop a means of alleviating poverty by providing the land and infrastructure necessary to bring a large group of marginal farmers above the poverty line. This was to be accomplished by opening up new agricultural lands for resettlement. Another federal agency, the Federal Land Consolidation and Rehabilitation

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59/ Smallholder refers to those with less than 5 hectares.

60/ Approximately one third of smallholders chose not to participate in replanting schemes. This may be attributed to the risks and costs associated with a loss in income while trees mature. More than 80 percent of those not participating were Malays, about half of whom had less than 2 hectares (208).

Table 19--Productivity of rubber smallholders and estates

Producers	Annual yield/acre	
	Pounds	Percent
Smallholders by poverty status:		
'Hardcore' poor	1,070	103.1
Moderately poor	737	71.0
Total poverty group	936	90.2
Estates by size, planted acres:		
101 - 500	1,038	100.0
501 - 1000	1,307	125.9
1,000 +	1,449	140.0
Average for all estates	1,343	129.4

Sources: (208), smallholder data computed from (219), and data from the estates, from (200).

Table 20--Area under rubber and oil palm cultivation in peninsular Malaysia

	Rubber			Oil palm		
		Smallholdings			Smallholdings	
Year	Estates	& land schemes	Total	Estates	& land schemes	Total
			1,000 hectares			
1965	752.6	999.6	1,752.2	NA	NA	NA
1966	734.1	1,023.9	1,758.0	103.7	19.0	122.7
1967	706.8	1,053.2	1,760.0	129.5	24.1	153.6
1968	678.2	1,055.5	1,733.7	154.1	36.7	190.8
1969	663.2	1,067.1	1,730.3	177.4	53.7	231.2
1970	646.6	1,077.3	1,723.9	193.4	67.9	261.2
1971	631.6	1,086.5	1,718.1	213.9	80.2	294.1
1972	610.3	1,092.0	1,702.3	245.4	103.4	348.8
1973	589.4	1,104.6	1,694.0	274.8	137.3	412.1
1974	574.2	1,117.6	1,691.8	324.5	175.7	500.2
1975	563.3	1,131.6	1,694.9	355.2	213.6	568.8
1976	553.3	1,147.8	1,701.1	377.4	260.2	637.6
1977	538.9	1,163.9	1,702.8	404.4	307.6	712.0
1978	531.0	1,180.0	1,711.0	NA	NA	719.1
1979	516.8	1,194.5	1,711.3	NA	NA	758.2
1980	507.0	1,210.0	1,717.0	NA	NA	879.9
1985	443.0	1,527.0	NA	NA	NA	NA

NA = Not available.

Source: (201, Oil Palm, Coconut & Tea Statistics, Department of Statistics, Kuala Lumpur, Malaysia, 1967-78. Malaysia, Economic Report, Ministry of Finance, Kuala Lumpur, Malaysia, 1978-80.

Authority (FELCRA), had the complementary objective of bringing abandoned land back into production.

FELDA was conceived originally as a funding agency to state governments that would implement the land resettlement and development projects since, according to Malaysian law, land issues are strictly the domain of the states. Delays and difficulties encouraged the direct participation of FELDA, and by the 1980s it had become one of the largest plantation companies in the world. Its annual budget allocation for 1981 was M$538 million, which came from the government, the World Bank, and Arab banking interests (169). This allocation subsidized land cost and some of the costs of land preparation. FELDA contracts out for the work of land clearing, planting, and other infrastructural development. Settlers are chosen by local politicians and high-level officials who serve on a special oversight board. Over 95 percent of the settlers are Malay, usually married men with established families.

Table 21--Value and share of rubber and oil palm in Malaysian export earnings

Item	1970		1975		1980		1983	
	Value	Share	Value	Share	Value	Share	Value	Share
	Mil. US$	Pct.	Mil. US$	Pct.	Mil. US$	Pct.	Mil. US$	Pct.
Rubber	1,724	33.4	2,026	21.9	4,617	16.4	3,66	411.1
Oil palm	264	5.1	1,320	14.3	2,515	8.9	2,977	9.1
Sub-total	1,988	38.5	3,346	36.2	7,132	25.3	6,661	20.2
Manufactures	572	11.1	1,927	20.9	6,107	21.7	9,797	29.8
Crude petroleum	164	3.2	726	7.9	6,709	23.8	7,871	23.9
All other commodities	2,439	47.2	3,232	35.0	8,224	29.2	8,594	26.1
Total gross commodity exports	5,163	100.0	9,231	100.0	28,172	100.03	32,923	100.0

Source: 1970 and 1975 data are from Fourth Malaysia Plan (4MP), Table 2.3, p. 18-19, and 1980 and 1983 data are from Mid-term Report (MTR4MP), table 2.4, pp. 48-9.

The settlers move onto the land after the crops have been planted, usually when they are within a year or two of bearing fruit. During this time, the settlers work on the schemes as wage laborers. The cost of developing the land, and production are charged to the settlers and they are unable to get title to the land until they have cleared all their debts. The settlers sell their crops through FELDA which receives the revenue and then pays the settlers a monthly net income. If the settlers are in need of cash or are dissatisfied with the scheme, it is common for them to sell their production to a private mill and obtain the entire revenue from the product. Like the independent smallholders, settlers' incomes from export crops are subject to wide swings. Although there are no income stabilization programs, FELDA offers a credit program that will sustain a settler's monthly income to a certain level. This is all to be paid back before land title is received.

The FELDA scheme has received criticism as a high cost method of tackling rural poverty. The average cost per settler in 1980 prices is about M$30,000 (209). One reason the costs are so high is because the schemes are designed to provide incomes in the median range. These benefits could be spread more widely if holdings were smaller, but smaller holdings may not be

able to sustain a median level of income, especially with declining commodity prices. 61/ Currently, each resettlement block is 10 acres, which is appropriate for the first generation, since this land can not be subdivided. This second generation will have to find employment in other sectors or as agricultural wage laborers.

The most serious structural problem in the FELDA scheme is income stability. The settlers' incomes are vulnerable to the vacillations in the world price for oil palm and rubber. Vagaries in the weather and other natural problems increase their vulnerability.

Table 22--Ownership of palm oil, 1986

Item	Private estates	FELDA FELCRA	Independent smallholders
		Percent	
Share of total area planted	52.4	41.8	5.8
	Off-estate	FELDA	Estates
		Percent	
Production in mills	54.9	26.7	18.4
		Million metric tons	
	2.3	1.1	.8

Source: Economic Planning Unit and Department of Statistics, unpublished tables, 1986.

Despite the problems with FELDA, it has contributed significantly to employment creation, accounting for more than one third of the additional employment in agriculture from 1960-75. FELDA also has increased growth in exports. Palm oil has increased 19-20 percent of total value of exports in the last 3 years. The FELDA and affiliated state schemes consist of 42 percent of the land in export production. Although the government underwrites some of the cost of land preparation, the processing and marketing of the product make FELDA a profitable enterprise. The project profits are diverted into a reserve fund, in part to finance future replanting. Most of the balance is used to finance corporate expansion and diversification. This may be justified on the grounds of developing backward and forward linkages. For example, FELDA has marketing offices in nine major cities including London, Tokyo, San Francisco, and New York. A tradeoff is made between the growth and

61/ Net income (net cash minus loan repayments) for settlers in studies of oil palm and rubber for the early 1980s shows the true net income for the rubber scheme to be below the poverty level of M$3,000. Oil palm earnings are above the poverty level at M$4,110, but this does not take into account the last 4 years of declining prices.

diversification of FELDA as a corporation and increased returns to the settlers. Although this priority toward diversification is a means of enforced savings for the settlers, it may pay off for them in the long run by providing more market power for the Malaysian industry. The continued support of the resettlement schemes may be a useful tool for tackling the poverty problem by providing a means to earn a living to the landless and the land poor and indirectly by stimulating overall growth in the economy.

Estate Sector

The estate sector, now and in the colonial times, has contributed tremendously to agricultural export growth. The greatest number of hectares in this sector are planted to oil palm, and the sector has increased efficiency through technology and vertical integration. This growth has been supported through various government policies and the ability of the owners to maintain high levels of reinvestment. The estate sector has benefited from the colonial structure of agriculture where elites had privileged access to resources even to the present. Government policies contribute to strengthening the sector through fiscal and pricing policies and the development of advanced research institutions. 62/ This preferential access to resources in the form of credit, inputs, or research and extension enabled the sector to respond quickly to changing market conditions. This flexibility allowed the estate sector to change both the technology and the crop mix in response to world demand. When there was a decline in the world price for rubber, estate owners were able to make the transition from rubber to oil palm. Estates could make this transition because they could take land out of rubber production, plant to oil palm, and still not incur significant cash flow problems because they were able to increase the productivity of the remaining land through technological changes and changes in the labor/capital intensities. The wage laborers have shouldered the cost of this flexibility; when the price of rubber was low, laborers on the estates were replaced with labor-saving technology. This has caused, and will continue to promote, hardship to displaced wage earners since the absorptive capacity does not exist in other sectors of the economy to accommodate a largely unskilled labor pool.

Although labor productivity rose with output per worker increasing 2.25 times in 1960-81, the beneficiaries of these gains have been the estates, not the workers. Profit margins on average have been as high as 55 percent on medium-size estates (208).

The characteristics of this sector, allowing it to contribute greatly to export growth, also have led to persistent poverty. This can be explained in part by the adherence to the cheap labor policy of the colonial era. From 1960-81, the real daily wages actually declined from M$3.4 to M$3.37 (202). During this time, the ratio of wages to revenue declined. In 1967, this ratio was 25 percent, but declined to 14 percent in 1981 (208). Wages on the rubber estates are linked to the world price. When the world price for rubber goes down, wages also decrease. The declining price of rubber over the years has increased the vulnerability of estate workers since their wages are tied to world prices, whereas the estates have cushioned the impact of radical changes in world price by stockpiling or other means of managing supply.

62/ These are highly sophisticated research institutions, with priorities focused on large-scale agriculture since these units are the ones which are able to readily adopt new techniques and technologies.

Table 23--Poverty households in plantation agriculture

Sector	1970 Poverty households	1970 Share of total	1980 Poverty households	1980 Share of total	1983 Poverty households	1983 Share of total
	1,000	Pct.	1,000	Pct.	1,000	Pct.
Agriculture	582.4	73.6	443.7	66.7	497.6	69.3
Rubber smallholders	226.4	28.6	175.9	26.4	247.9	34.5
Oil palm	2.0	.3	1.9	.2	1.5	.2
Coconut smallholders	16.9	2.1	12.8	1.9	10.1	1.4
Estate workers	59.4	7.5	39.5	5.9	57.5	8.1
Plantation agriculture	304.7	38.5	230.1	34.4	317.2	44.2
Nonagriculture	209.4	26.4	222.4	33.3	220.0	30.7
Total	791.8	100.0	666.1	100.0	717.6	100.0

Source: 1970 figures are from 4MP, Table 3.1, p. 33. 1980 and 1983 figures are from vague referencing. Add detail MTR4MP, table 3.2, p. 80.

The low and fluctuating wage rate on the rubber estates has led to a movement of labor out of the estates. One would expect that this would lead to a rise in the wage rate. Instead, migrant laborers are imported from Indonesia and paid 90 percent of the Malaysian wage. This policy allows the estates to contribute to the growth of the export sector, but seriously deteriorates the economic security of the estate workers who cannot be absorbed into other sectors in the short run and, therefore, are vulnerable since they are landless and without skills. 63/

The Estates and NEP

The previous discussion of the estate sector illustrates the similarity between the organization of production under the colonial regime and the current structure. The strict adherence to this mode of production is considered to be the most efficient, and capable of contributing the most in terms of sectoral growth. The estate sector is charged with facilitating growth, not with contributing directly to development objectives. The sector may be reproducing poverty for wage laborers on estates.

The estate sector includes the NEP goals through the corporate restructuring program under the Permodalan Nasional Berhad (PNB). Corporate restructuring, which includes the estates, involves changes in the ownership of equity. The NEP's objective is that by 1990 the Bumiputra (Malay) community will own at least 30 percent of the sector. The PNB acquired the Guthrie Corporation, which is a plantation industry, having over 76,500 hectares of oil palm rubber and cocoa. In 1982, the PNB negotiated with Harrison and Crossfields for

63/ The cheap labor policy, which encouraged the movement of labor out of the estate sector, has led to serious financial losses to the industry. Results from the Survey on Estate Labor Shortage (1986) showed that there was a shortage of 6 percent in 1985. For the palm oil industry, this resulted in crop losses of 14 million in 1985, as well as deterioration in the quality of harvested fruits. The rubber estates experienced a crop loss of about 18 million due to labor shortages in 1985 (160).

majority shareholding, resulting in 58 percent of the equity of one of the largest plantations in Malaysia, encompassing 82,000 hectares of rubber, oil palm, coconuts, and cocoa.

This restructuring is aimed at ensuring participation of Malays by increasing ownership of these plantations and developing a group of Malay entrepreneurs able to run these organizations. The restructuring allows Malays to reap benefits without sacrificing what is considered to be the most efficient organization for contributing to export growth.

Rice Policy and Implications for Food Security

Rice policy is an interesting aspect of Malaysia's overall trade strategy because it is an inward-oriented policy in a predominantly export-oriented agricultural policy regime. Also, since the revenues used to finance the development of the rice sector came in part from agricultural export revenues, the Malaysian experience may provide an important example of the link between export-led growth and development performance.

One of the objectives of rice policy is increased food self-sufficiency in rice. The goal of the rice self-sufficiency policy is to minimize the import bill for food to allow more resources for industrial imports and assure adequate food supplies at stable prices. 64/ Another primary objective of this import substituting policy is to raise the standard of living for the large number of Malays involved in rice production and considered to be living in poverty. The sector is composed of 90 percent Malays, and has the second largest proportion of people living below the poverty line. Because of this, the rice sector has become the target of many national development programs.

The key to understanding present rice policy is in determining the political and economic institutions and actors that molded the policy process. Second, a closer focus on policy instruments helps to determine the effect of these measures on rice production and marketing and the contribution of these instruments to achieving food security and alleviating poverty. Understanding the policymaking processes, instruments, and institutions will allow for an analysis of the distributional impacts of the policies and reveal some of the structural deficiencies that inhibit the objectives of the national rice policy.

The Process of Rice Policy Formulation: Production and Marketing

Under British rule in the early 1900s, there was no incentive for infrastructure development in the rice sector. The sector was left on its own, and the rice requirements were imported from other colonies, notably India and Burma. This was because the rice producing countries had surpluses, making it cheaper to import than produce. Returns from rubber and tin were much higher than for rice, inhibiting the movement of resources toward the rice sector. A sharp decline in the prices of rubber and tin in the early 1930s brought about the first call for rice self-sufficiency. However, by the end of the decade, rubber prices had risen to 11 times that of rice, and labor moved out of rice into rubber. To control this movement, the British imposed restraining measures such as determining the amount of land that could be taken out of rice production, restricting the transfer of land titles, and using moral suasion to discourage the padi farmers from cultivating rubber.

Results of this policy were the entrenchment of an ethnic division of labor with the Malays restricted to the subsistence rice sector and the other ethnic groups and the colonialists free

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64/ The farm-level price of rice as a percentage of world price was 149 percent for 1975 and 173 percent from 1976 to 1980 (243).

to move to the more profitable enterprises. This ensured the poverty of padi farmers through overpopulation and fragmentation of the land. When the Japanese occupied Malaysia in 1941, the sector was relatively unproductive, in debt, and 35 percent self-sufficient in rice (176).

Table 24--Exports of rubber and oil palm

Year	Rubber		Oil palm		Share of total value: Rubber	Share of total value: Oil palm
	1,000 MT	$M	1,000 MT	$M	Percent	
1970	1,345	1,724	402	264	33.3	6.0
1971	1,390	1,460	573	380	35.0	9.0
1972	1,365	1,298	697	363	37.0	10.0
1973	1,639	2,507	798	467	28.0	8.0
1974	1,570	2,887	902	1,086	20.0	14.0
1975	1,460	2,026	1,161	1,320	22.0	20.0
1976	1,620	3,117	1,263	1,155	16.0	11.0
1977	1,654	3,380	1,299	1,680	14.0	15.0
1978	1,614	3,601	1,515	1,871	13.0	15.0
1979	1,651	4,482	1,900	2,471	9.0	12.0
1980	1,526	4,618	2,258	2,603	7.0	2.0
1981	1,485	3,713	2,507	2,836	7.0	19.0
1982	1,378	2,655	2,817	2,742	7.0	13.0
1983	1,563	3,664	2,949	2,995	7.0	15.0
1984	1,591	3,672	2,979	4,542	7.0	20.0
1985	1,497	2,872	3,216	3,956	6.0	19.0
1986	1/1,131	NA	3,189	2,292	NA	19.0

NA = Not available.

1/ January to September 1986.

Source: (164).

The late 1940s and 1950s were characterized by steady increases in acreage and yields due mostly to the low rubber-to-rice price ratios and the introduction of a guaranteed minimum price (GMP). Rubber prices increased in the early 1950s and the problem of labor migration arose again. Although there were concerns about the rice sector, there was little policy direction or investment until independence when there was a call for complete rice self-sufficiency. The nature of rice policy began to change to incorporate broader goals such as: 1) a more equitable distribution of income, 2) foreign exchange savings, 3) stable consumer prices, and 4) an appropriate level of food security.

Although significant increases in rice production were made in the 1960s, the declining terms of trade between rice producers and the other sectors in the economy, and the increase in population resulted in only a modest gain in average real income. The slow growth of income among rice producers, who are predominantly Malay, contributed to the policy realignment of the early 1970s. This included the beginning of the Integrated Rural Development Projects

(IRDP). These areas benefited from concentrated government investment in production and marketing infrastructure as well as the development of social services. Rice policies were reviewed to enhance farm incomes and employment opportunities.

The increases made in the late 1960s and early 1970s in rice production left policymakers concerned that Malaysia would produce too much of its rice, thereby creating a tremendous financial burden on the government. The world food crisis of 1973, however, convinced policymakers to reverse this decision just 1 year later. With restored purpose, the Ministry of Agriculture continued opening up new padi land, intensifying agricultural research and irrigation projects. These initiatives enabled Malaysia to reach production levels of 80-85 percent of domestic needs in the late 1970s.

In the 1980s, slower export growth, coupled with a large public budget suffering from the weight of government expenditures and subsidies in the padi sector, led to self-sufficiency targets being lowered. 65/ The government announced, through the National Agricultural Policy (NAP) in 1984, that rice production targets would not exceed rates achieved in the late 1970s. "No country," the NAP stated, "...is ever self-sufficient in all its food requirements." Recognizing that the country was a 'high cost producer' the NAP added that it was not economical to produce 100 percent of its total requirement. Based on these considerations, the stated production level would satisfy 80 percent of the national requirement (203).

Although the government expenditures were previously directed toward infrastructural development to increase padi production in many of the poorer areas, the austerity of the 1980s required that policy be directed toward intensifying resource use in the eight gazetted rice areas, namely: Kedah, Kemubu, and Kemasin-Semarak in Kelantan, southwestern Selangor, Besut in Terengganu, Krian-Sungai Manik in Perak, Seberang Perak, and Seberang Perai. These areas contain three of the largest IADPs and are the only rice producing areas receiving infrastructural support.

Marketing Policies

In the early 1900s, the colonial administration pursued a low level of involvement in the processing and marketing of rice. This encouraged rapid commercialization and mechanization of rice milling, with the most efficient and lucrative plant and machinery owned by the Chinese. This created tension in the rural communities since this technology displaced traditional manual techniques used by the Malays. These Chinese millers also developed vertically integrated enterprises giving rise to concerns that they were developing monopoly and monopsony power at the pricing and marketing stages.

The government made some attempt to compete with these middlemen but it was unsuccessful because the farmers still were tied to the Chinese for credit (170). Through a credit extension system known as padi ratus, the middlemen were able to corner the coming harvest by providing cash or rice before the harvest. When the harvest was complete they would purchase the rice at below market prices. This lower price served as the interest payment to the lender.

During the Second Malaya Plan, the government appropriated M$20 million for agricultural credit and marketing, of which M$1.3 million was actually spent. This was to fund

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65/ Public development expenditures increased from $M9,150 to $M41,116 under the fourth 5-year plan (222).

cooperatives involved in agricultural credit, milling, and marketing, but they lacked the basic management and finance to be successful. 66/

NEP brought a new direction and intensity to rice marketing and production policies. The Chinese middlemen's role in the marketing process was thought to exercise such a pervasive control over rice markets that they were seen as the root cause of rural poverty. Because they were also often the financiers, they were thought responsible for padi farmers' indebtedness. These middlemen were seen as inhibitors of rural development and the way to overcome this was to break up this concentration in rice marketing. This provided the rationale for government intervention to redress ethnic and social imbalance in the rice marketing sector. Because of the high emotions involved, this hypothesis was readily accepted, and relatively little research was done to understand the role that these middlemen played in the marketing process. This lack of understanding of the system led to serious problems when the government took over these activities under NEP.

The adoption of NEP in the early 1970s and the disruptions in world food grain markets increased government intervention in rice processing and marketing and further entrenched the authority of Lembaga Padi dan Beras Negara (National Padi and Rice Authority or LPN).

Preceding the world food crisis of 1973, the price of rice was similar to border prices. After the crisis, private traders were accused of hoarding stocks of rice (210). This supplied the motivation for both rice price controls in 1974 and direct government participation in rice processing. Price controls were imposed ostensibly to ensure a reasonable price for consumers.

In recent years, LPN has come under considerable criticism from the public, the private millers, and the Auditor-General's office for alleged heavy resource use, highly inefficient milling and trading operations, and abuse of its market intervention powers. As a result of this, and because of increased budgetary pressures during this recession, proposals have been made to modify LPN's rice marketing policies (these are to be discussed in subsequent sections).

In order to reach the policy objectives discussed above, instruments were employed that affect the following: 1) farm revenue, 2) farm cost, 3) productivity, and 4) consumption of an agricultural commodity (also see 237). See appendix B for a summary of rice policy instruments.

Price Policy

To accomplish the first two objectives, LPN was granted the ability to implement fair prices for farmers and consumers. Since there is no definition of fair prices, the basis for the GMP adjustments generally are not known, but appear to have been motivated strongly by political rather than economic factors. It appears that LPN administers only the GMP and rice prices set by the government. This, however, ignores the fact that LPN governs effective prices to the farmer through its application of moisture and dirt content deductions.

66/ Farmers were skeptical of the operation since many preferred to divorce the processing and marketing from the growing functions. Perhaps more important, the Chinese middlemen strongly opposed their establishment since it directly threatened their operations. Some states in the 1950s and 1960s gave cooperatives monopsonistic buying powers which was strongly opposed by the Chinese. The Chinese turned this into a political battleground and their cooperatives were abandoned (170).

As the buyer of last resort, LPN has been far less stringent in the quality of padi it purchases. This has often made it the preferred first buyer since farmers are able to offer lower quality padi and receive the GMP with lower deductions from LPN. The higher quality padi can be sold to private millers at prices above the GMP.

Licensing policy

LPN exercises control over the processing and marketing channels, making it responsible for issuing licenses to millers, wholesalers, retailers, importers, and exporters. Since 1974, LPN has assumed the role of sole importer of rice to the exclusion of the private sector. In the past, private wholesalers could be licensed to import rice at the prevailing world price provided that they also bought an equal amount from the government stockpile at the GMP. Now, only LPN has access to the substantial profits that can be made from the sale of rice when world prices are low. 67/

Implications of Rice Policy in Alleviating Poverty

The policy instruments directed at output (the price support and the fertilizer subsidy) have their impacts on redistributive goals as well. A common feature of the padi fertilizer subsidy and price support schemes is that the amount that the farmer receives is predicated directly or indirectly on asset holding such as the size of farms. Each farmer is allowed a 100-percent subsidy on fertilizers for up to 2.4 hectares (the subsidy can be obtained by larger farms if they are subdivided into a number of units of 2.4 hectares each).

The price support scheme is indirectly related to farm size through yields since the support is computed in terms of output (volume) that the farmers deliver to the mill door. Therefore, the programs are biased toward larger farmers (owner operated, rented, or a combination of both). The direct relation is obvious for the fertilizer subsidy scheme but is less so for price supports. Under conditions of constant returns to scale and the absence of differences in economic efficiency of resource allocation, the distributive impact of the price support schemes can be expected to reflect the distribution of farm size. Evidence from (229), (161), and (158) shows that constant returns to scale prevailed in the major rice growing areas.

In the absence of relative efficiency in resource allocation between small and large or medium sized farms, the pattern of distribution is governed by the pattern of farm size distribution. Thus for Muda, which is the largest rice growing area in the country, a relatively high Gini coefficient of distribution of farm size resulted in a high Gini coefficient of distribution of fertilizer subsidy and price support. The same can be said about incomes that are skewed toward larger farm operators. This finding is corroborated by the following: 1) about 60 percent of all padi land is operated by one-third of all padi farmers and 2) for the period 1981-82, about 40 percent of all padi farmers who received coupons received less than 4 percent of all payments whereas the biggest 25 percent received 75 percent of total coupon payments (237). The Gini coefficient related to the receipt of coupon subsidy by different category of farmer was about 0.45 for the above period and could have increased since.

67/ These profits are accrued because LPN is often able to buy Thai rice which is of high quality and low price, mix it with Malay rice, and sell the mixture at a profit. The retail price for rice ($US/kg) is 0.50 which is high when compared with Indonesia (0.32), the Philippines (0.30), Sri Lanka (0.31), Thailand (0.21), Pakistan (0.38), and the world price (0.40) for 1979-81.

Therefore the impact of the output and input intervention program among producers was found to be regressive despite their professed aim of income redistribution. The wealthier farmers also have benefited from the capitalization of the price subsidies in land values.

Table 25--Gini coefficient of distribution

Farm	Fertilizer size	Price subsidy	Support
Besut	0.254	0.267	0.380
Jasin	.355	.478	.460
Tg Karang	.281	.298	.316
Grouped	.341	.378	.456
Muda/Kedah	.550	.586	.625

Sources: (158, 229).

Fixing retail prices was motivated by the concern to protect consumers from high and fluctuating prices. Since rice is a wage good, the retail price is an important determinant of wage costs through its impact on the consumer price index. Consumers are implicitly 'taxed,' but how this cost gets disaggregated into different consumer groups can only be inferred. There is an argument that the present pricing system imposes a progressive 'tax', on the different classes of consumers. The more affluent groups are taxed at a higher level through their consumption of better quality rice while the pricing system allows for the poorer segments of society to consume cheaper grades. 68/ On the other hand, the GMP is financed indirectly by rice consumers and lower income households specifically since they pay a higher price for mixed rice than they would have to for Malaysian rice. Consumption of local rice is inversely related to income; therefore, the poorer consumers are the most affected.

Although gains have been made in alleviating poverty for the poorest sectors of Malay farmers, there are structural problems that will perpetuate this poverty. A major study of the IADPs identifies at least seven factors contributing to persistent and widespread poverty in these schemes (185). These factors are small farm size and tenancy, population growth, stagnant yields, labor displacement, inadequate attention paid to nonpadi crops, insufficient opportunities for nonagricultural employment, and the rising cost of living and production. The IADPs contain a large proportion of farms too small to produce household incomes above the poverty line. The proportion of tenant-operated farms has decreased due to landowners taking back their land to run it themselves since padi production has become more profitable due to green revolution technology. The proportion of owner-operated farms and land has increased over time in Mada, Kada, and Besut. These displaced tenants who operate small farms, 50 percent in Mada and 59 percent in Besut, are likely to be in the poverty group, a group that must bear the costs of modernization.

Malaysia has made a tremendous economic commitment to assuring adequate food supplies at politically acceptable prices. A large production and marketing infrastructure has evolved over the last 15 years that makes it possible for Malaysia to produce the amount of rice necessary

68/ The difference in price between grade A1 and B1 is 6 cents/kg while between A2 and B2 is 5 cents/kg.

to maintain food security. The rice policies have been popular because they have allowed a high price support (including the coupon and fertilizer subsidy) to be paid to the producers. This gain to the producers has been financed by the consumers and the government. However, policy has been targeted poorly since about 59 percent of the 114,000 households still live under the poverty line (199). This can be attributed to the structural problems outlined above and because production, security, and redistribution goals have been focused on the same instrument (output). For most of the period considered in this paper, consumers have paid a higher price due to intervention. This cost must be balanced against stable consumer prices and the implicit subsidy they receive from government marketing. Efficiency losses of the system pertain not only to those due to price policy interventions but also to marketing interventions, which have crowded out the private sector. 69/

Apart from the efficiency and financial losses, a larger share of public expenditures in this sector is needed to police this vast complex that has been attacked for mismanagement and corruption. It also has given rise to 'rent-seeking' in various forms, one of which is smuggling. Smuggling imposes limits on the extent to which domestic prices can deviate from border (Thai) prices and has rendered consumption statistics with wide margin of errors (a 10-percent margin is in fact too modest) (167). Rice smuggling is an endemic problem with frequent reports in the papers. Mismanagement and rent seeking make it more expensive to maintain rice policies. This may have serious implications for food security objectives, increasing the cost of delivery of food supplies beyond the financial ability of the government.

Despite the massive intervention devised, rice growing is only marginally profitable even in the major schemes. 70/ Also, structural changes in the economy resulting in changing shares of tradable/nontradables, with their consequent effects on wage rates, have led to a substantial migration of padi farmers. Between 1980 and 1985, although the areas under padi increased slightly, production declined (199).

The 1980s, a Change in Agricultural Policy

The NAP represents a philosophical shift away from what is described as 'the prosperous peasant' (221). This shift is manifested in a movement away from the smallholder and subsistence production and toward the commercialization of smallholder agriculture.

The change in agricultural policy in the 1980s was brought about for three reasons. First, and perhaps most profound, was the growing debt problem. Second, policymakers were increasing aware that, despite the huge amount of resources expended to meet the socio-economic goals of the NEP, many families were still living below the poverty line. Policymakers, then, reassessed fiscal policies and the organization of land development and resettlement schemes. Third, policymakers acknowledged the changes taking place in the international markets for oil palm rubber and coconuts, and the need to respond to these structural changes through diversification.

69/ See (230) for an extensive discussion of the effect of government intervention in crowding out private marketing facilities.

70/ In Muda, production has been declining recently because irrigation channels have not been maintained. This decline can also be attributed to farmers not sowing new seed but instead allowing the rubble from the previous season to germinate. This leads to genetically inferior plants and lower yield/hectare. Also, unlike the research institutions for export crops, the rice research institutions are doing little to develop new strains of rice. This must be done continually, especially where there are large areas of production, to prevent complete devastation from pest and disease.

Malaysia's adjustment to the second oil shock and the worldwide recession led to a softening of Malaysia's export markets, subsequent deterioration in the terms of trade and growth, and, as a result, a weakening of domestic savings. The sharp drop in commodity prices led to financial imbalances that made continuation of fiscal and monetary policies increasingly difficult as domestic and external debt increased. In the 1970s, Malaysia closely followed countercyclical policies to achieve the objectives of high growth rates to support continued social restructuring. This was based on the expectation that the recession in the West was temporary and mild. As the recession continued, it became evident that declining revenue and increasing borrowing required an end to countercyclical policies. In 1982, the government enacted an adjustment program to bring outlays more in line with income, while keen attention was paid to the growing external debt. These measures included reducing and rephasing expenditures in the short run and 'privatization' over the medium term. This led to cuts in the growth of government spending from 27.8 percent in 1981 to -0.2 percent in 1984. The national deficit as a percentage of GNP was 20 percent in 1982 and declined to 7.9 percent in 1985 (160).

Serious resource constraints culminated in the 1980s. The amount of debt as a percentage of GNP was 41 percent in 1982, 52 percent in 1984, and 56 percent in 1985. The debt service ratio (repayments and interest/exports of goods and services) rose from 4.2 percent in 1980 to 18 percent in 1985 (160). Although this is low compared with many developing nations, it gives a rough estimate of the constraints in the economy and provides the setting for the determination with which policymakers pursued adjustment measures such as privatization, export promotion, and the National Agricultural Policy (of special concern to this analysis).

Despite the accomplishments in production of export commodities, the data for 1983 showed an increase in agricultural poverty. This resurgence was due in part to the increased number of rubber smallholders and estate workers and lower commodity prices. Although some progress has been made in alleviating poverty in the last decade, many families are still below the poverty line. The persistence of this poverty in spite of years of heavy investment required a reassessment of fiscal policies and the organization of land development and resettlement schemes.

High urban wages and depressed incomes in agriculture have led to large-scale land abandonment. There were approximately 880,000 hectares of idle land in 1978, 20 percent of the agricultural land (212). This represents a tremendous waste of resources and a significant loss of output.

To address the problem of uneconomic land size, the establishment of economic farm units is emphasized. Increased efficiency and crop diversification aimed at increasing incomes above the poverty level. Also introduced are measures to minimize the subdivision of land through inheritance (it is unlikely this will occur since land issues are fully under the control of the state governments and the cultural/religious authority of the Sultan). For established farm units, the problem of small farm size will be addressed by land consolidation and centralized management similar to the estates, and by revitalizing abandoned land by removing institutional constraints to the choice of land use. The purposes of the consolidation of holdings and centralization of management are to capture economies of scale and introduce the technology necessary to raise the productivity of land and labor.

The policies to accomplish these goals are: 1) corporate farming of idle land with a hired work force; 2) cooperative farming where owners agree to consolidation of their land, including the use of hired labor, and profit sharing among the owners; and 3) leasing large tracts of land to private companies (222).

Table 26--Poor households by sector and activity in peninsular Malaysia

Sector/activity	Total households		Total poor households		Incidence of poverty		Percentage among poor	
	1970	1983	1970	1983	1970	1983	1970	1983
	1,000				Percent			
Rural:								
Agriculture	853	907	582	498	68	55	74	69
Rubber smallholders	350	406	226	248	65	61	29	35
Oil palm smallholders	7	23	2	2	30	7	--	0
Coconut smallholders	32	31	17	10	53	33	2	1
Padi farmers	140	139	123	75	88	54	16	11
Other agriculture	286	162	186	87	65	54	24	12
Fishermen	38	41	28	18	73	45	4	3
Estate workers	1/	106	1/	58	1/	55	1/	8
Other industries	351	583	124	122	35	21	16	17
Urban:								
Mining	5	5	2	2	33	41	--	0
Manufacturing	84	222	20	28	24	13	3	4
Construction	20	38	6	5	30	14	1	1
Transportation and utilities	42	92	13	14	31	16	2	2
Trade and services	251	524	45	48	18	9	6	7

1/ Included in "Other agriculture."

-- denotes negligible.

Source: (198, p. 80).

In addition, a mini-estate model is being tested for regeneration of small rubber holdings under RISDA. 71/ The basic elements of estate management will incorporate new technology and allow for more efficient use of labor.

The various strategies are attempts to overcome technological bottlenecks imposed by small farm size. Although the NAP goal of realizing increased economies of scale is attractive in one sense, it is doubtful that this approach will satisfy the objective of increasing farm size. It has the potential of alienating landowners from control of their resources and effectively turning them into wage laborers on their own land. It will not likely solve the problem of income disparities since those with larger amounts of land to contribute will reap a higher profit and be able to use their labor power to pursue more lucrative employment than will the agricultural wage laborers.

71/ As of 1986, RISDA had set up 335 mini-estates involving nearly 20,000 participants. Of the total, 255 mini-estates covering 9,200 hectares were under oil palm, bringing the total area under mini-estates to 38,100 hectares.

The NAP's approach to the problem of obtaining economic-sized holdings is a major step toward the commercialization of an estate-type agriculture. But this process cannot be expected to eliminate the problems of poverty in the rural areas. A longer term solution is needed that will bring about a shift out of the agricultural sector. This may be possible with the structural transformation that has taken place in the economy in recent years (the development of industrial export potential).

The NAP represents an important shift in agricultural and rural development policy that has a number of implications for other developing countries. Malaysia has found that even with large-scale investment in the agricultural sector with both broad and focused development strategies, sustained over two decades, utilizing technologies in key commodities, and with growth of support services and infrastructure, rural poverty can be reduced but not eliminated. Further, Malaysia's experience suggests that continuing growth in agricultural output, exports, and per capita incomes brought about by the overall development of an economy was a major factor in inducing a structural change in the economy that allowed the development of employment in the secondary and tertiary sectors. This in turn allowed for the transfer of labor out of the agricultural sector and gives some promise of a longer term solution to the problems of rural poverty (222).

Conclusions

Malaysia grew rapidly and steadily in its export-oriented agricultural sector. The largest contributors to growth have been the estate sector and the smallholder FELDA participants. The FELDA program has successfully transformed economic growth into improved economic welfare for its participants. Despite this success, after 15 years of rural development, national poverty has been reduced by only 13 percent. Significant progress has been achieved in increasing income for some groups such as those involved with FELDA and the IADPs, but this has also brought about increased economic polarization. This approach has essentially led to uneven development, with 41 percent of the rural population still in poverty as of 1983. Although export-oriented growth has occurred, its contribution toward broad-based development has been disappointing because the structural constraints to improved development performance were not addressed effectively.

The link from export revenues/sectoral growth to development can occur directly through the increased per capita income as occurred in the FELDA program or indirectly where export earnings contribute to public revenues, which in turn provide a social and economic infrastructure. This is exemplified by the rice growing sector under the IADPs.

The NEP was essentially the umbrella for policies to link economic growth to development objectives. The desire for Malay participation in the economic progress of the country was mandated by the growing political strength of the majority. The policies that comprised the NEP were not just political rhetoric. The survival of those in power depended on the support of the large constituency of Malays in the rural sector and they demanded to share in Malaysia's wealth. There are four groups within the rural population affected by the development policies of the NEP. These were the independent smallholders, smallholders on the resettlement schemes, estate laborers, and those involved in rice production.

Resettlement schemes, largely under the auspices of FELDA, have been the showpiece of Malaysian development. The FELDA schemes provided a means for groups of marginal farmers to produce and market products, which provide an average income well above the poverty line. The welfare of the smallholders is strengthened further by the international marketing activities of FELDA. Policies that focus on the economic viability of the smallholder are crucial for ensuring broad participation in the development process. FELDA has been highly

successful in both contributing to export growth and tremendously improving the standard of living of those involved. The problem remains, however, that FELDA is a expensive mechanism for generating producer income and that only a very small proportion of the poor can be reached through this program.

The largest group in the agricultural sector are the rice producers. Though they do not contribute to export growth, they provide 70-80 percent of the rice for the country. Agricultural policy toward this group has a dual purpose. One is ensuring a politically acceptable level of food security and the second is providing a means for a large percentage of Malay farmers (90-95 percent) to make a living. The rice subsector has benefited from the development of an economic and social infrastructure that not only allowed rice production in the IADPs to be profitable, but also created a network of services to enhance the material well-being of rice farmers. These programs were support by government revenues generated from export revenues. The policies creating IADPs and assisting smallholders have met with limited success because the structural problems of land tenure have not been addressed. Contrary to the objectives of the NEP, the massive inflow of resources into this subsector as in smallholder rubber have led instead to a worsening of the gap in income among rice producers with different land resources. The development of the rice sector as a means to meet food security needs has been successful but very expensive. There is serious doubt that this can be maintained as government programs lead to misallocation of inputs and a lack of research into the agronomic problems of large-scale rice production lead to declining productivity.

The groups that benefited the least from economic growth in the agricultural sector are the wage laborers and the rubber smallholders. Most of the independent smallholders are rubber producers who have the highest incidence of poverty in the sector. This structural problem stems from both an uneconomic size of holdings and fluctuations in the world price of rubber. Since smallholders are relatively productive compared with the estate farmers, the issue remains of either restructuring landholdings and providing some protection against the vagaries of world price movements, or developing policies to ease smallholders out of rubber production into a more land-intensive, growth-oriented commodity. Instead, policies to this point have been geared to input and output subsidies and extension, essentially ignoring the structural constraints to growth.

The wage laborers on the estates are also a major poverty group. They have experienced constant real wages and increased productivity. This process has been reinforced by government policy that has sanctioned migrant workers from Indonesia, paralleling the colonial cheap labor policy. The result of this migrant labor is the reproduction of poverty. This group, Malaysian estate workers, has been used essentially to facilitate growth but has reaped few of the benefits of development.

Both the rubber smallholders and the wage laborers on the estates are caught in the middle of a transition within the agricultural sector. The problems of low income among the estate workers arises from a surplus in labor. Contraction in the labor required mainly in the palm oil industry has resulted from labor-saving technology. The industry is also under tremendous pressure to remain competitive in oil palm production. To hold onto this tenuous advantage, the industry is importing cheap labor, which further undercuts the economic viability of the Malaysian wage earners. The required movement of labor out of oil palm to other sectors within the economy is difficult, particularly during this time of declining and unstable commodity prices and concomitant sluggish growth in other sectors in the economy.

In the long run, it is questionable whether Malaysia should encourage rubber production. The market is limited and other countries produce rubber more cheaply. Since there are concerns about the long-term benefits of investing in rubber production, policy should be directed to

increasing opportunities for those in this poverty group out of rubber and into other more highly valued products or into other sectors in the economy.

Malaysia falls into the category of countries that have grown rapidly in their agricultural sector and, as their competitiveness wanes in primary production, are unable to move resources out of agriculture quickly enough to avoid declining returns and increasing poverty. (The Malaysian government has expressed concerns over the growing productive capacity of low-cost producers of oil palm and rubber. Malaysia's combined tree stock and processing procedures produce a superior product, but it may only be a matter of time before these low-cost producers develop the technology and expertise to compete in the same product grade. The colonial regime provided Malaysia with a strong base in primary production and an appreciation of the importance of responding to changes in the international market.

The major challenges facing policymakers are the diversification of the export sector in response to changing international demand and supply conditions and redesigning rural development policy in the wake of a declining government expenditures in agriculture. One of the reasons that Malaysia has been so successful in promoting growth in the economy is its ability to respond to a changing world market. This gets more difficult as the production and marketing technology becomes more sophisticated and expensive. Countries such as Malaysia (upper-level developing countries) must turn to more value-added commodities as they lose their competitiveness in primary commodity production. There is much discussion among policymakers in Malaysia now concerning the growing competition in oil palm from Indonesia. Whether or not this is an imminent threat, a successful Malaysian growth strategy must cultivate diversification toward more processed agricultural goods if it is to maintain its active position on the world market.

The NAP represents a contraction in the social welfare programs, but the public expenditure on development programs is still large and supports a large and expensive food security and income maintenance program for much of the rural population. The challenges for policymakers will be balancing the trade-offs between the goals of the NEP, the political necessity of progressing toward those goals, and the financial constraints that have occurred, and will probably intensify as the economy responds to the changing international environment.

ECUADOR

The Ecuadorean case provides insight into the effects of high levels of exports regardless of trade policy. Ecuador's experience offers evidence that increased exports may have a positive effect on the economy if macroeconomic conditions are favorable. In addition, the critical linkages between exports and development are identified. These linkages, distribution of resources, employment, commercialization, and government intervention, affect the response of economic development to export growth.

Despite frequent policy changes and adverse macroeconomic conditions, the agricultural sector has continued to provide employment and income. With the economy's prospects dampened by foreign debt and inefficient, protected industry, the agriculture sector still holds the most promise for growth and employment. Recent market deregulation in the agriculture sector can be expected to reduce distortion in the economy and increase the productivity and efficiency of the sector. Large producers and exporters influence prices and quantities of agricultural exports. A free market orientation with an emphasis on exports may stimulate growth in the agricultural sector, but overall development may be retarded if only a minority has access to the market.

Background

The Ecuadorean economy grew rapidly in the 1970s. Petroleum exports began in 1972 at US$59.5 million, nominal, rose to US$692.8 million in 1974, and reached a high of US$1.8 billion in 1985. Real GDP more than doubled from 1972 to 1982. Foreign public debt rose from US$332.7 million in 1970 to US$4.9 billion in 1982. The government deficit reached 18.5 billion sucres (S/) in 1982 from a S/3-million surplus in 1974. Inflation doubled from 8 percent in 1972 to 16 percent in 1982. The sucre became increasingly overvalued as inflation rose, but the exchange rate was maintained at a constant nominal level.

In 1982, private foreign lenders, concerned about Ecuador's ability to repay its burgeoning debt, restricted further lending. The cutoff of funds prompted a financial crisis to which government responded by restricting imports, tightening spending, rescheduling the debt, and devaluing the currency.

Throughout this turbulent period, the trade strategy was inward-oriented, focusing on imports, exchange rates, and industrialization, rather than agricultural exports. Since 1982, exchange controls have been removed, export taxes and many import restrictions have been lifted, and the private foreign debt was "sucretized." The economy remains heavily dependent on petroleum export revenues and suffered further shocks from a 50-percent drop in the world price of petroleum in 1986 and from earthquake damage to the oil pipeline that cut off supplies for 5 months in 1987.

The Agriculture Sector

Landform, climate, and altitude constrain and differentiate agriculture in Ecuador. In the highlands (Sierra), indigenous farmers have few alternatives to traditional crops (wheat, barley, potatoes) because of the limits imposed by altitude, steep slopes, and cold temperatures. A short growing season, rugged terrain, and distance from the port reduce the competitive position of the Sierra for export crop production. The coastal plain is suited ideally to tropical export crops and has more flexibility in crop alternatives and expansion of cultivated area. Bananas, coffee, and cocoa were the main foreign exchange earners before petroleum.

The pricing policy in the 1970s for domestic staples attempted to support producer prices while limiting costs to consumers. Although retail price controls assisted poor consumers, insufficient funding and ineffective administration of the grain-buying parastatal, ENAC, did little to increase price stability for producers of most crops. Facing expensive inputs from protected domestic industries and poor terms of trade for its product due to exchange rate appreciation, agriculture generally stagnated during the oil export boom.

Agrarian reform, beginning in 1964, modernized agriculture in the Sierra from feudal estates to fragmented subsistence mixed with large cattle ranches. Continuing into the 1970s land reform efforts distributed land to former serfs, but frequently left them worse off. New plots were often less fertile than the old and there was no access to extension, credit, or marketing channels. Rather than redistribute resources, land reform reorganized and drew capital out of agriculture.

The current administration in Ecuador is adopting an economywide market reorientation program that has a particularly strong effect on agriculture, since the sector has been regulated heavily. The government reduced the number of consumer price controls from roughly 25 products to a few basic commodities and plans to eliminate fixed support prices to producers. In place of administered prices, an agricultural commodities exchange, the Bolsa de Productos Agropecuarios, was established to facilitate free market pricing. Liberalization of the market for agricultural goods is expected to stimulate production of agricultural commodities both for domestic consumption and for export.

Trade Policy

Trade policy in Ecuador from the 1950s has been oriented toward import substitution and maintenance of a strong and stable currency. While exports were viewed as vital earners of foreign exchange, economic growth by the 1960s was seen as the result of industrialization, fostered by import protection, rather than through expanded exports. Export agriculture provided the taxable surplus to support government and industry. Discovery and export of petroleum, which began in 1972, generated an enormous increase in income for the government and the population, especially when petroleum prices tripled in 1973. The windfall gain resulting from oil exports enhanced the import substitution trade policy. Oil revenues were spent on expanding infrastructure and subsidizing food in an inflationary period with little attention paid to agriculture. Government expenditures, which exceeded the expanded revenues, were financed by external borrowing based on the optimism surrounding oil exports. This unsustainable pattern of borrowing was curtailed in 1982 when lenders began to question Ecuador's ability to repay and cut off further loans. The resulting cutback in imports and government spending triggered a recession. Since 1982, Ecuador has tried to rectify the crisis and return to a growth path through restructuring foreign debt, devaluing and unifying its dual exchange rate system, and reorienting agriculture toward a more market-driven structure.

Links Between Agricultural Trade Policies and Development

The first link in the chain between agricultural and trade policies and development is the choice of trade policy and, more importantly, successful implementation of that policy. Ecuador's trade policies have been oriented historically toward protecting domestic industries from foreign competition and minimizing imports. The result was a small, high-priced domestic market that created few jobs. Despite these inward looking policies, Ecuador found itself exporting large quantities of petroleum in the 1970s (12 percent of GDP in 1975). The unexpected prominence of exports in a country that sought to develop domestic industry led to a high rate of economic growth during the 1970s. In contrast to Ecuador's inadvertent success, many countries are struggling to expand agricultural exports to stimulate growth in their economies. Due to the sudden export success achieved with the exploitation of oil,

Ecuador provides an opportunity to study the effects of expanded exports on development, independent of the policies and conditions necessary to achieve that expansion. This analysis focuses on the linkages between export-led growth (petroleum) and development in Ecuador.

Exports increase the income of a country. How widely the income is dispersed throughout the economy determines the extent to which development responds to growth in exports. Four factors highlighted in this study affect the degree of dispersal of increased income: 1) the distribution of the means of production, particularly land in the case of agriculture, 2) employment, 3) commercialization, and 4) government intervention to alter the other three factors.

Agricultural Sector

Ecuador is divided into three regions by the Andes mountains that run the length of the country from north to south and separate the Pacific coastal plain from the temperate highlands and the Amazon basin in the east. The population is roughly evenly divided between the coast and the mountain Sierra. The third region, the Amazonian Oriente, contains only a small percentage of the population and has remained largely undeveloped until oil became important in the 1970s. The Galapagos Islands constitute a fourth region, but are not significant agriculturally. From sea level to over 12,000 feet, Ecuador has a diversity of climate that allows almost any crop to be grown. Domestic food crops are grown primarily in the Sierra: potatoes, corn, beans, barley, and wheat. Crops for domestic use (feed corn and soybeans) are grown on a large scale on the coast. Colonists in the Oriente have concentrated on cattle, subsistence crops, and some coffee, settling along roads as they are opened. In the petroleum production area, large plantations of African oil palm provide a significant proportion of the country's cooking oil and shortening requirements.

Geography dictates the type of crop grown by a particular farmer because the climatic differences between regions are pronounced. Thus agriculture can be divided clearly into export versus domestic production, tropical versus temperate crops, and large-scale versus smallholder categories. Large-scale export production takes place on the coast, while most subsistence farmers live in the Sierra. Agricultural trade policies affect large- and small-scale producers differently, partially as a result of size differences and partly because large and small producers are distinguished by the types of crops produced and the climatic limitations they face. The different impacts of agricultural policies can be highlighted by examining production along regional and commodity lines.

The Coast

Since colonization, the coast has been dominated traditionally by export crops. The warm climate, fertile soils, and natural ports made it an ideal location for cultivation and export of cocoa, tobacco, and cotton textiles to Europe in the 16th century. As coffee, and then bananas, took on major importance, the vagaries of international prices determined the fortunes of coastal inhabitants. Despite their disincentive effect, export taxes on agricultural products persisted because they provided considerable revenue to the government. With the advent of petroleum revenues in the 1970s, export taxes on bananas and sugar were reduced to encourage greater exports. In the case of coffee and cocoa, however, international prices reached such high levels in the mid-1970s that these taxes generated considerable revenue and were retained. In the 1980s, export taxes on these and other crops have been eliminated. In the last 20 years, agriculture in the coast has diversified into domestic crops, particularly feed corn, soybeans, and African oil palm. Rice, the traditional staple, has always been important among small farmers in the coast.

Banana. Banana is cultivated largely on estates. It first came into commercial production in the post-war years when entrepreneurs cleared land and established plantations. Banana production was an opportunity for new farmers to enter the export market after the decline of the cocoa plantations that dominated exports since the late 19th century. Most banana producers were middle class people from the city, without longstanding ties to the land (37). Banana exports were very successful, in large part due to repeated hurricanes and disease and labor problems in Central American countries. Ecuador became the world's leading banana exporter in 1953, and has remained so except in 1983 due to extreme weather conditions.

Competition, exhibited by reductions of all nonproduction costs such as housing and sanitation favored concentration in banana production. A change in banana varieties from Gros Michel to Cavendish, prompted by disease problems, accelerated significant changes in production patterns and income distribution. Banana production became consolidated in large estates because Cavendish bananas bruise easily and require more careful handling and more intense management than the Gros Michel variety. The Cavendish bananas cannot tolerate transport in an open truck and are instead boxed at the plantation. Centralized, specialized packing spelled the end of small farmer production of bananas. Further, because the new variety's yields were almost triple those of Gros Michel, banana hectares needed to be reduced or Ecuador's increase in output would depress international prices. The area planted to bananas was gradually cut back from over 200,000 hectares in 1967 to 75,000 in 1980 as total production rose by 24 percent (55).

Coffee. Coffee represents nearly a third of Ecuador's agricultural exports in value terms and is cultivated by small farmers who invest minimal effort in the crop unless the price is high. Yields and quality are both low as a result. Much of Ecuadorean coffee is the "unwashed" type, in which the pulp is retained in processing. As a result, it receives a lower price on the world market. Since Ecuador is subject to International Coffee Organization (ICO) quotas, government programs for coffee in the 1960s and early 1970s concentrated on diversification into other crops. When world coffee prices climbed in the mid-1970s, attention returned to renovation programs.

Ecuador's share of the ICO coffee quota is divided among exporters according to their size, but a certain percentage of the quota is guaranteed to small producers through cooperatives that export directly. Minimum coffee and cocoa prices are both fixed by the Ministry of Agriculture, but are based on international commodity market quotations. The oligopsony position of exporters is curtailed with this intervention.

Small farmers outside of coops obtain credit through wholesalers or exporters who examine the coffee crop in the field and lend money to small producers on the basis of expected production. The money then is used to finance weeding and the harvest. When the crop is sold, the interest cost is deducted and the balance owed the farmer is paid, frequently in kind with an implicit interest rate on the loan of 100 percent. The relationship between farmer and middleman is often very amiable, however, because the middleman is the farmer's only access to credit and is not seen as an exploiter.

Cocoa. Cocoa has been a primary export of Ecuador since colonial times. Ecuador produces a superior aromatic cocoa that is used especially for flavoring. Ecuador's share of the flavor cocoa market was 43 percent in 1960-62 (46), and rose to 57 percent in 1986 (44). Aromatic cocoa comprises about 10 percent of the total world cocoa market. Cocoa was originally produced on large plantations that provided significant export earnings for the country. However, fungal disease devastated the crop in the 1920s and the Depression cut worldwide demand for cocoa in the 1930s. Unsuccessful cocoa plantations were divided up and rented or sold to former workers who diversified into rice, sugar, corn, and bananas. Beginning with

World War II, international demand for cocoa revived, but the dominant form of production is now on small farms.

At present, cocoa mainly provides supplemental income to small farmers. Very little investment is made in the aging stands and the cocoa is not harvested when prices are low. The few large cocoa producers sell directly to the exporter or processor in Guayaquil and medium-sized producers sell to 20-25 wholesalers who, in turn, sell to processors or exporters. However, small producers must sell to local assemblers, which means more links in the marketing chain and lower returns to smaller producers. These wholesalers provide credit at high rates of interest. World market prices for cocoa have not been sufficient to stimulate investment in replanting to replace old, low-productivity trees at these interest rates as long as the trees still yield at all. The government currently has projects to provide credit and improve genetic stock and technical assistance to farmers to renovate their plantings. Higher productivity and quality are necessary to make disease control profitable in cocoa, as well as coffee.

Until recently, development of the domestic cocoa processing industry has been stimulated by preferential export tax treatment. Producers of semi-processed cocoa paid no taxes and actually received an export subsidy while an average tax of 25 percent was imposed on raw cocoa exports in the 1970s. As processing capacity increased, processed cocoa exports rose to 64 percent (bean equivalent) of cocoa products in 1981 (55).

Unlike coffee, cocoa does not have a quota and the prospects for Ecuadorean cocoa on the world market are favorable. The superior aromatic cocoa produced in Ecuador is blended in fixed proportions with other cocoa. Although total world demand is not growing rapidly, aromatic cocoa represents a small, but important, share of the market that Ecuador could exploit more than it has. Improvements in quality control and investments in new trees are needed now to meet growth in demand.

The Sierra

The Sierra was inhabited long before the coast and its agricultural structure is much older. Spanish colonists obtained large estates, or haciendas, with a semi-feudal agricultural system that has been modified only recently. The serfs are smallholders now, but the former landlords still own estates in the fertile intermontane valley and maintain considerable political influence through the powerful Chamber of Agriculture. Dairy cattle have become an important enterprise on many haciendas and in some areas they are experimenting with nontraditional export crops such as cut flowers, asparagus, and snow peas. For the indigenous smallholders, potatoes, soft corn, various legumes, barley, onions, and garlic remain the principal crops. Although wheat was once a major crop in the Sierra, more profitable alternatives have crowded it out of production.

Wheat. Large and small producers alike cultivated wheat in the temperate Sierra as a traditional crop. In 1965, Ecuador produced 46 percent of its consumption needs, but production declined steadily as consumption increased. In 1980, production was only 7 percent of consumption. Declining productivity has been blamed on the breakup of 36 haciendas that produced a large fraction of the wheat in the Sierra. In 1974, 84 percent of the new fragmented plots were smaller than 1 hectare and technical inputs and expertise were lacking (61).

A more important cause of the decline in wheat production is the introduction of consumer subsidies on wheat imports in 1973 as part of a plan to ease the effects of petroleum-induced inflation. The prices of wheat and other staples to farmers fell as consumers substituted bread for potatoes and corn in their diets. Although producer prices were supported at the

same time, wheat production was not profitable, compared with the alternatives. Large farms, becoming more commercialized as a result of land reform, shifted to dairy, which is well suited to the cool Sierran climate. Smallholders cultivated barley, potatoes, or other traditional crops in response to relatively low returns in wheat. As production has declined, imports have increased to where over 90 percent of the wheat consumed in Ecuador is imported. Hard wheat, which is preferable for breadmaking, cannot be grown in the Sierra. Imported hard wheat is cheaper than domestic soft wheat the price of which is supported. Mills are required to buy all the domestic production, which they then blend with harder wheat. Although the price is supported, selling soft wheat is difficult for farmers because mills are not eager to buy the inferior wheat at elevated prices. Wheat supply is controlled by import quotas. Hence, marketing difficulties are a further disincentive to producing wheat.

The Oriente

Isolated by the Andes and covered with tropical rainforest, the Oriente has been the last place to be settled in the country. Native Amazonian people occupy a sizable portion of the region and are sophisticated enough politically to have secured legal protection for their territory. The major industry in the region since the early 1970s is petroleum. African oil palm plantations have been established in the area opened up by petroleum extraction. Several thousand families have migrated to the Oriente to work in the oil industry or to farm. Some coffee is produced on the eastern slopes of the mountains and many areas, particularly in the southern part of the region, have been cleared for cattle grazing. The region is not suitable for intensive agriculture or colonization because of its fragile soils.

Policy Goals

Two main goals of agricultural policy are identifiable in the period since 1970: maintenance of stable food prices to consumers and food self-sufficiency. Other goals for agriculture are less evident. Extension and other services to the agricultural sector have suffered from institutional problems, including bureaucratic rivalries and funding shortages. High quality is critical to maintaining competitiveness in the international market, yet programs and incentives have not been established to promote quality control in the main export crops (bananas, coffee, and cocoa). Similarly, marketing, credit, and technology problems remain in the domestic agricultural system.

Food price stability was pursued by controlling the prices of basic commodities at the retail level and by subsidizing imports of wheat and milk. Food self-sufficiency was promoted by supporting farm prices of staples and by limiting imports of corn and other crops. Thus, both objectives were served by two policy tools: pricing policy and import subsidies.

Pricing Policies. In response to rapid inflation in the 1970s, the government began a system of interventions in agricultural markets. Official retail prices were set for dozens of foods and minimum support prices were established for producers. Although official retail prices usually held, farm support prices were more of a problem. Minimum prices were based on costs of production alone without considering demand factors and were reviewed and revised infrequently. Although the program has been costly to the government, it has not been successful always in supporting the prices of commodities at the official levels through regulations and direct intervention. ENAC, the parastatal agency responsible for buying, selling, and storing agricultural commodities to maintain official prices, lacked sufficient storage and funding to purchase a large enough percentage of the crop to support price. Unable to support price, ENAC often was not able to sell the crop if price fell below the support level, except at a loss. As ENAC bought and sold at the same price, scarce storage was provided at no cost. Informal imports and exports with neighboring countries made price support and supply maintenance efforts even more difficult. The current Febres-Cordero

administration intends to eliminate official prices. ENAC would function only in a supervisory role, such as providing inspectors.

Official prices were more stable than world prices over the period 1970-82, but since official support prices frequently did not hold, market prices may in fact have been less stable than world prices for the period (64). For example, it is generally believed that ENAC buying and selling operations in 1982-83 had a destabilizing effect on the corn market. Reca suggests that nominal rates of protection were positive for corn, wheat, and soybeans, except during the years of exceedingly high world market prices in the mid-1970s. For rice, the rate was negative (roughly -33 percent) for 1972-82, but prices were more stable than the world markets (variability of 12 percent between 1970 and 1982 versus 39 percent for world prices) (54).

Import Restrictions and Subsidies. Ecuador is chronically deficient in milk supplies although many haciendas in the Sierra have moved into dairy production. Production per animal remains low despite high quality dairy stock (breeding cows were recently purchased from the United States in its dairy herd buyout program). Imported nonfat dry milk was subsidized and retailed by the government to improve nutrition among low income groups. However, some sources estimate that if import restrictions on corn were lifted, more grain fed to dairy animals could increase production sufficiently to eliminate the milk deficit through domestic production. Lower feed prices would reduce the cost of other animal products as well.

The wheat subsidy was once a significant drain on the government budget with a peak of US$25.4 million in 1980 (54). Since the financial crisis of 1982, the wheat subsidy has become a tax on millers who must purchase imported wheat at the "reference price." When this price is above world price, as in the mid-1980s, the millers absorb the cost. Flour prices are also regulated, squeezing the millers, but leaving the impression of subsidization. Low bread prices could also be achieved by importing wheat at the world price and deregulating domestic prices. However, the revenue generated by the high reference price is substantial.

The Structure of Agriculture

Resource Ownership

The pattern of land tenure in the Sierra is a result of the Spanish colonial system of encomienda, intended to protect indigenous groups from exploitation in exchange for work. From the encomienda developed the haciendas, or large estates, that persist. A system of indentured servitude arose, of which the best known form is huasipungo. The tenants, or huasipungueros, worked 4-6 days per week on the hacienda in exchange for a small plot of land to cultivate and additional privileges, such as access to grazing land or firewood. In the coast, land was abundant and settlement began with cocoa plantations for export production. These landowners used a form of sharecropping in planting and paid laborers to tend and harvest the cocoa. Thus a monetary rather than feudal system arose and competed with the estates of the Sierra for labor (56).

Despite the inequalities of the land tenure system, political support for land reform was not achieved until 1964. The capitalist influence of the coast, where a continual supply of cheap labor was needed, meshed with the humanitarian views of the liberals and intellectuals and with reform pressures from external donors. In addition, the more progressive hacendados supported land reform as a way to free themselves from their obligation to the huasipungueros and allow them to invest in industry or finance in the cities. To some extent, the huasipungo system had already been disappearing on its own since some hacendados, eager to modernize, had moved into a wage labor system. The traditional landowners were, logically, the main

opponents to land reform. The traditional hacendados exerted significant control in preventing the transfer of resources to the landless through the powerful Chamber of Agriculture, which influenced the drafting of the agrarian reform law. The law itself called for expropriation of large idle farms, but set a high maximum farm size which cushioned the estate owners. The agency in charge of administering the land reform, IERAC, received little funding and was not allowed to take an active role in stimulating expropriations. In this way, the interests of both the progressive and the traditional landowners were maintained.

Agrarian reform in Ecuador transferred land, but not market power, to campesinos because the interests of the large landholders were preserved, despite the appearance of reform. In the Sierra, the hacendados kept the fertile valley land for themselves and divided the steep, erosive mountain slopes among their former tenants. Smallholders were often worse off than under the huasipungo system because the new plots of land they received were frequently less fertile than their huasipungos had been and they lost the additional benefits of pasture or irrigation.

Table 27 presents the distribution of farms by size from agricultural census data in 1954 and 1974, the most recent survey. It also includes income per capita for 1974. The skewed distribution of land is little changed over the 20-year period. The largest farms earned approximately 34 times as much as the smallest on a per capita basis in 1974.

Table 27--Distribution and income of all farms by size

Size of holding	Share of farms		Total annual Share of hectares		Per capita income,
	1954	1974	1954	1974	1974
Hectares	Percent				Sucres
0 - 1	32.2	34.1	1.4	1.7	2,658
1 - 5	49.5	43.0	10.0	11.1	2,765
5 - 10	8.7	10.8	5.1	8.8	4,789
10 - 20	4.1	5.2	5.1	8.7	8,789
20 - 50	2.9	4.1	7.3	15.4	8,484
50 - 100	1.4	1.4	7.2	11.1	38,577
100 and above	1.2	1.4	64.3	43.1	90,587

NA = Not applicable.
Source: (41).

Despite the transfer of landownership, the productivity of the new small farmers, the minifundistas, was constrained because they lacked farm management skills. IERAC conducted "showcase" projects instead of coordinating with existing agencies for agricultural extension, thus making poor use of scarce funding. The result was that many farmers received no extension or other services. Without extension services, the productive capacity of minifundios was low. A further difficulty was that most new owners did not receive title to the land they acquired under agrarian reform, meaning that the land could not be used as collateral for loans. Small farmers received land as a result of the reform, but not the support services necessary to make their new property productive.

Commercialization and Employment

Despite their small size and the lack of assistance, small farms in the Sierra remained viable due to the petroleum export growth of the 1970s that provided a source of wage employment to supplement farm income. The small plots held by the majority of farmers in the Sierra were too small to feed a family or to fully employ family labor. Commander and Peek estimate that only 23 percent of the available family labor is occupied on farms of less than 1 hectare, although the land is intensively cultivated (41). Because nonagricultural jobs were relatively well-paid, smallholders filled unskilled jobs in the cities while other family members (wives and children), combined with some hired labor, cultivated food crops on the small parcels for sale as well as for home consumption. The availability of off-farm employment and the increased demand for wage goods (food) that resulted from the petroleum boom, drove small farmers rapidly into the commercial economy. Nearly half the earnings of small farm households from 1-5 hectares came from off the farm in 1974, while off-farm earnings accounted for 62 percent of the income on farms of less than 1 hectare (41).

Continued land pressure in the Sierra contributed to migration to the coast and the Oriente in search of employment and land. During the last 100 years, the population of the coast has grown from 13 percent of the total to roughly half. Although unclaimed land is still available in the coast, it tends to be in less accessible areas. Adding to the migration to the Oriente have been the economic opportunities created by the construction of the oil pipeline. Families colonize along roads and cultivate subsistence crops and some coffee.

The main effect of land reform was to alter the structure of land tenure from feudal estates to a mixture of large farms and subfamily sized units. The structural change sped the process of commercialization of large and small farms by converting the haciendas to a more efficient production system that included greater capital intensification and hired labor. The reform coincided with the interests of estate owners that recognized the inability of the feudal system to satisfy the growing demand of the urban population for food and wage goods (41). Minifundistas found their small plots inadequate and searched for off-farm employment to supplement their incomes. As a result of oil boom employment opportunities, the minifundio sector survived, supplementing meager farm incomes with wage earnings.

Trade Policy and the Effect of Petroleum

Until recently, Ecuador's trade strategy was one of import substitution. The primary concern was to protect the exchange value of the sucre. Import substitution was mainly seen as a way to conserve foreign exchange. The policy was successful in that the currency was one of the most stable in Latin America with only three devaluations in the postwar period before 1982 (table 28). A second policy objective was to generate revenue for the government. Taxes on imports and exports represented about 47 percent of revenues in the late 1960s and agricultural exports (excluding fish and forest products) represented 90 percent of total exports. Agriculture was mainly viewed as a source of taxable income (46).

With passage of the Industrial Development Law in 1962, import substitution policy was used to promote industrialization, which was considered by many to be synonymous with development. Industries selected for protection were granted exemptions from tariffs on imported capital goods as well as other tax benefits. In addition, there were two exchange rates in effect. The official rate, which was fixed for much of the period at S/15 to the dollar, applied to trade, government expenses, interest on foreign loans, and dividends on foreign investments. The free market rate applied to all other transactions, including tourism (46).

In 1972, oil exports began via a new pipeline across the Andes to the port of Esmeraldas. The petroleum period, 1972-82, brought tremendous changes in the export earnings of the country. The oil price shocks in 1973 and 1979 boosted revenues for the government and significantly increased income. The exchange rate became more overvalued as the government held its value fixed and demand for oil increased sharply. Despite worsened terms of trade for agriculture and other nonoil sectors, the role of agricultural exports remained that of foreign exchange earner.

Encouraged by the prospect of oil wealth, the government expanded its programs even more rapidly than revenues increased and turned to foreign lenders rather than domestic taxation or borrowing to finance its growing budget. In addition to public debt, private firms borrowed externally because fixed interest rates at home prompted little domestic savings. Expanding oil revenues enhanced the creditworthiness of the country for international loans. As long as oil income was climbing, economic growth could proceed more rapidly than otherwise and Ecuador could make the interest payments. However, commercial banks ultimately became nervous about the country's ability to repay and curtailed net lending in 1982. At that point, debt service was 8 percent of GDP (64). Emergency restrictions cut imports by 34 percent in 1983 and belt-tightening policies precipitated a recession.

Impact of Petroleum

Windfall gains from petroleum exports permitted Ecuador to grow faster than normal circumstances would allow. Although substantial investments were made in infrastructure, politically active urban groups were satisfied at the expense of the rest of the economy. Policies that discouraged exports, accumulated excessive foreign debt, and limited dispersion of oil benefits caused the economic outcome at the end of the decade to fall short of expectations. Although employment opportunities in the cities expanded as a result of petroleum trade gains, employment in the agricultural sector might have expanded considerably more had the exchange rate not been overvalued. Agricultural goods, which are mostly tradeables, would have received more favorable returns and the income opportunities in rural areas would have been greater, decreasing the allure of the cities. Massive debt that oil revenues could not support has reduced the growth potential of the 1980s. With slower economic growth in the near future, progress in development will likely be slower still.

Oil exports affected every aspect of the Ecuadorean economy. The overvalued exchange rate turned the terms of trade against agriculture. Inflation soared as disposable incomes increased; income taxes fell off, encouraging debt; public and private debt reached unsustainable levels; and the relative distribution of income worsened. Both trade and sectoral policies worked against growth and equity in agriculture and in the economy in general. The impacts of each topic are discussed below.

The overvalued exchange rate made imported inputs and consumer goods relatively cheap and exports relatively unprofitable. Existing high tariffs on manufactured goods that protected Ecuadorean industries from import competition were increased. The attraction of the domestic market was enhanced by comparison to the export market where products would have to compete with world market prices. Thus the focus of the manufacturing sector was directed internally rather than on the export market.

Policies to protect domestic industries adversely affected the agricultural sector. Mixed fertilizers and chemicals from insulated domestic producers were expensive relative to low after-tax returns on exported agricultural products. As a result, agricultural exports stagnated over the period. Banana exports did not increase from 1970 to 1982 while world demand annually increased by about 1.6 percent. Hence market share fell 3.6 points, from 21.5 percent to 17.9 percent of world exports. Ecuador's share of the cocoa market increased from 3.7

Table 28--Economic indicators, debt, and oil exports

Year	Nominal exchange rate	Consumer price index	External public debt 1/	Crude petroleum exports
	Sucres/US$	1980 Sucres	Million US$	
1950-60	15.00	NA	NA	NA
1961-64	18.00	NA	NA	NA
1965-69	18.00	NA	279.5 2/	NA
1970	25.00	30.56	332.7	.8
1971	25.00	33.12	404.4	1.2
1972	25.00	35.73	474.9	59.5
1973	25.00	40.38	551.9	282.1
1974	25.00	49.80	598.9	692.8
1975	25.00	57.45	744.9	516.0
1976	25.00	63.58	1,072.6	565.2
1977	25.00	71.58	1,789.5	484.1
1978	25.00	80.22	2,890.3	523.3
1979	25.00	88.46	2,948.4	1,032.0
1980	25.00	100.00	4,339.6	1,393.9
1981	25.00	116.39	5,072.2	1,560.2
1982	33.15	135.31	4,897.9	1,388.3
1983	54.10	200.85	7,673.2	1,639.2
1984	67.18	263.57	7,727.5	1,678.2
1985	95.75	337.33	8,406.3	1,824.7
1986	146.50	415.01	NA	912.5
1987	227.50 3/	535.30 4/	NA	NA

NA = Not available.

1/ Debt outstanding including undisbursed.
2/ Average for 1967-69.
3/ Rate as of October 22, 1987.
4/ As of June 1987.

Sources: (14, 63, 64).

percent of the world market in 1970 to 5.2 percent in 1980, but the increase was due to even more discouraging exchange rate and trade policies in two of Ecuador's main competitors, Ghana and Nigeria. Import-competing crops, such as milk and wheat, were hurt by access to cheaper foreign supplies (64).

With expanded incomes from oil revenues, consumer spending increased for both domestic and imported goods. Inflation, although dampened by artificially cheap imports, shot up from a traditionally low level (table 28). Ecuadoreans had been accustomed to stable prices, stable exchange rates, and stable interest rates. Because interest rates were held down (6 percent maximum on savings accounts for most of the period), domestic savings were low. The low

rate of domestic savings caused private firms as well as government, to seek financing abroad, ignoring exchange rate risk (table 28).

Royalties and taxes on oil profits provided the central government with a new and considerable source of revenue when petroleum exports began (table 28). The promise of oil wealth triggered an expansionary fiscal policy that was financed only in part by the increased revenues. Although oil revenues increased from approximately 7 percent of total revenues in 1973 to 14 percent in 1982, other forms of taxes declined, keeping government revenue at roughly a constant percentage of GDP. Falling revenues were partly the fault of an import-substitution orientation. As import-substituting industries developed, revenue from import duties fell off, as did export taxes because of the unfavorable export environment. However, declining tax revenues were also a function of complex tax laws and lax enforcement (64).

Petroleum income generated a burst of growth in the cities. Increased consumption and investment generated new jobs that rural Ecuadoreans migrated to fill. Wage earnings supplemented farm income for many families, thus benefiting even the lowest income group. Much of the increased government spending of the petroleum period went toward development. Infrastructure was improved through roads, electrification, schools, and hospitals. These improvements benefited all Ecuadoreans, but favored the urban population since most of the construction centered in the cities. For example, only 13 percent of the rural population has access to safe water, compared with 84 percent of urban residents. Rural areas have one hospital bed per 4,570 residents, versus 305 residents in urban areas (64).

Policy Reform Period

The increasing foreign debt and the government's deficit spending precipitated a crisis in 1982 when foreign commercial banks placed a limit on further lending. The policy reform period, 1982-present, has been characterized by contractionary measures, major macroeconomic adjustments, and an increased market orientation in agriculture and other sectors.

Following the advice of international donor agencies, adjustment of macroeconomic policies has been a priority in the process of rebuilding the Ecuadorean economy following the 1982 crisis. In the first year, the Hurtado administration cut public expenditures, sharply restricted imports, rescheduled the public and private foreign debt, and devalued the sucre. After further devaluations, the Febres-Cordero government switched most transactions from the official rate of 66.5 sucres/US$ to the intervention rate of 96.5 sucres/US$ in 1984. Finally, in August of 1986, the sucre began a free float. Nonpetroleum exports grew 23 percent partly as a result of this change (65).

Fixed, low domestic rates of interest in the 1970s had caused private firms to seek financing abroad. Following the financial crisis in 1982, the central bank initiated a "sucretization" program where foreign debt was assumed by the central bank and refinanced in domestic currency. Interest rates were freed in 1986 and new types of deposit accounts were created. These and other moves have already begun to strengthen the financial system that was severely weakened by the debt crisis. Other macroeconomic adjustments included slowing the growth of the money supply, interest rate deregulation, and improvements in tax collection and administration.

Market Orientation

The Febres-Cordero government, elected in 1984, has adopted an active program of market reorientation, economywide. In a short time, the government has reduced the subsidy on

domestic energy, eliminated export taxes, liberalized imports following the severe restrictions imposed in the wake of the crisis, fostered direct foreign investment in the country, and slowed credit expansion by the central bank. In the agricultural sector, the government has reduced consumer price controls to a few basic commodities and plans to eliminate fixed support prices to producers. In place of administered prices, an agricultural commodities exchange, the Bolsa de Productos Agropecuarios, was established to facilitate free market pricing. Corn, rice, and soybeans are the main commodities traded, but any agricultural commodity could be included. The exchange operates daily in Quito, Guayaquil, and a number of smaller cities. However, to date, ENAC, the grain-buying parastatal, has been the main trader. Heavy intervention by ENAC, which holds prices above market equilibrium levels, and low private participation in the Bolsa have limited its success thus far.

As free market pricing replaces regulation, the responsibilities of ENAC have been revised from active intervention to a supervisory role in the market. ENAC now deals with only three commodities (rice, corn, and soybeans) instead of 20. In place of government-owned storage facilities, a private sector warehousing and storage system, Almacopio, has been set up to take over ENAC storage structures. The government instead provides warehouse receipts for commodities placed in Almacopio. These receipts can be traded on the Bolsa.

Unfortunately, to the public, the Bolsa has become closely associated with the current government and its market-orientation policies. With the next change of administration, the Bolsa runs the risk of being rejected on political grounds before it has been thoroughly tried as a market mechanism. Failure at this point would make market reforms considerably more difficult to implement in the future because the issue becomes political as well as economic.

In terms of policy reform, one difficulty that persists is the effect of national politics on stable sectoral policy formation. Quito, the seat of political power in the conservative Sierra, and progressive, commercial Guayaquil, the main port, have a longstanding rivalry that exaggerates the differences between political parties and candidates. More than 20 political parties represent a wide range of views and hold varying degrees of power. As each new coalition comes into power, it rejects the achievements of the previous government and replaces existing programs with its own. Military dictatorships controlled the government from 1970-79. Since 1979, first a center-left, then a conservative government have been democratically elected. New elections were scheduled in 1988. The discontinuity of agricultural programs and the tendency to throw out the baby with the bathwater when rejecting old programs have adversely affected agriculture in the past and are likely to continue. Uncertainty is increased in agricultural decisionmaking because policies may not last long enough for an investment to pay off. Implementation of longrun programs is difficult because they are subject to political timetables. Not only must a project start soon enough to produce results under the same administration, if it is too slow in getting started, it may just become visible in the beginning of the next administration. The project may then be rejected simply because it is associated with the previous government. These problems exist in developed countries as well, but in Latin America the political swings seem to be more severe and frequent.

Conclusions

Trade Policy and Development Linkages

Trade policy is linked to development through the economic growth that results from trade. In the case of Ecuador, four factors are identified that affect the linkage between economic growth and development. Distribution of the means of production is the first factor. In Ecuador, particularly in the highlands, the majority of the best land is held in relatively few

large estates, while the bulk of the farmers cultivate sub-family sized plots, typically on marginal land. Land reform, attempted in the 1960s and 1970s, modernized agriculture from a feudalistic system to the present latifundio-minifundio system, with little tangible change in the distribution of the means of production. Of the export crops, bananas are produced on large estates. Coffee and cocoa are typically small farmer crops, but export is primarily controlled by a few large firms. As a result of the skewed ownership of resources, the majority of farmers benefit little from gains in agricultural export prices, because they produce a very small share of the crop.

The second element that affects development is employment. Income is transferred from those who export, the estate owners or merchants, to other segments of the economy via wages. In Ecuador, the linkage of trade and development through employment is clear. The 1970s petroleum boom was a time of prosperity in the cities: businesses opened, buildings were constructed, and jobs were created. Increased demand for unskilled labor (in construction and other fields) spread the benefits of economic growth to rural people who had no other ties to the export sector.

A third factor that affects the dispersion of income is, logically, participation in the economy, or commercialization. Ecuador's recent attempts to liberalize agricultural markets affect only those farmers producing for the market. Subsistence farmers remain virtually untouched. Commercialization has been enhanced in Ecuador by the employment possibilities generated by the oil export boom. Farmers whose plots were too small to support them were able to keep their farms viable by supplementing farm income with off-farm wages. Crops from their tiny plots were sold for additional income.

The fourth element is the policy approach taken by government. If the government takes no active role, it adopts a "trickle down" strategy, in which development occurs only through the first three linkages. However, most governments undertake policies that benefit certain population groups and enhance the transfer of income to the lowest income groups. Ecuador implemented a cheap food policy in the 1970s to mitigate the effects of rapid inflation. The effect of the program was to redistribute income from farmers to consumers. Farmers' returns were reduced, but the program increased the likelihood that the food requirements of the poorest would be met. In fact, much of the increased government revenue from petroleum exports was spent on roads, electrification, schools, hospitals, education, and consumer subsidies of food and petroleum products. Life expectancy and school enrollments increased and infant mortality rates declined for the nation as a whole between 1973-82.

Government policies can strengthen the links between growth and development by enhancing any of the first three links, or simply by providing basic services. Policies that improve the distribution of means of production, such as effective land reform (unlike Ecuador's), stimulate employment, or facilitate the integration of small farmers into the market economy, and enhance the development effects of successful trade policies.

Role of Agricultural Exports in Development

Agricultural exports were once the main foreign exchange earners in Ecuador and may again be the major source of export earnings as oil reserves are depleted 20 or more years in the future. Agricultural exports became less competitive on the world market in the 1970s as rising petroleum exports buoyed the exchange value of the sucre. Nevertheless, agricultural exports contributed 6.7 percent of GDP in 1975, compared with 14.8 percent of a smaller pre-oil GDP in 1970, persevering even with unfavorable macroeconomic conditions. As the largest employer in the economy (roughly 40 percent), the agricultural sector is a logical choice for stimulating economic growth in the future.

Macroeconomic policies strongly affect the environment for economic growth. For most of the petroleum export period, macro policies created biases against agriculture via an overvalued exchange rate, trade restrictions, and low interest rates that reduced credit availability. Exports of the three main agricultural crops, bananas, coffee, and cocoa, declined from a 1972 level of US$1.9 billion in 1985 dollars to US$565 million in 1985. Exchange rate and other adjustments in the 1980s have set the stage for sustained growth. Agricultural exports have already increased in response to exchange rate unification in 1986.

While it is widely recognized that rational macroeconomic policies are essential for a healthy economy, it must be stressed that macro readjustments alone are not sufficient conditions for development to proceed with no further encouragement. Sectoral policies also play a key role. Policymakers in Ecuador have tended to view agricultural exports merely as a source of foreign exchange rather than as a means of growth. Consumer subsidies reduced prices to farmers while food self-sufficiency policies restricted imports and raised domestic food costs. Conflicting policies created a highly regulated system with little incentive for growth. However, recent market-oriented policies will adjust the incentives faced by producers and can be expected to encourage greater agricultural production and a more efficient allocation of resources.

Macro- and market-oriented policies, however, are effective only if the economy is well integrated. Commercialization, a key link between growth and development discussed above, is needed to make free market policies effective. Although many Ecuadorean smallholders have made the transition from subsistence to commercial production, most still lack the financing, market expertise, and technical knowledge to effectively take advantage of the liberalized market conditions that are emerging. Small farmer "capacitation" programs in Ecuador have begun to address the additional obstacles that smaller farmers face. A free market orientation tends to benefit larger producers, who are already the best users of the market, but will not foster appreciable income growth at the smallholder level without programs or appropriate incentives targeted specifically to smaller producers. If a development effort is to be successful, it must generate income growth that is widespread.

GUATEMALA

Guatemala is a textbook example of a developing country with an open economy, predominantly agricultural, consisting of both a large number of traditional subsistence farms and a capital-intensive modern export sector. The sharp dichotomies that exist in the agricultural sector between large and small, rich and poor, modern and traditional are largely attributable to former periods of rapid agricultural export expansion. The benefits of commercialized agriculture in Guatemala always have been distributed unequally. The rural population has suffered declining access to land, high unemployment, malnutrition, and deteriorating living standards as a result of policies encouraging agricultural commercialization. Future export expansion must be based on a recognition that trade for growth is insufficient, where it does not also mean well-balanced development for poor populations and neglected sectors of the economy.

The political problems currently existing in Guatemala are the result of the widespread poverty and inequity existing in the countryside. This situation is the outcome of the relative emphasis that has been placed on growth and equity. Recognizing that the future political stability of the country depends on the pace of rural development, the current administration has stated that it will emphasize working with small and medium farmers. The government appears to recognize that the weakness of the connection between trade and development is not in itself an argument against trade. While the inequities of Guatemala's trade regimes in the past are obvious, anti-trade policies would be even less recommended, and are certainly unproven as better vehicles for development than pro-trade ones. For while trade-induced aggregate economic growth has not guaranteed rural development in the past, improvements will occur only if the general economy is expanding rather than contracting. The major problem confronting the Guatemalan government will be to establish a set of economic and policy conditions that foster export growth while ensuring that this expansion will have the desired effect on rural development.

Background

Guatemala is the largest Central American country in terms of gross domestic product (GDP), at about US$9 billion and population at over 8 million. Of the six countries featured in this report, Guatemala's economy can be described as being fairly open, with about 18 percent its GDP coming from exports (app. table 3). The Guatemalan economy has relied heavily on access to world markets as an outlet for its production since the early 1970s. Both the trade sector and the general economy in Guatemala are agriculture-based. In addition to contributing two-thirds of the value of exports, the Guatemalan agricultural sector accounts for over 25 percent of GDP and employs 60 percent of the nation's labor force.

The principal Guatemalan exports are coffee, cotton, sugar, bananas, and cardamom. The varied climate and wide distribution of good soils allow cultivation of a variety of agricultural products, including both tropical and temperate crops. In addition to the traditional export crops mentioned above, agricultural output consists of food crops for domestic consumption (the main ones being maize, beans, rice, and wheat), nontraditional exports (consisting primarily of fruits and vegetables), and a livestock sector (composed of a relatively stable beef and pork subsector, a declining dairy industry, and a growing poultry industry).

Given the importance of agricultural production and trade to the overall economy in Guatemala, one might expect a pervasive government presence in this sector. This has not been the case, however, since a history of economic concentration in the agricultural sector produced a pattern of political power relationships characterized by a laissez faire attitude.

As a result, public expenditures in areas such as rural infrastructure and agricultural research and extension have been modest. Furthermore, in many of those areas where the government has made an effort to intervene in the marketplace, the stated policy goals often are not accomplished because of inadequate funding. Examples of this are policies aimed at improving grain farmers' incomes and stabilizing consumer prices by commodity purchase, storage, and sales activities. The very limited public role in providing services contributes to the lack of economic development of the rural sector, where much of the population engaged in agricultural production lives at, or very near, the subsistence level.

As a result of this situation, the current economic and political climate in Guatemala can, at best, be described as one of cautious optimism. The current administration, sworn in for a 5-year term in January 1986 following 15 years of harsh military rule, inherited an economy in deep trouble. The world recession of the 1980s, combined with a worsening in the terms of trade for Guatemalan commodities, resulted in a reduction of exports and foreign exchange earnings. Guatemala's combined merchandise trade balance from 1979 to 1985 was over US$600 million. During this period, the foreign debt increased by 350 percent. More important, the country's debt service to export earnings ratio, which measures the ability to meet debt repayment obligations out of current foreign exchange earnings, increased over 700 percent. The accumulated deficit in the current account (goods, services, and net transfers) during this period was accompanied by contracting international money markets and an increasing unwillingness by private sources to provide direct investment due to the political unrest in the countryside. This forced the government to finance the deficit by using short-term credit at unusually high interest rates (95).

During this period, the government had been struggling to hold down its fiscal budget deficit. The central government in Guatemala traditionally has pursued conservative fiscal and monetary policies. During 1970-78, the annual budget deficit averaged less than 2 percent of GDP, a relatively small burden when compared with the remainder of the developing world. Between 1978-81, however, the deficit increased steadily from 1.2 percent of GDP to 7.4 percent. Tax revenues on agricultural exports declined by 54 percent during 1980-85. These taxes, which had accounted for 25 percent of total tax revenue for the government in 1978, accounted for only 3 percent by 1985. Because of the low level of development of the financial system and a demonstrated inability by the government to effectively collect legislated taxes, most of the budget deficit had to be financed by the Bank of Guatemala.

The monetization of the accumulated deficit added fuel to the inflation rate, which had been in double digits since the 1973 OPEC oil embargo. (By contrast, the average annual inflation rate in Guatemala for the 10 years prior to the oil embargo had been only 0.7 percent.) In order to deal with the twin problems of an escalating budget deficit and a persistently high inflation rate, the Bank of Guatemala set upper limits to the credit it would make available to the government. As a result, the government began to cut down on its investment activities. Between 1981 and 1985, government expenditures as a percentage of GDP declined from 16.0 to 9.7 percent. Public expenditures for social services fell from 5.8 to 4.3 percent of GDP during the same period. In real terms, this amounted to a 56-percent cut in expenditures on health services, a 34-percent cut in education, and an 83-percent cut in public housing. The proportion of the annual budget allocated to the agricultural sector fell as well, from 4.2 percent in 1981 to 3.2 in 1985, continuing a downward trend begun in the mid-1970s.

One effect of reducing public spending was to slow down the economy in the short run, thus helping bring inflation under control (the inflation rate was only 5.2 percent in 1984). However, the cutbacks also contributed toward a restriction of productive capacity in the longer run. The real growth rate of GDP, which was 0.7 percent in 1981, was negative during 4 of the next 5 years. Real GDP in 1985 was 5.8 percent less than in 1980, and GDP per capita was down almost 20 percent. Perhaps the most visible outward sign of the

deterioration in the economy was in the rate of unemployment, which increased from 2.7 percent in 1981 to 13.7 percent in 1985. The combined unemployment and underemployment rate went up from an estimated 32.6 percent in 1981 to 45.5 percent in 1985.

The poor performance in the domestic economy led to a significant overvaluation of the foreign exchange rate. Guatemala kept its currency at parity with the U.S. dollar since 1926. With growing pressure on the balance of payments in the early 1980s, the government, rather than devalue the currency, used import quotas as a rationing mechanism. To this effect, the Bank of Guatemala began in 1983 to publish lists of imports for which it would make foreign exchange available. In spite of these controls, the stress on the currency became so great that the government was eventually forced to adopt a multiple exchange rate system in late 1984. A parallel market for the Guatemalan quetzal was established which allowed it to float freely. At the same time, the official rate was maintained and an auction market was created as well. On the export side, foreign exchange rates were varied by product and product destination, with a complicated and frequently revised set of effective exchange rates. The devaluation of the currency led to a sharp jump in consumer prices, with the inflation rate jumping to 31.5 percent in 1985.

The economic crisis in Guatemala broke out at a time when the political situation was in deep turmoil. Unprecedented political violence and repression had broken out in the late 1970s in the west, north, and south of the country. The rural sector particularly was hurt during this time, due largely to the brutal fashion in which the military dealt with the guerrilla insurgencies. The state of siege in the countryside was accompanied by a deterioration in public services and investment in infrastructure. This deterioration continued even after the government was finally able to impose a relative calm throughout the country during 1983 to 1985.

This was the overall situation faced by the new government in early 1986. It quickly implemented a set of policy reforms aimed at stabilizing the economy and setting the stage for economic growth. This paper reviews some of those changes, focusing on what effects they might have on agricultural trade and production, as well as on the pace of rural development. The general perception in Guatemala is that growth in the agricultural sector is fundamental to economic progress and that, furthermore, the political stability of the country depends on the pace of rural development. With this in mind, we first look at the historical linkages between agricultural export expansion, economic growth, and development in order to draw some conclusions about the potential of the agricultural sector as a dynamic and propulsive force in the growth of the overall economy.

The current administration has placed emphasis on working with small and midsized farmers, encouraging crop diversification through the production of nontraditional crops for export. A particular focus of interest lies with the potential of the agricultural sector. Expansion of the agricultural sector would occur presumably through an expansion in production of horticultural crops for export. Expansion of exports of horticultural crops would increase export revenues, provide additional employment, and reduce the relative importance of individual commodities (particularly coffee, which provided about 60 percent of total export revenue in 1986).

Guatemala's chronic land and population pressures are aggravated further by the inadequate industrial development of recent years. In the two decades prior to 1980, Guatemala enjoyed steady and relatively rapid economic growth. Prices were favorable for the principal agricultural exports, while manufactured exports to the Central American Common Market (CACM) were significant and growing steadily. Flows of foreign investment and financing were adequate. Conservative fiscal and monetary policies contributed to small budget deficits, low inflation rates, and little foreign debt accumulation.

Despite general agreement on the overall importance of agricultural trade to the economic growth of the country, it is difficult to define the precise role trade has played in economic development as well as envision what policies should be followed to optimize its contribution. The process of expanding exports has never been accomplished without its costs on the structure and the people of the rural sector. These costs should be closely scrutinized, as Guatemala prepares to embark on another major push toward expanding agricultural exports.

Commercialization of Agriculture

The history of Guatemala's agricultural sector can be characterized as a series of struggles over two resources, land and labor. In the early years of colonization, large tracts of land called encomiendas were granted to the Spanish and Creole upper classes by the crown. Most of this land was located in the low-lying areas in the western and southern regions of the country, leaving the highlands to the indigenous populations. Often, however, an encomienda would encompass several indigenous villages, the inhabitants of which would be required to work the fields or mines for the landowner who in turn sent a portion of the surplus to the crown. When additional labor was required, many of those Indians not living on an encomienda were conscripted forcibly and required to provide labor to an assigned master. By the early 1700s, the majority of Indians in the country were within some system of direct labor exploitation (72).

By the turn of the century, with slavery becoming more repugnant to the Catholic church, a new system of labor exploitation based on a form of tax collection called mandamiento was put into place. Under this system, the crown provided special farming communities upon which the Indians raised the income for tax payments. Mandamiento served to introduce the indigenous population into the market system, as the need for cash to pay the taxes required greater involvement in the Spanish culture and economy (72).

The economy in the 18th century was dominated by the wealthy encomenderos, or latifundistas, who had begun to specialize in the production of agricultural commodities for export. The earliest agricultural exports were cacao, indigo, and cochineal (the latter two are dyes). The latifundistas sought to expand their landholding not only to increase production for export, but to displace the Indians in order to force them to become dependent on the latifundia for land and work. Neither independence from Spain in 1821, the emergence of an urban middle class, nor an increasing social complexity through mestizaje (intermingling of the races) dislodged the Creole landowning aristocracy from their dominant social and economic position nor the Indians from their position of servitude (73).

The decline in dye production and export in the early 19th century coincided with increases on the demand side in the international coffee market. By the mid-1800s, coffee was Guatemala's major export. The rapid expansion into coffee production for export accelerated the need for more land and labor. To produce coffee requires higher altitudes than dyes or cacao, which meant expansion into the hitherto uncontested lands of the lower highlands, the altiplano. This expansion contributed further to the decline of communally owned Indian lands and peasant smallholdings (73). Much of it was accomplished through changes in public policies that forced many Indians off their land and into labor on the coffee plantations. In 1879, a law aimed primarily at the Indian peasantry gave all proprietors of "rustic lands" 3 months to register land titles and present land claims, after which time they were considered idle or abandoned lands and, therefore, subject to repossession (75). As the large landowners of the south were increasing their holdings of land, many Indians were forced to move to the upper highlands, retiring to subsistence agriculture on marginal lands. Dislocated peasants frequently had no option but to seek employment on the coffee plantations. Nonetheless, coffee growers chronically complained of labor shortages. Sufficient labor presumably could

not be secured without some form of compulsion. Because of this, a series of laws was passed in the late 19th century which rationalized a system of debt labor. 72/ This system of government-aided labor procurement for the large landowners was once again strengthened with the passage of the Vagrancy Law of 1934, which shifted the basis of regulation of Indian labor from the obligation of the laborer to work off debt to a requirement to work whether in debt or not (79). This would be the last of such laws, however, since the worldwide economic depression of the 1930s and subsequent disruptions of international trade eased the demand for labor. By the end of World War II, shortages of labor were no longer an issue, replaced instead by the increasing pressures on available land.

The growing importance of coffee increasingly subjected the economy to the effects of world market price swings. Low prices for coffee in the late 19th century led to the first of many subsequent government efforts to encourage export diversification, a largely unsuccessful attempt except for bananas. In 1906, the United Fruit Company began operations in the country. By 1925, it controlled over 1.8 million acres and by 1936 about 3.6 million, most of which were held as reserves (86). By 1944, 90 percent of Guatemala's arable land was in use for the production of coffee or bananas (76). While some small landowners also developed coffee and banana crops, a minority of landowners controlled a majority of production, and by extension, the Guatemalan economy itself. 73/

Stagnant world demand for both coffee and bananas during the Depression and World War II gave renewed urgency to the search for new export crops. The availability, after the war, of pesticides and small crop-dusting airplanes provided the opportunity. The Pacific Coastal Plain, which was very fertile, had been largely inhospitable to intensive export cropping due to insect infestation. The use of pesticides, along with an increase in world demand and prices, led to the rapid expansion of cotton and sugar cultivation in the late 1940s and the 1950s. By 1962, cotton had replaced bananas as Guatemala's second leading export. Although the Pacific lowlands had been relatively underused up to this point, with the land devoted mostly to livestock haciendas, the area had been important as a frontier, absorbing excess population from the rapidly overcrowding highlands. The peasants who settled there often were displaced from the cotton and sugar expansions, suffering the same fate as those of the altiplano a half century earlier.

With the rapid expansion of land devoted to export crops after World War II, the need for agricultural laborers again began to escalate. Unlike during the previous periods of expansion into coffee and bananas, however, a sufficient labor supply now existed due to the deterioration in living standards in the western highlands from a declining land/person ratio, soil exhaustion and erosion from overuse, and because of few opportunities for migration to new lands (75). A pattern of seasonal migration by the highland Indians had been setup in the late 1800s to perform the necessary labor on the large plantations in the altiplano. Growing in numbers after the war, these seasonal streams of workers are now widespread. It is estimated that by 1975 some 60 percent of the economically active population of the highlands migrated to work on the plantations, creating world's largest migratory labor stream

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72/ Mandamiento was never completely stopped and in 1884 was legalized through a series of vagrancy laws. Under these rules, librettos had to be carried by all Indians to record days spent on plantations. If the minimum amount of 150 days was not fulfilled, the worker would be forced to pay a tax or do civic duty 40 days a year on government road building or military service (72).

73/ It is quite likely that Guatemala would never have become a large coffee exporter without a large concentration of production. Coffee is a crop with high start-up costs. Besides needing fairly extensive land to merit an export crop, coffee trees need 5 years to bud.

as a percentage of total population (83). The latest estimates are that over 600,000 peasants take place in this seasonal migration (75).

The key explanation for this migratory pattern lies in the availability and distribution of land. Like many developing countries, Guatemala is afflicted with an intensifying pressure on the land base, aggravated by a population growth rate of almost 3 percent, among the highest in the world. Over 80 percent of the total land surface of 10.8 million hectares is in hillside and/or highland areas. Despite the ruggedness of the terrain, about 60 percent of the land area is dedicated fully or partially to farming and/or grazing. Annual and permanent crops occupy about 12 percent, a mixture of crops and pasture or crops and forest occupy an additional 23 percent, while 25 percent is dedicated to natural and improved pasture and open forest. The remaining land is largely composed of undisturbed, ecologically fragile forest located in the northern part of the country (95).

Guatemala's farm structure is highly skewed toward small farms. A comparison of data from Guatemala's three agricultural censuses in table 29 indicates that in 1979 about 54 percent of all farms consisted of plots of 1.4 hectares or less. This is generally considered too small to generate enough subsistence and cash onfarm income for the basic needs of a rural family (five or more people), without resorting to off-farm employment, usually as part of the migrant stream working on the Pacific Coast plantations (95). Within this

Table 29--Land distribution in Guatemala

Farm size	Percentage of farms			Percentage of area		
	1950	1964	1979	1950	1964	1979
	Percent					
Less than 0.7 ha.	21.3	20.4	31.4	0.8	0.9	1.3
0.7 to 1.4 ha.	26.3	23.6	22.8	2.5	2.8	2.8
1.4 to 7.0 ha.	40.8	43.4	33.9	11.0	15.1	12.2
7.0 to 44.8 ha.	9.4	10.5	9.3	13.5	18.8	18.7
44.8 ha and more	2.2	2.1	2.6	72.2	62.4	65.0

Source: (95).

category, it can also be seen that the smallest holdings (less than 0.7 hectare) have increased 10 percent over the three decades, comprising 31 percent of all farms in 1979. Indications are that this category has probably continued to grow since the last census, with an estimated three-fifths of all farms now containing less than 1.4 hectares (94). These farms occupy only 4 percent of the total farm area. They are usually of moderate fertility, use low-level technology predominantly at the subsistence level, and have insufficient access to technical assistance and credit. In contrast, farms of over 44 hectares comprise 2 percent of the total number but occupy two-thirds of the land.

The smallest farms are concentrated in the predominantly indigenous western highlands and in the east and are generally devoted to corn, beans, and wheat, while the largest are on the Pacific coastal plain, the northern lowlands, and the Peten where most of the export production and commercial livestock operations are located. The degree of land shortage and fragmentation is especially evident in the indigenous western highlands. Over 65 percent of

the farms under 0.7 hectares and over 50 percent of those between 0.7 and 7 hectares are located in this region.

The land tenure system in Guatemala is currently the most extreme in Latin America, with only pre-reform Peru (1961) and Colombia (1964) experiencing higher levels of concentration (95). The increasing concentration of land in larger holdings combined with a rapid population growth rate has led to a declining land/person ratio and a growing landless population. The land/person ratio dropped from 1.82 hectares in 1964 to 1.52 in 1973 and 1.11 in 1982. If the land-poor highland Indians and landless peasants are counted together, their combined numbers amount to over half of the country's population. These groups do not share in the wealth generated by the Guatemalan economy. For many, the situation has become one of a daily struggle for survival. The manner in which the government deals with the twin problems of landlessness and unemployment will have a serious bearing on the course of events in the country.

Current Pattern of Agricultural Production

The Guatemalan agricultural sector is commonly divided into four distinct subsectors (table 30). In terms of the contribution of each subsector to total agricultural GDP, the overall shares changed only modestly between 1970 and 1985. The traditional export commodities (coffee, cotton, bananas, sugar, and cardamom) continue to account for the largest share of agricultural GDP. Coffee continues to be the mainstay of the Guatemalan agricultural economy, accounting for almost one-fifth of GDP. More important, coffee provided about US$500 million of foreign exchange earnings in 1986, or about 60 percent of the total. Since Guatemala is a subscriber to the International Coffee Organization (ICO), however, any significant expansion of coffee is inhibited by the size of the ICO export quotas to member nations.

Cotton, bananas, and sugar were roughly equal in terms of importance to the agricultural GDP in 1985. Of these, cotton has experienced notable drops since 1979. Prospects for cotton in Guatemala are dismal and speculation is that future levels of production will be tied strictly to domestic consumption. Sugar has managed to hold its share of agricultural GDP during this period, although sugar exports have been affected seriously by the reduction of import quotas allowed by the United States. Only bananas show any real prospects for expansion among the traditional exports. Use of improved technology could increase yields, and the major exporters believe banana production could be re-established on the Pacific Coast where the United Fruit Company abandoned its operations in 1964 (95).

In recent years, Guatemala has become the world's largest producer and exporter of cardamom, with exports valued at US$100 million in 1984. Favorable prices for cardamom in the late 1970s and early 1980s have induced a number of other countries to expand production for export. The result has been a world glut during the last 3 years and downward pressure on prices. As a result, export value fell to US$44 million in 1986. Until this situation causes a shake out of the more inefficient producers, prospects are not bright for cardamom.

The overall importance of the basic food crops subsector in agricultural GDP has varied in importance with crop production for export markets. With a push in the 1970s for export crops, food crop production dropped from 14 percent in 1970 to 12 percent in 1975 to 8.5 percent in 1980. This is of some concern in a country where widespread malnutrition continues to exist. Since 1980, the share of food crops in the overall structure of production has steadily increased to 11 percent in 1985. Despite this increase, the indications are that the nutrition level of the population, especially that of the low-income groups, has

Table 30--Contributions to agricultural gross domestic product by subsector

Products	1970	1975	1976	1977	1978	1979
			Percent			
Traditional exports	34.8	38.1	37.5	38.4	37.5	38.1
Coffee	22.0	20.7	17.5	17.6	17.3	18.0
Cotton	6.0	8.4	8.5	10.3	10.8	11.2
Bananas	3.4	3.8	4.6	3.8	4.1	3.7
Sugar	2.7	4.3	6.0	5.6	4.3	3.7
Cardamom	.7	.9	.9	1.1	1.1	1.5
Basic food crops	13.9	12.5	11.1	10.0	10.9	10.6
Corn	7.4	6.5	5.7	5.1	5.7	5.8
Beans	5.2	4.3	4.1	3.6	3.8	3.4
Rice	.5	.8	.4	.4	.4	.5
Wheat	.8	.9	.9	.9	1.0	.9
Nontraditional exports	16.2	16.7	18.3	18.7	17.6	17.0
Vegetables	4.0	3.4	3.4	3.4	.4	3.4
Fruits	4.3	3.7	3.7	3.7	.6	3.7
Rubber	.5	.5	.6	.5	.6	.6
Sesame	.1	.1	.3	.2	.3	.3
Cocoa	*	.1	.1	.4	.3	.2
Others	7.3	8.9	10.3	10.5	9.4	8.8
Livestock	16.2	14.8	14.7	15.1	15.4	15.9

	1980	1981	1982	1983	1984	1985
			Percent			
Traditional exports	39.5	38.4	36.2	35.7	36.0	36.1
Coffee	18.4	18.6	18.8	19.1	19.7	18.8
Cotton	10.1	8.1	5.0	4.4	4.4	4.9
Bananas	4.8	4.8	5.1	3.8	3.8	4.6
Sugar	4.0	4.7	5.5	4.9	4.9	4.9
Cardamom	2.2	2.2	1.8	3.5	3.2	2.9
Basic food crops	8.5	9.2	10.5	10.2	11.2	11.1
Corn	5.7	5.9	6.6	6.3	7.1	6.9
Beans	1.5	2.0	2.5	2.4	2.6	2.9
Rice	.6	.5	.7	.7	.6	.6
Wheat	.7	.8	.7	.8	.9	.7
Nontraditional exports	18.5	19.1	19.5	19.5	18.9	19.0
Vegetables	4.0	4.1	4.3	4.5	4.5	4.7
Fruits	4.4	4.5	4.7	4.8	4.8	5.0
Rubber	.6	.7	.8	.8	.8	.8
Sesame	.2	.4	.2	.2	.3	.3
Cocoa	.1	*	*	.1	.2	*
Others	9.2	9.4	9.5	9.1	8.3	8.2
Livestock	15.6	15.4	15.6	15.9	16.0	16.0

* denotes less than 0.1. Source: (95).

deteriorated in recent years. The apparent availability of calories per person fell by 16 percent between 1981 and 1984, with only a slight recovery in 1985 (77).

Corn is the food staple of Guatemala, providing about 45 percent of the per capita daily calories of the population. Corn is produced in every region of the country, principally as a subsistence crop. Approximately 500,000 hectares are grown as a single crop and another 165,000 hectares are intercropped with beans, sorghum, or other crops. Area planted to corn declined in the early 1970s as cotton and sugarcane production expanded on the Pacific coastal plain. With the declining world markets for cotton in the early 1980s, corn plantings again increased in this region and corn is now the second most important crop in terms of national value of production.

According to the 1979 census, there were 320,000 corn producers with the national average size farm being 1.5 hectares. Over 88 percent of corn farms were under 7 hectares producing 50 percent of total output. The smaller holdings are concentrated in the highlands, where 32 percent of the total area is planted and 52 percent of the total farms are located. Malnutrition is most present in this area, caused by insufficient production of basic grains on parcels too small for adequate onfarm consumption, levels of income too low to purchase necessary foodstuffs, lack of foodstuffs available in the nearby market place, large family size, and inadequate biological ingestion of foods that are consumed (95). Most of the highland producers use very basic technology, resulting in low yields. The corn raised in this area preeminently remains a subsistence food crop. This makes the task of increasing corn production more difficult, because the farmers are less responsive to monetary incentives than in a commercial farm economy. At the same time, government assistance to these farmers becomes essential, for without it the mass of producers lack sources of capital, inputs, and know-how to improve their holdings.

Dry edible beans, an important protein source for the rural and urban poor, accounted for about 2.9 percent of the total value of production in 1985. Like corn, beans are produced in every region of Guatemala, but the biggest concentration of producers (31 percent) and area (46 percent) is in the east. In the east, there are 177,000 producers farming average sized lots of about 0.6 hectare, less than half the average for corn. Farms of less than 7 hectares account for 60 percent of production.

Wheat and rice historically have accounted for less than 1 percent of the country's value of production in agriculture. The average sized plots are about 0.6 hectares for wheat and 1.5 for rice. There are 45,000 wheat farmers, 99 percent of whom are located in the highlands. There are only 8,000 rice farmers, located primarily on the Pacific coastal plain and in the east. Available figures for wheat indicate 94 percent is produced on farms of under 7 hectares. Rice figures are unavailable, but it is believed that production has shifted from small- to medium-sized (7 to 40 hectares) operations, because of the latter's greater access to technology. Most rice in Guatemala is produced under dryland conditions. Production of both wheat and rice is insufficient to satisfy growing domestic demand, with about 70 percent of wheat consumption and over 25 percent of rice consumption being imported in 1986.

The nontraditional export crops have shown the largest increase in share of agricultural GDP since 1970. In recent years, these products' importance has rested in the fact that their export value has counterbalanced that of the traditional agricultural exports which are generally losing value on the world market. Heading the list of nontraditional export crops in terms of volume and total export value are vegetables, particularly broccoli, cauliflower, and snow peas for export in frozen or fresh form. Production of nontropical fruits, including apples and strawberries, for domestic and foreign markets has increased with improved technology. Tropical fruit exports continue to be limited by the quarantine against Mediterranean fruit fly hosts, thereby reducing the principal motivation to improve fruit

quality and increase production. Nursery items, principally cut flowers and ornamental plants, are a major subsector of the nontraditional category and are produced almost exclusively for export. Minor nontraditional products are honey, nuts, spices other than cardamom, and flowerseeds. Products being produced by larger farmers, for example cantaloupe or plantation fruits, are replacing traditional exports that have lost value, particularly cotton.

Livestock's participation in the overall structure of production has varied little over the past 15 years, fluctuating between 33 and 35 percent. Guatemala is a net exporter of meat, but a net importer of milk and milk products. Beef production has been declining in recent years due to declining real incomes and the increasing importance of poultry. According to the 1979 agricultural census, there were 117,596 cattle ranches in Guatemala, 109,580 (93 percent) of which were under 45 hectares. Although large in number, they collectively held only 31 percent of the nation's herd. Of the estimated 1.6 million dairy cows in 1979, 95 percent were listed as dual purpose for beef and milk. Production is insufficient to meet local demand, resulting in increasing imports of powdered milk and milk products. Pork production, all for local consumption, occurs primarily on small, very poor farms. Only about 10 percent of the swine herd is under commercial production for consumption in the cities and large towns. The commercial poultry meat production in Guatemala dates its origin to 1962. Because of its lower price relative to beef, poultry meat has been replacing beef in many Guatemala homes. Production has increased from 37,000 tons in 1984 to 40,000 in 1985 with 1986 production estimated at 44,000.

Agricultural and Trade Policy and the Links to Economic Growth and Development

The pattern that has evolved in Guatemalan agriculture over the last 100 years is that when world prices for export crops increased, the area devoted to their cultivation increased. When their prices decreased, public policy would rediscover the virtues of advocating diversification of exports and the inadequacy of production of domestic foodstuffs (75). With regard to the first objective, the result has been that over the years, first bananas, then cotton and sugar, have joined coffee as major exports. With respect to the second objective, production of the basic staples has grown only slowly over the past 10 years, not fast enough to keep pace with rapid population growth.

Agricultural commercialization in Guatemala through the expansion of agricultural exports was accomplished with a minimum of state intervention, at least in the form of public spending. More important than domestic agricultural and trade policies were the labor and land acquisition laws of the late 19th and early 20th centuries which forced peasants off their land and provided a cheap source of labor for the plantations expanding into export production. Overall, a strong private sector, market-orientation exists in the production and physical marketing of these commodities in Guatemala.

In recent years, government intervention in the traditional exports subsector has been primarily through instruments such as exchange rates and export taxes. With the decision to abandon its policy of a fixed exchange rate and align the currency with its real value, Guatemala removed a major distortion in its foreign exchange. An overvalued currency is effectively a tax on exports and a subsidy on imports. It is hard to say to what extent the overvalued quetzal stifled the Guatemalan export trade. Adams estimated that exchange rates in Central America as a whole were overvalued by 20-25 percent in the early 1980s (71). This, he concluded, amounted to a tax of US$600-US$800 million per year on agriculture. Coffee, cotton, and cardamom are subjected to export taxes which increase on a percentage basis as the f.o.b. value of the commodity increases. These taxes were scheduled to be phased out, but whether or not they are will probably depend on the government's ability to develop alternative sources of revenue. The fact that the tax level varies with the export price of

the product reflects the explicit intention of maintaining producer incentives to the extent possible.

In contrast to the traditional exports, the government plays a much stronger role in the basic foods subsector, imposing a bewilderingly wide array of policies. These include price regulation: setting price ceilings on consumer goods and inputs and minimum prices on output; regulating the import and export of basic foods and production inputs such as fertilizers, seeds, and pesticides; setting minimum wages for specific jobs; taxing idle lands and imposing regulations requiring basic grains cultivation on farms of certain sizes; and involvement in research and technical assistance. This is apart from monetary, fiscal, exchange rate, and credit policies that directly or indirectly affect the performance of the basic foods subsector.

The basic objective that appears to emerge is one of fixed or guaranteed minimum producer prices for some of the basic foods, backed by obligatory purchase of total production, some for subsidized distribution. External trade needs to be controlled to support domestic price objectives. While there appear to be no specific export incentives for agricultural commodities, new processing industries may obtain tax benefits, particularly export-oriented enterprises. In practice, however, many of the objectives the government attempts to pursue are not carried out due to limited resources. INDECA is the parastatal responsible for carrying out marketing and related functions of price stabilization and supply management, including purchase, storage, sales, import, and export operations. An examination of INDECA activities suggests that it has had little effectiveness over the years in stimulating basic grains production or stabilizing prices (95).

Most of the national plans produced by the current administration emphasize the rural sector as the key to economic recovery. The government appears to be convinced that the political stability of the country depends on the pace of rural development. A high priority has been placed on working with small and medium farmers and on creating employment opportunities in the rural sector. The government is aware that the traditional export commodities face a fairly bleak future on the world demand side. While each export commodity probably will continue to experience periods of peak demand and price, longrun prospects are not encouraging. Not surprisingly, the government policy response to deterioration in the agricultural export sector is to stimulate diversification, encouraging a much broader mix of agricultural commodities that would be readily received in foreign markets.

While not yet significant in terms of total area, already much has been written about the great potential associated with diversifying into nontraditional crops for export. References are made to the good soil and climatic conditions for the production of fruits and vegetables, the proximity to the U.S. market, and the hardworking and inexpensive labor available. Guatemala has the capability to become the leading supplier of U.S. nontraditional products from the region if sufficient U.S. interest and investment is forthcoming (97).

The Caribbean Basin Initiative (CBI), enacted by the Reagan administration in January 1984, seeks to promote economic and political stability by making foreign and domestic investment in the Caribbean and Central American nations more attractive and economic diversification and export expansion possible. The CBI is a 12-year program that allows duty-free access to the U.S. market to 22 beneficiary Central American and Caribbean countries. Duty-free treatment, in effect through 1995, applies to all products except textiles and apparel, leather goods and footwear, petroleum and petroleum products, processed tuna, and watches and watch parts.

The CBI countries have not been large suppliers of horticultural products to the United States, except for fresh bananas and plantains, which accounted for 70 percent of the US$574.3 million of U.S. horticultural imports coming from these countries in 1986. The CBI countries

have, however, increased their share of total U.S. horticultural imports (excluding bananas and plantains) slightly from 2.2 percent in 1983 to 2.9 percent in 1986. This percentage is still relatively minor since Canada and Mexico continue to dominate the U.S. market. Among CBI countries, Guatemala continues to run third in exports of horticultural products to the United States (table 31). Almost one-third of the value of Guatemalan horticultural exports to the United States would have been dutiable but came in duty free under CBI provisions.

Table 31--U.S. imports of horticultural products from Dominican Republic, Costa Rica, and Guatemala 1/

Country	1983 2/	1984	1985	1986
			1,000 US$	
Dominican Republic	34,046	42,503	43,125	46,208
Dutiable	11,707	14,215	15,814	18,905
Nondutiable	22,339	28,288	27,311	27,303
Costa Rica	12,526	17,768	19,692	31,116
Dutiable	5,797	8,132	9,286	17,217
Nondutiable	6,729	9,636	10,406	13,899
Guatemala	14,058	19,142	20,617	26,929
Dutiable	1,576	3,413	4,031	7,728
Nondutiable	12,482	15,729	16,586	19,201
Total 3/	4,161,000	5,121,000	5,665,000	5,867,000

1/ Figures exclude bananas and plantains.
2/ Imports prior to enactment of the Caribbean Basin Initiative.
3/ Total includes ferments and alcoholic beverages.

Source: (96).

Although diversification is a high priority of the Guatemalan government, an overall strategy to accomplish this goal has not yet been enacted. The closest thing to a national plan to promote the export of nontraditional crops is a document prepared, not by the government, but by a private sector trade committee called the Non-Traditional Products Exporters Guild. The guild was founded to protect the interests of the exporting sector, encourage the establishment of fiscal incentives to promote production, and facilitate exports of Guatemalan products to international markets. Perhaps most important, the guild provides nontraditional exporters an effective lobbying group in the public sector. Since the initiation of the CBI, many small and medium exporting companies, belonging to the guild, have been established to deal with fresh and frozen produce. From the guild's perspective, the size of the U.S. market appears to be boundless, with continued growth resting largely on Guatemala's capacity to increase production and compete.

One of the key impacts, thus far, of the expansion into nontraditional products has been a shift from subsistence crops (crops and beans) to fruits and vegetables, thereby providing diversified farmers with higher income, greater value of production, and increased onfarm, productive employment. Nontraditional crop production also has provided the Pacific coastal plain with an alternative to cotton production since about 1,000 hectares of former cotton

land is used in fruit and vegetable production. Most of the land formerly used for cotton production was used for the production of corn, sorghum, and soybeans, crops with much lower labor requirements than cotton. This was not true for the land converted to fruits and vegetables, which are even more labor intensive than cotton.

Another of the interesting features of the current export expansion into nontraditional crops is that it involves many small farmers in the indigenous highlands with no previous commercial experience. According to USAID, the bulk of cold-climate vegetables and nontropical fruit produced in Guatemala comes from small, intensively farmed properties. The extent to which such production is concentrated on farms of less than 7 hectares varies from 93 percent of total production of broad beans (haba) to 58 percent of total lettuce production (95). In many cases, these producers previously farmed their extremely small parcels of land using traditional practices and little external capital. A high percentage of their output was for onfarm consumption. With organizational support and seed money from USAID and other international agencies, a growing number of small farmers have been able to acquire yield-enhancing inputs and commercialize a portion of their production through national companies or cooperatives. The higher value of fruits and vegetables in relation to corn or beans has allowed these farmers to purchase other basic necessities.

Clearly, one of the great attractions of diversification into nontraditional exports is the potential for extending the benefits of increased trade to the poor populations and neglected sectors of the Guatemalan economy. In the past, export expansion in Guatemala, though linked to economic growth, has not been directly linked to economic well-being, especially among the 40-60 percent of the population seriously deprived of employment, adequate food, and most of the other basic amenities of life. Guatemala enjoyed extraordinary growth throughout the 1960s and early 1970s largely due to the stimulus provided by increased trade of agricultural commodities and increased manufactured exports to the Central American Common Market (CACM). The CACM, formed in 1960 as an answer to the 1959 overthrow of Cuba's Batista, sought to increase production so that wealth might "trickle down" to the poor, thus undercutting the appeal of leftist revolutionary ideology (73). The CACM's goals converged with those of the U.S. Alliance for Progress (formed in 1961), which greatly increased public development aid to Guatemala and encouraged foreign private investment. The surge in foreign aid and investment was concentrated in industries geared toward the manufacture of consumer goods destined for the CACM. The result was impressive performance in GDP, which grew annually at a rate of 6.1 percent between 1960 and 1976. Unfortunately this growth was not large enough nor sustained sufficiently to absorb the rapidly increasing labor supply. In addition, the inflow of foreign capital to develop the manufacturing export sector led to a tendency to neglect the traditional subsistence sector. An overvalued currency, combined with high levels of protection for the manufacturing sector, provided within the CACM, shifted the terms of trade against agriculture, and made it an unprofitable sector for investment. With mounting political problems throughout the region and the worldwide recession, the CACM went into a tailspin and with it, the Guatemalan economy.

Conclusions

The agricultural economy continues to be beset with considerable difficulties in the traditional commercial export subsector and the domestic subsistence subsector. Guatemala's agricultural and trade policies continue to be influenced strongly by the need to stabilize the national economy. While maintaining a balance in the fiscal budget is desirable, the administration is aware that public expenditures for some purposes must increase. Any analysis of policies that emphasizes agricultural export expansion as the engine of growth in the Guatemalan economy will lead ultimately to investigations of "lack" --lack of access to credit, lack of technological

base, lack of organization, lack of infrastructure. In the agricultural sector, greater productive investment is needed in areas such as transportation infrastructure, and in research, technical assistance, and education. While there is an opportunity to finance such outlays from improving the collection of already-legislated taxes or from imposing new taxes, rather than incurring fiscal deficits, there is always strong resistance to taxes in Guatemala. Nevertheless, the legitimate functions of government must be carried out, particularly where they have suffered from neglect for many years.

CONCLUSIONS

The preceding analyses of agricultural policies and trade have revealed substantial differences in the agriculture sectors of the six countries. These differences are due to a wide range of factors that include income levels, history, factor endowments, and level of development. Compounding the differences between agricultural sectors have been the policies applied to each sector. These policies have ranged from one of allowing market forces to dictate the pattern of agricultural growth (Guatemala) to one of benign neglect and disadvantage due to exchange rate appreciation (Ecuador) to one of extensive government control through the design and implementation of an estate-biased strategy (Malawi). Despite these differences, common themes emerge: 1) the role of agricultural exports and imports in the development strategy, 2) the problems associated with the transformation of agriculture, 3) concern over food security, 4) the influence of colonial agricultural policy, and 5) the nature of relations between large- and small-scale agriculture.

Role of Agricultural Trade in the Development Strategy

In every country, the agricultural sector has played an important role in the growth strategy. Although the agriculture sector is less important in those countries that have other resources to draw on, such as a manufacturing sector, agriculture typically is expected to make a contribution to economic growth. In Ecuador, where oil has provided significant export earnings, the agricultural sector continues to be an important source of employment and foreign exchange. The importance of agricultural trade rests largely with exports and employment. Although agricultural imports can be important to the growth and/or development process, their contribution is more limited than is the role of exports. The importance of agricultural exports relative to imports in the growth process is due to the fact that exports, especially among poorer countries, are a means of directly increasing income. The contribution of agricultural exports to development, as distinct from simple income growth, depends on the sources of production. The impact of exports on development is greater when production is from the smallholder sector (Kenya and Malaysia) in contrast to the development consequences if export production is concentrated in the estate sector (Malawi and Guatemala). The generally beneficial results of involving smallholders in production for export, however, can be undermined by pricing policy (coffee and cocoa in Ecuador) and/or a lack of infrastructural support for smallholders.

The policymakers' view of the role that agricultural exports should play in a broader development strategy depends on the nature of that strategy. In each of the countries studied, agricultural exports figured prominently in the development strategy, but for different reasons. Some of the more outward-oriented economies (Malawi, Thailand, and Guatemala) use export agriculture as a primary source of growth and foreign exchange, and take advantage of agriculture's linkages to other sectors. In Malawi, smallholder agriculture has been taxed to support a large-scale agricultural sector that is export-oriented. In Thailand, the agricultural sector, as a whole, has been taxed to support the establishment of a light manufacturing sector and the expansion of a commercial agricultural sector oriented toward export markets. In these countries, the role of commercial agriculture featuring primary crop production depends on the level of development, with commercial agriculture having the greatest impact in the early stages of growth. In contrast, countries with a more inward-oriented strategy

are more prone to using agricultural exports as a complement to a strategy for developing an import substituting manufacturing sector. 74/

Income growth from exports tends to be subordinated in an import substituting approach. Malawi, Thailand, Malaysia, and Guatemala are classified as outward-oriented economies, while Kenya and Ecuador tend to be regarded as inward-oriented. Although Kenya has pursued a strategy designed to promote domestic industry, it has effectively maintained and encouraged a viable agricultural export sector. In Ecuador, the agricultural export sector, relying on bananas, cocoa, and coffee, has been alternately supported and ignored, but has always been a valuable source of foreign exchange.

This distinction between inward- and outward-oriented agricultural strategies should not, however, be too heavily stressed. There is a tendency among the countries studied to use exports of primary crops to finance the expansion of other higher valued added sectors such as manufacturing and/or agricultural processing. Further, for some countries, the distinction between inward and outward agricultural strategies is blurred since they simultaneously pursue policies that are characteristic of both approaches. For example, Kenya is ostensibly inward-oriented for the following reasons: 1) it has protected domestic industry against foreign competition, 2) it has vigorously promoted agricultural exports, and 3) it has not heavily taxed export agriculture. Malaysia, on the other hand, has been outward-oriented and has heavily taxed agriculture to expand its manufacturing sector.

While agricultural exports are most important in the growth and development process, agricultural import policies can be important too. As would be expected, restrictions on agricultural imports are more likely to be applied by the inward-oriented countries in order to allow for the development of import substituting industries. More generally, however, import restrictions are applied to food imports in order to protect domestic producers and to ensure some degree of food self-sufficiency. This seems to be the case regardless of the country's overall inward versus outward orientation as evidenced by Ecuador's protection of its corn producers to promote food self-sufficiency. As a result of the prohibition on corn imports, consumers pay a substantially higher price for livestock products, especially poultry. By one estimate, the price of poultry could be reduced by 50 percent if the restrictions on corn imports were removed. In Malawi, Kenya, and Guatemala, imports of staple foods require the permission of the government. Policy interventions on imports do not always have such a detrimental effect on consumers. In Ecuador, the subsidy given to wheat imports has caused consumption to increase. Although this is a distortion of the normal consumption pattern and is expensive, Ecuador's wheat import policy is credited with contributing to an improvement in nutritional levels and is seen as one of the few benefits accruing to the poor as result of the oil wealth. In Malaysia, the government uses food import policy to complement food security and development objectives. In Thailand, when rice prices are low, the government will decrease the amount of rice grown domestically and increase imports. Malaysia's protection of its rice industry is essential since it is a high cost producer. To permit an open import policy for rice would seriously undermine domestic rice production which is a cornerstone of the country's development strategy.

74/Although much of the analysis of agricultural trade strategies is in terms of inward-versus outward-oriented strategies, it is not necessarily the case that the two are mutually exclusive.

Problems Associated with the Transformation of Agriculture

One of the difficult challenges facing the agricultural sector in developing countries is the transformation of subsistence agriculture: achieving greater commercialization and productivity of smallholder agriculture. For those countries with comparatively few subsistence producers and high levels of labor productivity such as Malaysia, the issue centers on how to increase the value added of labor on small landholdings. In Malaysia, the country with the highest per capita income, there are comparatively few subsistence producers and smallholder labor productivity compares favorably with that found on the estates. In Thailand, the growth of agricultural output from its large subsistence sector has been achieved through extensification. Now that land resources are constrained in Thailand, growth in agricultural output will be based on increases in agricultural productivity. In the remaining four countries, the percentage of subsistence smallholders is larger, and, therefore, the issue is one of increasing labor productivity while the shortrun policy prescription is still increased output and market participation.

One of the risks frequently associated with an outward-oriented strategy for agriculture is that the commercial opportunities created by exports will result in pressure to alienate smallholders' land rights. Large-scale agriculture will typical have greater access to commercial export opportunities by virtue of preferential access to inputs, most notably credit and markets. In some countries, governments such as Malawi's direct export opportunities toward large-scale agricultural firms in the belief that scale is positively correlated with efficiency. In Malaysia, however, the government assists in the development of smallholder schemes and facilitates the marketing of smallholder oil palm and rubber for the international market. In Guatemala, the government's free market policy toward agriculture has allowed large-scale private farmers to dominate agricultural exports, and permitted the alienation of traditional land for the creation of new estates. As a result, Guatemala has the most skewed patterns of land distribution of any country in Latin America. The consequences of such policies for smallholders' income and development level are predictably dire; both Malawi and Guatemala rank comparatively low in the provision of basic needs. Whereas, in Kenya and Malaysia, the export orientation of agriculture has been accompanied by a focus on smallholder agriculture as part of the overall development strategy, which has led to a relatively high-level provision of basic needs.

In the context of the transformation of smallholder agriculture, it is interesting to examine the propensity of the countries in the sample to advocate policies of food self-sufficiency. Every country in the sample advocates and attempts to implement some degree of food self-sufficiency. With the exception of Kenya, every country studied relegates most food production to the smallholder sector. Although this division reflects, in part, the colonial legacy inherited by many countries, it also reflects the uncertainty over the viability of export strategies versus import substitution policies. Abandoning food self-sufficiency means gambling that exports will generate enough foreign exchange to purchase necessary food supplies. This requires that domestic agriculture be successfully transformed from subsistence production to export production, and assumes a certain measure of stability in international commodity markets. In Malawi, smallholder agriculture was perceived as unable to produce an exportable surplus reliably over time. In Kenya, however, if such reservations existed in the government, they do not appear to have influenced policy toward smallholder agriculture. It is understandable why domestic policymakers in the countries studied were, and continue to be, hesitant to make these assumptions. The experience with the move from subsistence to commercial agricultural production has been, at best, mixed, and given the vulnerability of primary commodity producers to fluctuations in the terms of trade, policymakers are acutely aware of the political costs they could face if a food shortage develops.

Food Security

The point that emerges from this study with regard to food security is that although it is an expensive policy to pursue, there are usually compelling political and economic reasons for doing so. The cost of a food self-sufficiency policy lies in the opportunity cost of the land and labor that is devoted to producing food rather than higher value commodities, and the explicit costs of implementing the policies; for example, subsidies to producers. At least two factors lead governments to adopt a food self-sufficiency policy for meeting some share of domestic food needs. First, there is the uncertainty of relying on international markets for food needs. As noted above, sustained food imports presume the successful transformation of subsistence producers, stable agricultural export markets, and reliable sources of food imports. Second, the political consequences of not meeting food needs are high, witnessed by food shortages and food pricing policies precipitating many violent changes of government in Africa. Although food self-sufficiency policies may violate efficiency norms of the neoclassical trade model and are usually the more expensive option in the longrun, in the shortrun they are less uncertain than relying on international markets. For policymakers with shortrun planning horizons, food self-sufficiency can be a rational policy choice.

The Influence of Colonial Agricultural Policy

One of the most impressive features of the cross-country comparison of agricultural trade policy in the six countries is the importance of colonial agricultural policy in shaping the structure of agriculture after independence. The most obvious way that colonial agricultural policy influenced contemporary policy was by institutionalizing relations between large- and small-scale agriculture. The establishment of large-scale farms created an attractive vehicle for governments for meeting a range of goals. At independence, the new governments were neither able nor inclined to abolish the large farm sector. Kenya subdivided some of the estates, but ensured the continued existence of the estate sector.

The impact of colonial agricultural policy on contemporary agricultural policy is a function of the time since the end of the colonial period and the degree of land scarcity. The three countries most recently under colonial rule were all British colonies: Malaysia, Malawi, and Kenya. In each of these countries, colonial agricultural policy encouraged the creation of a large farm agricultural sector as a device for extracting a surplus from the colony. In Malaysia, cash cropping for exports was forbidden to the Malay population since the small farm sector, where most of the Malay population resided, was restricted to food production. A similar pattern was in evidence in both Malawi and Kenya: large farm agriculture was to generate an exportable surplus, usually through the use of cheap labor policies, while peasant agriculture was to produce food. Although these policies were modified toward the end of the colonial period, large farm agriculture still figured prominently in each of the three countries at independence. In all three countries, estate agriculture has figured prominently in the post independence development strategies. Kenya has most effectively mitigated the effects of policies in the colonial era through an aggressive land reform program implemented immediately after independence.

The impact of colonial policies on contemporary agricultural policy in Guatemala and Ecuador is less direct simply because the colonial period ended so long ago. Nonetheless, the colonial influence is evident in the structure of agriculture in Ecuador where the large farm sector dominated agriculture in the Sierra for many years. Even the ambitious land reform of the 1960s and 1970s failed to substantially alter the distribution of land and power. It was only the outlet of having land available in the coastal region that mitigated the land pressure issue in the Sierra. In Guatemala, colonial agricultural policy is relatively unimportant to contemporary policy because land scarcity was not an issue during the colonial period and

colonial land tenure patterns did not determine the current structure of agriculture. In Malaysia, colonial policy was important not because of land scarcity, but because of the institutions that colonialism developed. It is only Thailand, which was not a colony, where the conflict between large- and small-scale agriculture was based on agronomic endowments. In most fertile areas, large-scale agriculture flourished, infrastructural investment was the greatest, and commercial agriculture developed. Small-scale agriculture expanded through extensification of subsistence crops on poorer land. Therefore, competition evolved between large and small farms based on the growing disparity in income and acquisition of investment resources.

Conflicts Between Large- and Small-Scale Agriculture

Serious conflicts exist in five countries between large- and small-scale agriculture and stem in part from the residual effects of colonial agricultural policy (Malaysia, Kenya, and Malawi), but can also be attributed to explicit efforts by governments to foster estate agriculture at the expense of smallholder interests (Malawi), or by allowing market forces to dictate the structure of agriculture (Ecuador and Guatemala). The two most obvious sources of conflict between large- and small-scale agriculture are access to land and the availability of other inputs such as credit.

Land availability is obviously important to peasant producers. In Guatemala, Malawi, Kenya, and Ecuador, land is so scarce that estates exacerbate the land shortage experienced by peasants. Therefore, even though agricultural production and exports may be increasing, the landless population is not benefiting from the economic growth. In Guatemala, land alienation has contributed to political violence. The potential for such violence in the other land scarce countries is significant. Land pressure may well be the most pressing problem policymakers face in these countries.

Attempts to address the problem of land scarcity through land reform highlight the other area of conflict between large- and small-scale agriculture: competition for inputs. Although land reform is essential for further development (any development in the case of Guatemala), it should not be seen as an end in itself. For the countries studied, a land reform will relieve land pressure, but will not eliminate the problem. 75/ For example, in Guatemala there simply is not enough land for all of those who wish to be farmers. In Malawi and Kenya, a redistribution of estate land would temporarily alleviate land pressure but population growth is so rapid that the pressure would quickly be restored.

Even when land is available to smallholders, there are the well known problems associated with increasing smallholder productivity. The solutions to many of these problems are complicated by the rivalry between large- and small-scale farms. Competition is frequently biased in favor of the estates by policy decisions; but, small-scale producers suffer even when unfettered market forces are permitted to operate. In Malawi and Ecuador, commercial banks prefer to lend to large-scale farmers because of their lower costs and risks. In Guatemala, banks have a policy of not making any loans to smallholder agriculture. In Malawi, estates are allowed to sell directly at international auctions, while agricultural smallholders must sell through a marketing board. In contrast, policy in Malaysia is for a parastatal to direct the international marketing of export crops for the smallholders in an attempt to equalize access to world markets. In Ecuador, large-scale producers of a crop such as bananas export directly, while small-scale producers of export crops such as coffee and cocoa sell to

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75/Malaysia has the opposite problem. The government has provided the technical assistance to the smallholder, subsidized inputs, research support, and marketing infrastructure, but has not addressed the issue of the skewed distribution of land.

intermediaries or exporters. The terms that accompany the latter transaction are usu highly unfavorable for the producer and are characterized by high implicit interest payments in barter.

The experience of Ecuador also illustrates the problem that land reform can enco is influenced by the interests of large farmers. The land reform undertaken in] to provide crucial support to the newly landed smallholders in the following areas. agricultural decisionmaking in a market environment, credit facilities, and extension and education. On the basis of this experience, it is clear that to make the smallholder sector viable, especially after meaningful land reform, it is necessary to support the sector with inputs and a system of market incentives. A successful land reform requires considerable technical and financial support beyond the mere redistribution of land.

Contribution of Agricultural Policy to Growth and Development

Agricultural trade can be an influential factor in shaping the pattern and extent of economic growth and development. Agricultural export policy is a far more influential factor in determining the extent and nature of growth than is agricultural import policy. Although agricultural export policies in the six countries studied have generally aided growth, with the possible exception of Ecuador, their impact on development measures has been more ambiguous. In at least three of the countries (Malawi, Ecuador, and Guatemala), the trade-oriented components of the growth strategy did not lead to broad-based benefits. The benefits of agricultural exports were concentrated among owners of large-scale agriculture rather than among smallholders. Channeling the benefits of increased agricultural exports to smallholders is even more problematic when a large portion of smallholders is comprised of subsistence producers. As with export policy, the effect of import policy on development objectives depends on how the benefits are distributed.

The central point remains: without a broad base of smallholder beneficiaries, a trade-oriented strategy will foster growth, but not extensive development since the transfer effects of an outward-oriented agricultural development strategy are relatively small.

Although it is possible to identify common themes in the treatment of agricultural policy in the six countries, there is also a lesson to be learned from an important difference among the countries: production that concentrates on primary agricultural products, especially cereals, can impose serious limits to growth. Specifically, both Malaysia and Thailand have concentrated on the export of primary agricultural commodities (oil palm and rice, respectively) and have invested heavily in a production infrastructure for these commodities. Although these commodities provided the basis for considerable growth, a combination of demand and supply constraints seriously limits their potential for sustaining growth. On the supply side, there are the inevitable technical constraints to increased productivity. Further, as labor costs rise due to increased domestic demand for labor, a country's competitiveness in many of the labor intensive primary commodities can be eroded. On the demand side, there are limits to the amount of these commodities that the international market can absorb, especially in light of increasing protectionism in the European Community and the United States, and the move toward increased food self-sufficiency in many developing countries.

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APPENDIX A--ECONOMIC GROWTH, DEVELOPMENT, AND AGRICULTURAL TRADE

To compare the economies of the six countries being considered, we analyzed four dimensions of their economic profiles: 1) trends in real per capita income, real exchange rates, and changes in selected basic needs measures; 2) the composition of GDP and the relative importance of agriculture in each economy; 3) the contribution of agriculture and agricultural trade to the level and growth of GDP; and 4) agricultural trade patterns. 1/

Trends in Per Capita Income and Basic Needs Measures

Data on per capita income levels between 1970 and 1984 for each of the countries are presented in local currency units and US$ in appendix table 1. Although comparison of U.S. dollar-denominated income levels across countries is difficult for a single year, such comparisons are even more tenuous over time due to exchange rate fluctuations. Therefore, cross-country comparison of per capita income is based on growth rates (app. table 2), with point estimates provided for reference only. The per capita income levels of the six countries differ widely, with approximately a tenfold difference between the poorest and the richest countries. In 1984, per capita incomes in US$ were: Malawi, 180; Kenya, 310; Thailand, 860; Ecuador, 1,150; Guatemala, 1,160; and Malaysia, 1,980. 2/

An analysis of growth trends for any macroeconomic variable is best conducted over several years to minimize the influence of random fluctuations on the data. Where data permit, macroeconomic trends were computed for three 5-year periods: 1970-74, 1975-79, and 1980-84. 3/ The data in appendix table 2 show that trends in real per capita income vary considerably among countries as well as over time. Based on a simple average for the three periods, Malaysia had the highest annual growth rate (4.78 percent) of real per capita income, followed by Thailand (4.16 percent). Ecuador is the only other country with average annual income growth in excess of 4 percent. Ecuador's growth performance, however, is somewhat misleading since it is based largely on the increased value of oil exports.

During 1970-74, all six countries displayed strong growth, and Ecuador, Kenya, and Malaysia had annual growth rates of real income per capita greater than 5 percent. During 1975-79, growth of per capita income declined in all countries except Thailand. In the third period, 1980-84, the effects of the world recession are seen most clearly in Ecuador, Guatemala, Kenya, and Malawi where real per capita income growth rates were negative. In Malaysia and Thailand, per capita income growth declined, but remained positive. Not surprisingly, the real per capita value of consumption and investment tended to parallel income trends (see app. table 2). The per capita income growth rates of the 1970s resulted in a strong expansion of per capita consumption in each of the countries, with the exception of Kenya. In the most

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1/ Data on trends in income distribution would ideally be included in this section; however, data on changes in income distribution in developing countries are notoriously unreliable. Since conclusions about distributional trends are frequently based on changes in economic structure and are, therefore, inferential, it is more appropriate to analyze the issue in the context of each country.

2/ In addition to including two countries from each of three geographical regions, the country sample includes countries from each of the lowest three income groups as defined by the World Bank (36). Malawi and Kenya are from the low-income group (less than US$400 per capita income), Thailand, Guatemala, and Ecuador are in the lower middle-income group (US$400-US$1,650), while Malaysia falls into the upper middle-income group (US$1,650-US$7,500).

3/ Although the use of uniform time periods across countries may do some injustice to the sequences of events in each of the countries, it greatly facilitates cross-country comparisons.

Appendix table 1--Real gross domestic product per capita

Year	Ecuador		Guatemala		Kenya	
	Sucres	US$	Quetzales	US$	Shillings	US$
	1980 currency units					
1970	21,328	1,020	866	866	2,588	362
1971	22,094	884	891	891	2,640	370
1972	24,602	984	929	929	3,107	435
1973	29,964	1,199	965	965	3,184	455
1974	31,123	1,245	999	999	3,112	436
1975	39,022	1,281	991	991	2,905	396
1976	34,106	1,364	1,035	1,035	2,890	345
1977	35,394	1,416	1,086	1,086	3,044	368
1978	36,768	1,471	1,108	1,108	3,125	404
1979	37,758	1,510	1,129	1,129	3,133	419
1980	36,112	1,444	1,139	1,139	3,164	426
1981	36,456	1,458	1,115	1,115	3,163	350
1982	35,874	1,195	1,044	1,044	3,093	283
1983	33,582	761	991	991	3,072	231
1984	33,324	533	968	968	2,968	206

	Malawi		Malaysia		Thailand	
	Kwacha	US$	Ringgit	US$	Baht	US$
	1980 currency units					
1970	136	163	2,415	789	9,645	464
1971	151	182	2,489	816	9,833	473
1972	147	183	2,660	943	10,041	483
1973	141	172	2,895	1,185	10,717	520
1974	147	175	3,060	1,271	11,013	541
1975	151	174	3,008	1,252	11,496	564
1976	155	170	3,277	1,289	12,198	598
1977	158	174	3,445	1,400	12,771	626
1978	166	196	3,434	1,483	13,743	676
1979	171	209	3,665	1,675	14,252	698
1980	164	202	3,890	1,787	14,743	720
1981	151	168	4,059	1,762	15,376	705
1982	151	143	4,183	1,791	15,714	683
1983	151	129	4,338	1,869	16,318	709
1984	151	107	4,527	1,931	17,033	721

Note: Refer to appendix C for a complete listing of data.

Sources: (14, 35).

Appendix table 2--Macroeconomic and trade variables 1/

Country	Gross domestic product per capita 3/		Nominal value of agricultural trade		Nominal value of nonagricultural trade		Per capital Consumption, real	Per capital Investment real 2/
	Nominal	Real	Exports	Imports	Exports	Imports		
	Average annual growth rates (percent)							
Ecuador:								
1970-74	21.23	10.61	20.04	30.81	79.99	33.18	4.91	12.03
1975-79	16.62	4.05	21.85	13.40	14.47	14.07	3.07	5.33
1980-84	21.47	-2.43	16.66	28.78	28.75	22.88	-1.43	-11.30
Guatemala:								
1970-74	9.96	3.66	17.87	13.29	23.06	23.42	2.44	9.91
1975-79	13.30	3.29	18.49	21.89	9.98	17.51	3.17	6.95
1980-84	1.33	-4.43	-8.23	-7.29	-9.58	-10.63	-1.96	-13.82
Kenya:								
1970-74	11.69	5.56	18.27	13.82	16.96	19.83	3.55	5.04
1975-79	12.38	2.29	19.27	10.56	8.65	17.42	-.82	8.20
1980-84	8.24	-1.57	18.05	20.38	5.35	.52	-5.11	-14.36
Malawi:								
1970-74	11.87	.82	18.29	10.09	21.68	15.96	2.97	7.60
1975-79	8.74	.14	9.73	-3.00	-4.71	13.28	3.17	4.50
1980-84	11.47	-1.60	16.56	-.96	-13.59	5.15	-2.78	-7.72
Malaysia:								
1970-74	13.57	6.24	18.85	17.31	17.82	19.51	3.82	13.72
1975-79	13.92	4.42	16.85	11.81	23.56	20.16	6.56	13.75
1980-84	7.27	3.69	5.36	3.91	9.96	9.21	1.86	3.88
Thailand:								
1970-74	15.26	3.52	29.10	21.22	20.49	21.28	3.11	3.93
1975-79	13.40	5.49	14.89	15.15	25.64	21.52	5.62	10.32
1980-84	7.17	3.48	3.82	2.66	10.53	6.12	3.15	-2.07

1/ Growth rates were computed by estimating $y = a * e^{b*t}$. Real variables are expressed in 1980 local currency.

2/ Real consumption and investment were computed by deflating nominal data by the IFS consumer price index base year 1980.

3/ Nominal GDP was deflated by the GDP deflator with a base year of 1980 from the IMF's 1986 International Financial Statistics Yearbook to obtain real GDP. All variables are expressed in local currency.

Note: Refer to appendix C for a complete listing of data.

Sources: (14, 29, 35).

recent period, 1980-84, the downturn in real per capita income is correlated with a decline in real per capita consumption in Ecuador, Guatemala, Kenya, and Malawi and a significant reduction of growth in Malaysia and Thailand. Investment spending, like consumption, is closely correlated with income trends; however, investment growth rates seem to be more sensitive to fluctuations in income growth. For example, there were negative growth rates for investment in five countries during 1980-84, while investment growth declined substantially in Malaysia.

Data in appendix table 3 reveal relative levels of, and changes in, export-orientation of the six countries expressed by the ratio of the total value of exports of goods and nonfactor services to gross domestic product from 1960-86. To allow for cross-country comparisons, averages for the ratios have been computed for 1960-69, 1970-79, and 1980-86 and are discussed here.

Appendix table 3--Total value of exports to gross domestic product

Country	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
					Percent					
Ecuador	15.6	14.6	16.7	15.1	14.5	15.7	16.4	15.5	15.0	12.8
Guatemala	12.6	12.0	11.8	14.3	15.4	16.8	18.9	16.2	16.7	17.8
Kenya	31.1	32.7	32.0	32.0	33.4	31.4	32.4	28.5	29.4	29.5
Malawi	18.3	17.1	17.7	18.1	16.1	16.1	17.8	19.9	19.1	19.0
Malaysia	51.3	46.7	44.8	43.1	41.4	42.4	40.8	37.8	40.0	43.5
Thailand	17.4	18.8	16.9	16.4	18.7	18.3	19.0	19.7	18.3	17.4

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
					Percent					
Ecuador	14.0	14.9	18.8	24.9	36.2	26.2	25.7	24.8	21.3	25.9
Guatemala	18.6	17.3	19.8	22.1	23.8	21.7	22.2	24.3	21.1	21.3
Kenya	29.8	28.6	26.6	27.4	33.7	29.8	32.5	35.0	28.9	26.4
Malawi	19.9	19.0	19.4	22.0	22.0	23.1	24.8	24.8	19.4	24.1
Malaysia	42.0	38.7	34.5	39.7	46.3	43.6	49.6	48.0	49.1	56.0
Thailand	16.7	17.4	19.4	19.6	22.3	19.1	21.1	20.9	21.5	23.7

	1980	1981	1982	1983	1984	1985	1986
				Percent			
Ecuador	25.2	21.8	21.1	23.8	25.5	26.7	22.9
Guatemala	21.8	16.8	14.8	13.0	13.4	18.9	16.4
Kenya	28.6	25.5	24.9	25.3	28.8	27.8	29.1
Malawi	24.6	25.8	22.6	20.8	28.3	24.4	22.5
Malaysia	57.5	52.3	50.9	52.3	54.4	55.3	57.4
Thailand	24.5	24.9	24.9	22.4	24.6	26.7	29.0

Note: Ratios are calculated using nominal data in local currency units.
Sources: (14, 35).

According to appendix table 3, Malaysia has the most open economy since the value of Malaysia's exports account for 43.2, 44.8, and 54.3 percent of the value of GDP for 1960-69, 1970-79, and 1980-86, respectively. Kenya is the next most export-oriented country with an average exports/GDP ratio of 30 percent for 1960-86. The data for Kenya indicate, however, that the country is becoming less export-oriented. While the economies of Ecuador, Malawi, and Thailand appear to be less open than those of Kenya and Malaysia, with ratios averaging 20 percent for 1960-86, the three countries' ratios have increased an average of 6 percent from 1960-69 to 1980-86. Guatemala is least open economy. Its exports account for an average of 18 percent of GDP.

Appendix table 4--Net exports as a share of gross domestic product

Country	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
						Percent				
Ecuador	-2.4	-2.9	-2.0	-2.2	-3.0	-3.0	-2.5	-3.9	-5.6	-6.1
Guatemala	-1.9	-1.5	-1.6	-1.6	-2.7	-2.8	-.2	-3.3	-1.7	.4
Kenya	-2.6	1.6	1.9	3.1	4.2	.7	1.5	-.9	.1	1.4
Malawi	-14.3	-13.6	-11.9	-13.6	-7.8	-12.1	-13.8	-9.7	-13.6	-13.3
Malaysia	12.3	5.2	2.4	1.6	1.6	4.2	3.8	2.3	3.2	9.3
Thailand	-1.5	.3	-2.2	-3.5	-1.6	-1.3	-.4	-2.2	-4.1	-4.3

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
						Percent				
Ecuador	-4.5	-9.4	-3.6	3.2	5.1	-6.5	-1.4	-3.0	-5.6	.6
Guatemala	.8	-1.4	.2	.6	-3.4	-1.8	-5.3	-1.7	-6.0	-4.4
Kenya	-.8	-6.6	-2.1	-1.3	-7.2	-4.7	.7	3.4	-9.8	-6.0
Malawi	-12.8	-10.4	-12.6	-9.6	-12.2	-18.2	-6.0	-4.1	-16.1	-18.3
Malaysia	4.1	1.4	-1.3	5.4	.2	.4	10.0	7.2	5.6	8.9
Thailand	-4.9	-3.1	-1.2	-1.7	-2.8	-4.6	-2.4	-5.4	-4.0	-6.1

	1980	1981	1982	1983	1984	1985	1986
				Percent			
Ecuador	-.2	1.0	-2.2	4.0	3.7	5.5	-.7
Guatemala	-2.9	-6.6	-4.0	-1.6	-1.9	-2.8	.7
Kenya	-11.4	-9.0	-4.7	-1.3	-.5	.0	1.2
Malawi	-13.8	-9.1	-6.4	-7.6	2.6	-5.1	-3.2
Malaysia	2.5	-6.2	-8.7	-5.2	2.0	5.5	6.1
Thailand	-5.4	-4.8	-.1	-5.1	-2.1	-1.2	2.7

Note: Ratios are calculated using nominal data in local currency units.
Sources: (14, 35).

Appendix table 4 depicts the relative shares of net total trade to gross domestic product for the six countries for 1960-86. The data show, on average for 1960-86, that Malaysia is still the most export-oriented economy in terms of net trade, followed by Ecuador, Kenya,

Guatemala, Thailand, and Malawi. Ecuador's net trade/GDP ratios for 1980-86 are positive, reflecting higher levels of exports than imports in recent years.

Exchange rate changes influence trade patterns significantly; thus, exchange rates have received considerable attention in recent years. The real exchange indices that were computed for each country (app. table 5) provide an indication of the impact of exchange rates on trade. 4/ Although the real exchange rate is not a perfect measure of the effect of exchange rates on trade, it is suitable for general cross-country comparisons. Every country in the sample allowed its currency to become overvalued during the 1970s, with Kenya and Ecuador being the extreme cases. The corrective effects of structural adjustment policy reforms in Kenya and Malawi are evident by the rise in the exchange rate indices after 1980. Similar corrective actions were taken in Malaysia and Thailand at about the same time. Although not shown in the data in appendix table 5, Ecuador has adjusted its exchange rate thus increasing its index value. As will be seen in the individual country studies, the behavior of the exchange rate is a particularly important variable in explaining trends in agricultural trade, especially in Ecuador.

One of the frequent criticisms of using GDP per capita as a measure of development is the argument that it fails to measure the indicators of development. In other words, GDP measures changes in production and income, but does not discriminate among types of production. As an alternative, or supplement, three social or basic needs indicators have been computed for each of the six countries (app. table 6). These measures are intended to be representative, not exhaustive, in their coverage of the concept of basic needs.

The measures are life expectancy at birth for males and females, infant mortality, and primary school enrollment. In order to gain a broad perspective on changes, we present data for 1965 and 1984, instead of the customary 1970-84 period. To facilitate an evaluation of performance, the reference group measures also are included. 5/

Based on the three measures, Malawi is currently below, and Kenya above, the average of the development indicators for Sub-Saharan Africa. The one category in which Malawi's performance was better than average at independence, primary school enrollment, has since fallen substantially. Further, improvements in Malawi's development indicators are modest in comparison with those of other countries in the region. This trend is especially striking in the area of primary school enrollment, where only 63 percent of school age children in Malawi are enrolled, compared with 91 percent in other low-income countries and 76 percent in other Sub-Saharan countries. Kenya, on the other hand, compares favorably with other African countries since it has maintained or improved this margin, although it had an advantage over other African countries at independence. Relative to low-income countries, however, Kenya

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4/ The real exchange rate adjusts the nominal exchange rate for differences in the U.S. and domestic inflation rates. If prices in country X are rising faster than in the United States and there is no change in the nominal exchange rate, the currency of country X is judged to be overvalued. An overvalued currency tends to discourage exports, encourage imports, and, thereby, contribute to a balance of payments deficit. A more accurate measure of exchange rate disequilibrium is the real effective exchange rate, the computation of which includes an adjustment for changes in the foreign exchange value of trading partners' currencies. In order to compute the real effective exchange rate it is necessary to have data on the major trading partners of each country. These data were unavailable; therefore, we rely on the simpler real exchange rate measure.

5/ For example, the data for Sub-Saharan Africa are computed as weighted averages, by population, of all low-income countries in that region.

Appendix table 5--Real exchange rates 1/

Years	Ecuador	Guatemala	Kenya	Malawi	Malaysia	Thailand
			1970=100			
1970	100.00	100.00	100.00	100.00	100.00	100.00
1971	114.73	104.77	100.50	96.21	102.27	103.98
1972	110.06	107.86	97.83	92.71	94.70	102.41
1973	103.19	100.63	93.09	95.44	78.69	93.36
1974	92.87	95.70	89.46	94.23	73.43	82.29
1975	87.99	92.35	84.36	91.53	76.47	85.30
1976	84.03	88.33	91.31	98.07	83.45	86.77
1977	79.17	83.77	83.77	99.16	82.19	85.99
1978	76.38	83.25	71.98	91.83	79.45	85.45
1979	76.99	83.16	71.71	89.11	80.58	86.86
1980	77.34	85.14	71.02	84.44	85.31	82.56
1981	73.36	84.37	5.51	91.91	90.58	86.18
1982	80.33	89.17	90.88	104.72	92.36	91.56
1983	81.96	88.13	102.55	105.97	91.16	91.15
1984	93.24	88.87	105.18	110.75	92.30	96.85
1985	83.79	77.48	109.75	126.11	100.91	112.44

1/ Real exchange rates are equal to: (nominal exchange rate) * (U.S. consumer price index/local consumer price index). The exchange rates are expressed in terms of domestic currency to U.S. dollars and base year for all consumer price indices is 1980.

Note: Refer to appendix C for a complete listing of data.

Source: (14).

compares less well except in the area of primary school enrollment where it has done especially well.

For all three indicators, Thailand and Ecuador compare favorably with the countries in the other lower middle-income group, although some allowance should be made for their somewhat higher starting points in 1965. The performance of these two countries compares favorably even with upper middle-income countries for some of the indicators. Guatemala's performance is about average for life expectancy, but is well below average for infant mortality and primary school enrollment. Malaysia compares favorably with its income group peers since its performance is comparable or superior to that of other countries in the group in every category. Malaysia's performance is especially impressive, since in 1965 its data were at or below the averages of upper middle-income countries.

Composition of GDP

The composition of GDP for each of the economies is presented in appendix table 7. Agriculture constitutes the largest sector in four of the six countries, the exceptions being Guatemala where agriculture and retail trade and services were of equal size and Ecuador where manufacturing was largest in the most recent period. Although the agricultural sectoris the largest in four of the six countries, its share of GDP varies considerably, ranging from 21 percent in Malaysia to 37 percent in Malawi. The mining sector (which refers to oil production)

Appendix table 6--Trends in basic needs measures

Country	Life expectancy: Male		Life expectancy: Female		Infant mortality rate		Primary school enrollment	
	1965	1984	1965	1984	1965	1984	1965	1983
	Years				No.2/		Pct. 2/	
Low-income economies	49	60	51	61	125	72	80	91
Sub-Saharan Africa	41	47	43	50	155	129	37	76
Malawi	38	44	40	46	201	158	44	63
Kenya	43	52	46	56	113	92	54	100
Lower to middle-income economies	47	56	50	60	133	83	70	101
Thailand	53	62	58	66	90	44	78	99
Ecuador	54	63	57	67	113	67	91	115
Guatemala	48	58	50	62	114	66	50	73
Upper to middle-income economies	56	63	60	68	91	56	96	99
Malaysia	56	66	59	71	57	28	90	99

1/ Defined as the number of infants who die before reaching year of age, per thousand.

2/ Expressed as the percentage of the total primary school age population enrolled in primary school. Ratios exceeding 100 percent indicate cases where the ages of pupils are above or below the country's standard primary-school age.

Source: (36).

is significant only in Ecuador and Malaysia, where in 1980-84 it accounted for 13.8 percent and 9.8 percent of GDP, respectively. The increased importance of oil in Ecuador was offset by a decline in the size of the agricultural sector, from 22 percent in 1970-74 to 13 percent in 1980-84. (The link between increased oil exports, exchange rate appreciation, and the decline of agriculture is well known and characterizes Ecuador's experience). In Ecuador, Malaysia, and Thailand, the manufacturing sector accounted for roughly 20 percent of GDP, while in Guatemala, Kenya, and Malawi, it contributed between 10-12 percent of GDP. Services is the other sector for which there were notable differences among the countries. In Kenya, less than 4 percent of GDP was generated by services, while in Malaysia that sector accounted for 16-19 percent.

Agricultural Trade

In order to gain a better of idea of the nature of agricultural trade for each of the countries analyzed, we present data on principal agricultural exports and imports in appendix tables 8 and 9. Agricultural exports (app. table 8) are highly concentrated in each country, with two or three commodities accounting for a minimum of 56 percent (Thailand in 1984) and up to 86 percent (Malawi in 1984) of the value of agricultural exports. This same concentration does not characterize agricultural imports, see (app. table 9). Nonetheless, individual commodities can be important components of imports; for example, Ecuador's 1975 imports of wheat (42 percent), palm oil in Kenya in 1984 (29 percent), and 1984 wheat imports in Malawi (30 percent).

Appendix table 7--Share of gross domestic product by sector

Sector/year	Ecuador	Guatemala	Kenya	Malawi	Malaysia	Thailand
			Percent			
Agriculture:						
1970-74	21.55	27.82	34.14	43.33	27.22	30.37
1975-79	16.03	26.57	37.06	40.46	25.85	28.93
1980-84	12.59	25.20	32.33	37.16	20.58	22.74 **
Mining:						
1970-74	6.78	.08	.40	NA	8.23	1.78
1975-79	10.12	.15	.27	NA	10.05	1.89
1980-84	13.78	.34	.23	NA	9.81	1.84 **
Construction:						
1970-74	4.51	1.66	5.88	4.39	3.91	4.66
1975-79	6.59	2.86	5.54	5.18	3.83	4.93
1980-84	7.16	2.93	6.30	4.53	4.88	5.34 **
Manufacturing:						
1970-74	17.71	15.83	12.12	11.12	13.94	16.97
1975-79	17.88	15.85	11.85	11.42	18.26	18.88
1980-84	18.14	16.02	2.69	12.35	19.31	21.27
Utilities:						
1970-74	.96	1.26	.01	1.39	1.36	1.23
1975-79	.76	1.57	1.94	1.59	1.41	1.10
1980-84	.71	1.74	2.10	1.96	2.27	1.44 **
Transportation and communication:						
1970-74	6.27	5.86	6.47	6.10	4.34	6.18
1975-79	6.82	6.54	5.47	6.23	4.88	6.43
1980-84	8.19	6.82	5.72	6.32	5.67	7.33 **
Trade:						
1970-74	14.93	28.41	9.49	12.59	12.93	18.82
1975-79	15.38	27.85	10.55	15.21	10.92	18.53
1980-84	14.56	26.50	11.28	13.48	12.16	18.69 **
Banking, investment, and real estate:						
1970-74	6.61	2.38	4.43	4.96	10.22	4.29
1975-79	10.91	2.90	.39	5.43	8.55	5.10
1980-84	10.79	3.58	6.98	6.54	8.42	6.93 **

See notes at end of table

Appendix table 7--Share of gross domestic product by sector --Continued

Sector/year	Ecuador	Guatemala	Kenya	Malawi	Malaysia	Thailand
			Percent			
Services:						
1970-74	7.31	5.59	3.73	4.89	17.84	9.57
1975-79	4.98	5.97	2.96	3.68	16.25	8.96
1980-84	5.57	6.21	3.33	4.13	16.91	18.43
Public administration & defense:						
1970-74	7.94	4.70	15.44	10.39	NA	4.24
1975-79	8.29	5.97	14.32	8.62	NA	3.92
1980-84	8.17	6.21	14.75	11.84	NA	4.26 **

NA = Not applicable.

Notes: 1. Ownership of dwellings is excluded from this table except where otherwise noted.
2. Ownership of dwellings is included in the trade category and public administration and defense is included in services for Malaysia.
3. ** Asterisks indicate where 1980-84 contains data for 1980-83 only; otherwise figures are average shares over the periods indicated.
4. Refer to appendix C for a complete listing of data.

Source: (35).

Appendix table 8--Principal agricultural exports

Country	Commodity	Share of agricultural exports in value terms				Average share 1970-84
		1970	1975	1980	1984	
		Percent				
Ecuador	Bananas	47.40	43.00	31.40	26.00	36.10
	Cocoa beans	12.60	12.90	5.00	18.80	11.00
	Coffee	28.50	19.70	21.20	34.20	28.20
	Share of exports by top three commodities	88.50	75.60	57.60	79.00	75.30
Guatemala	Coffee	49.13	36.40	45.49	50.36	47.03
	Cotton lint	12.94	16.42	16.13	10.00	14.41
	Sugar	4.47	25.62	7.35	8.67	9.59
	Share of exports by top three commodities	66.54	78.44	68.97	69.03	71.03
Kenya	Coffee	35.20	30.60	41.90	39.60	40.10
	Sisal, other agaves	3.00	6.50	3.40	2.00	3.70
	Tea	22.60	20.50	24.70	36.80	23.70
	Share of exports by top three commodities	60.80	57.60	70.00	78.40	67.50
Malawi	Sugar	.40	11.70	18.60	7.90	10.70
	Tea	26.00	20.80	14.70	26.30	20.50
	Tobacco	47.60	53.20	50.70	51.90	52.20
	Share of exports by top three commodities	74.00	85.70	84.50	86.10	83.40
Malaysia	Palm oil	11.57	33.71	29.24	41.75	27.16
	Palm kernel oil	.09	2.72	3.52	7.65	3.17
	Rubber	75.50	50.69	53.66	34.19	56.03
	Share of exports by top three commodities	87.16	87.12	86.42	83.59	86.36
Thailand	Maize	18.00	18.50	10.50	11.50	12.80
	Rice	24.50	19.30	28.50	29.60	25.70
	Rubber	21.70	11.40	18.00	14.90	15.80
	Share of exports by top three commodities	64.20	49.20	57.00	56.00	54.30

Note: Refer to appendix C for a complete listing of data.
Source: (29).

Appendix table 9--Principal agricultural imports

Country	Commodity	Share of agricultural imports in value terms				Average share 1970-84
		1970	1975	1980	1984	
		Percent				
Ecuador	Animal fat/oil/grease	19.40	8.70	5.80	3.50	7.08
	Soybean oil	11.10	8.40	11.40	16.90	12.57
	Wheat	29.10	42.00	37.90	27.10	31.67
	Share of imports by top three commodities	59.60	59.10	55.10	47.50	51.32
Guatemala	Cattle	4.18	1.23	15.72	0	7.12
	Milk	7.05	3.79	8.38	14.91	7.57
	Wheat	18.78	22.59	17.11	20.08	18.92
	Share of imports by top three commodities	30.01	27.61	41.21	34.99	33.61
Kenya	Palm oil	3.70	8.60	20.60	28.70	18.90
	Sugar	9.20	12.50	.60	.30	10.80
	Wheat	.60	14.90	6.40	11.40	8.20
	Share of imports by top three commodities	13.50	36.00	27.60	40.40	37.90
Malawi	Milk	7.50	8.60	18.00	23.10	13.30
	Tobacco	16.90	19.40	6.50	0	14.20
	Wheat	11.10	17.40	21.90	29.80	18.00
	Share of imports by top three commodities	35.50	45.40	46.40	52.90	45.50
Malaysia	Rice	13.73	9.45	4.37	9.05	10.03
	Sugar	11.70	18.77	14.71	10.05	12.72
	Wheat	7.55	8.47	7.31	6.87	7.99
	Share of imports by top three commodities	32.98	36.68	26.39	25.97	30.74
Thailand	Cotton lint	23.30	36.40	19.50	29.10	30.00
	Milk	20.50	14.40	8.60	12.20	13.00
	Tobacco	16.40	15.20	7.80	6.60	12.30
	Share of imports by top three commodities	60.20	66.00	35.90	47.90	55.30

Note: Refer to appendix C for a complete listing of data.
Source: (29).

APPENDIX B--MALAYSIAN RICE

Appendix table 10--Malaysian rice marketing intervention mechanisms

Policy tools	Description
I.Measures that affect net farm income by changing farm revenue. Under this, the LPN is the main coordinating body responsible for administering the Guaranteed Minimum Price (GMP) and the padi price subsidy.	
A. Guaranteed Minimum Price (GMP)	In 1949, the government withdrew as the sole purchaser of padi and introduced the GMP. The GMP was intended to act as an incentive to production by guaranteeing a floor price for rice and to promote redistribution of income.
B. Coupon price subsidy	A padi price (or coupon) subsidy scheme was implemented in 1980. Under this scheme, farmers were initially given assistance in the form of a coupon that can be cashed. The overall objective of the coupon subsidy was to raise farmers' incomes to be in line with the national poverty line income (PLI) of $M 300 a month.
C. Padi stockpile	Government stockpiles were introduced in 1946 to guard against emergency rice shortages. As self-sufficiency levels improved with the introduction of the GMP, the buffer stocks began to play the role of a price stabilizer, especially during the early 1970s. When rice price controls were introduced in 1974, however, the stockpile was no longer required to stabilize prices and it became a security measure only.
D. Rice import controls	Administered by LPN.
II. Measures that affect net farm income by changing farm costs. These measures change costs of production through explicit subsidies on inputs such as fertilizer, seeds, mechanization, or credit. In addition 'implicit' subsidies also exist through the absence of recovery cost on drainage and irrigation schemes where the charges for provision of facilities do not cover the capital, operating, and maintenance of the schemes.	

Continued--

Appendix table 10--Malaysian rice marketing intervention mechanisms--Continued

Policy tools	Description
A. Fertilizer subsidies.	Since 1974, all rice farmers became eligible to obtain fertilizer at a subsidized rate. Under this scheme, the Farmers Organization Authority (FOA) supplied fertilizers, agro-chemicals, and planting materials under its subsidy program. Farmers now receive free fertilizer up to a total value of US$200/hectare.
B. Short-term padi production credit scheme	Administered by DOA.
C. Farm cultivation subsidies	Administered by FOA.
D. Irrigation water charges	Administered by DDI.
III. Measures that affect productivity, adoption of a new technology, or crop diversification.	Since independence, the provision of proper drainage and irrigation facilities has been given top priority. In addition, the government has also provided assistance in credit, extension, farm mechanization, and research.
	The seasonality of rainfall, its unequal distribution, droughts, and the need to grow a second crop led to increasing allocations in the various 5-year development plans. Investment in drainage and irrigation under the Fourth Malaysia Plan (1980-85) has led to the improvement of some 68,000 ha. of land for both single and double cropping of rice. The area of padi land under irrigation increased by some 70 percent over the decade.
A. Agricultural mechanization assistance	Administered by FOA.
B. Padi rehabilitation grants	Administered by DOA.
IV. Measures that affect the consumption of agricultural commodities.	The imposition of rice controls under LPN, at the wholesale and retail level, have been the major intervention in this area since 1974. Other functions such as licensing and regulation of millers, wholesalers, and retailers in the trade, importation, and its own direct purchases and processing of padi have implications for consumption. These will be discussed in more detail in the sections below on institutions.
A. Retail, wholesale and milling price controls	Administered by LPN.
B. Storage and milling subsidies	Administered by LPN.

Initials used: Lembaga Padi Negara (LPN), Department of Drainage and Irrigation (DDI), Bank Pertanian Malaysia (BPM), Farmers' Organization Authority (FOA), and Department of Agriculture (DOA). Source: (237).

Lembaga Padi dan Beras Negara. LPN functions not only as the single most important policy administrative institution in the rice industry, but also as an important source of direct and indirect influence on government policymaking machinery. Its large discretionary authority stems from the manner in which it chooses to interpret and perform its widely defined legislated duties, one of which is advisory in the formulation of government rice policy.

Although it may not be formally imbued with executive decisionmaking functions, it has an important role in shaping Malaysian rice policy. LPN seeks to provide four basic objectives: 1) fair and stable padi prices for farmers, 2) fair and stable rice prices for consumers, 3) a sufficient supply of rice to meet all emergencies, and 4) recommendations for government policies to promote the development of the padi and rice industry and, on approval, to coordinate and assist in their implementation.

Appendix table 11--Malaysian rice policy instruments and targets

Fixed factors	Input markets	Product markets	Other
Government: expenditure, drainage, and irrigation for rice			
Land			
	Other inputs		
Research	Research		
	Fertilizer subsidy		
	Seed and input distribution		
		Guaranteed minimum price	
		producer subsidy	
			consumer subsidy 1/
Replanting grants			
		Import controls, and subsidies i.e., exemption to producers by import duties, surtaxes, and sales taxes.	Import controls and subsidies i.e., exemption to producers by import duties, surtaxes, and sales taxes. 2/

1/ Consumer subsidies affect consumption or retail markets.

2/ These policies affect border pricing.

Appendix table 12--Padi purchased by LPN and the private sector

Year	Padi purchased by sector: Private sector	LPN	Total	Share of total purchases by private sector
	1,000 MT			Percent
1973	478	89	566	88
1974	494	56	549	90
1975	568	144	712	80
1976	NA	134	NA	NA
1977	NA	134	NA	NA
1978	NA	127	NA	NA
1979	401	219	620	65
1980	549	317	866	63
1981	651	338	989	64
1982	658	322	980	67
1983	661	325	986	67
1984	655	282	937	70
1985	649	560	1,209	54

Appendix table 13--Rice purchased by LPN and the private sector

Year	Rice purchased by sector: Private sector	LPN	Total	Share of total purchases by private sector
	1,000 MT			Percent
1979	293	244	537	55
1980	362	304	666	54
1981	428	337	765	56
1982	419	453	878	48
1983	430	459	889	48
1984	NA	556	NA	NA
1985	NA	546	NA	NA

NA = Not available.

Source: (188).

Appendix table 14--LPN's involvement in rice trade

Year/ variable	Padi purchases	Padi milled	Rice imports	Total rice sales 1/	Rice stocks
			1,000 MT		
1980	227	199	246	378	67
1981	254	246	316	437	125
1982	263	298	377	520	155
1983	299	280	350	525	105
1984	282	264	436	556	143
1985	560	464	345	546	263
Mean	314	292	345	494	143
standard deviation	112	831	58	64	61
			Percent		
Covariance	36	28	17	13	42

Year/ variable	Share of milled rice to total rice sales	Share of rice imports to total rice sales	Share of rice stocks to total rice sales
		Percent	
1980	53	56	18
1981	56	72	29
1982	7	73	30
1983	53	67	20
1984	48	78	26
1985	85	63	48
Mean	59	70	29
standard deviation	12	5	8
		Percent	
Covariance	21	7	3

1/ Total sales equals milled padi + rice imports - stocks.

Source: (188).

APPENDIX C--COUNTRY DATA

Malawi

Appendix table 15--Macroeconomic data, 1970-84

Year	Population	Nominal gross domestic product	Exchange rate	Nominal gross domestic product per capita	Real gross domestic product per capita	Real gross domestic product deflator	Consumer price index	Total agricultural exports	Total agricultural imports	Total exports
	1,000	1,000 K	K/US$	-K-	--------1980 K--------			------1,000 Kwatch------		
1970	4,513	242,100	0.833	54	124	43	41	41,957	14,084	58,700
1971	4,643	303,600	.831	65	138	48	44	53,357	10,872	71,200
1972	4,778	325,500	.802	68	134	51	46	57,902	12,352	75,800
1973	4,916	364,000	.819	74	146	51	48	72,508	16,483	100,600
1974	5,058	461,500	.841	91	152	60	56	89,842	18,944	129,300
1975	5,204	529,700	.864	102	156	65	64	105,011	20,854	154,300
1976	5,354	612,000	.913	114	161	71	67	140,433	19,561	186,300
1977	5,509	728,000	.903	132	164	81	70	166,313	17,238	218,400
1978	5,682	800,700	.844	141	172	82	76	142,794	14,329	185,700
1979	5,861	831,900	.817	142	167	85	84	169,427	20,967	209,700
1980	6,046	937,500	.812	155	155	100	100	202,923	25,836	249,700
1981	6,234	1,050,200	.895	168	145	116	112	226,617	34,187	284,400
1982	6,427	1,181,600	1.056	184	145	127	123	245,684	26,643	280,200
1983	6,626	1,372,000	1.175	207	146	142	139	258,536	29,912	298,200
1984	6,832	1,695,300	1.413	248	154	161	167	434,782	26,327	463,400

Note: K denotes kwacha.
Source: (35).

Appendix table 15--Macroeconomic data, 1970-84 (cont.)

Year	Total imports	Private consumption	Government consumption	Total consumption	Real consumption per capita	Gross domestic investment	Real gross domestic investment per capita	Gross domestic product at factor cost
	1,000 Kwacha				1980 K	1,000 K	1980 K	1,000 K
1970	94,800	176,300	39,600	215,900	117	62,300	34	225,600
1971	107,700	236,900	45,000	281,900	138	58,200	28	282,200
1972	123,500	248,600	45,200	293,800	135	79,400	36	303,300
1973	136,800	270,000	48,700	318,700	135	81,500	34	340,800
1974	179,800	320,200	65,700	385,900	137	126,100	45	433,300
1975	243,100	365,200	74,700	439,900	132	178,600	54	494,700
1976	237,900	416,600	86,300	502,900	140	160,700	45	578,300
1977	252,100	483,400	98,600	582,000	152	179,700	47	683,900
1978	329,200	502,200	134,200	636,400	148	307,800	72	742,500
1979	380,400	577,000	164,200	741,200	151	261,400	53	757,800
1980	249,700	390,100	635,300	193,900	137	248,700	41	853,800
1981	348,700	720,000	199,200	919,200	132	195,300	28	956,900
1982	359,300	775,600	219,100	994,700	126	266,000	34	1,077,700
1983	407,100	908,300	233,000	1,141,300	124	339,600	37	1,252,600
1984	456,700	1,143,500	266,100	1,409,600	123	279,000	24	1,535,200

Source: (35)

Appendix table 16--Gross domestic product by sector, 1970-84

Year	Agriculture	Construction	Manufacturing	Electricity	Transport/ communication	Trade	Banking/ insurance/ real estate	Ownership of dwellings
	Mil. Kwacha							
1970	99.2	9.6	26.6	3.2	11.1	23.1	12.8	0
1971	125.1	11.8	28.8	4.0	17.3	36.3	12.9	0
1972	138.4	14.5	34.2	4.2	20.6	37.4	16.5	0
1973	141.7	14.5	37.7	5.1	22.4	44.0	14.4	12.5
1974	178.4	19.6	48.9	5.4	26.4	63.2	21.1	15.8
1975	193.7	23.7	59.7	7.9	35.7	74.5	24.6	19.6
1976	233.1	27.5	67.2	8.4	34.0	95.7	27.9	22.3
1977	298.0	31.3	71.7	10.5	36.3	113.8	33.6	26.1
1978	294.9	46.2	84.8	12.5	44.7	104.8	43.3	29.3
1979	299.6	42.1	87.3	13.0	50.8	103.6	49.9	31.1
1980	318.8	46.3	99.9	15.8	58.5	122.6	57.7	36.2
1981	345.2	45.4	121.8	18.9	63.2	129.9	62.8	42.0
1982	405.0	48.8	133.4	21.2	68.0	137.9	68.9	47.4
1983	469.6	51.1	158.9	25.5	72.6	165.8	81.9	54.8
1984	572.8	59.5	188.3	30.6	92.6	206.3	99.1	65.3

Source: (35).

Appendix table 16--Gross domestic product by sector, 1970-84 (cont.)

Year	Services	Public administration, defense	Other branches	Gross domestic product statistical discrepancy	Net factor income from abroad	Net indirect taxes
			Millions of Kwacha			
1970	13.8	26.2	0.0	0.0	(6.0)	16.5
1971	15.2	30.8	.0	.0	(3.3)	21.4
1972	8.6	28.9	.0	.0	(3.7)	22.2
1973	18.2	35.3	(.0)	.0	.8	23.2
1974	20.7	41.5	(7.7)	.0	12.4	28.2
1975	20.8	43.5	(9.0)	.0	8.0	35.0
1976	22.1	46.9	(6.8)	.0	(18.0)	33.7
1977	21.1	52.9	(11.4)	.0	(23.0)	44.1
1978	26.9	67.2	(12.1)	.0	(4.0)	58.2
1979	27.7	71.3	(20.1)	1.5	(34.8)	74.1
1980	32.7	88.6	(23.2)	(.1)	(81.1)	83.7
1981	40.4	112.7	(25.3)	(.1)	(74.3)	93.3
1982	45.0	130.5	(28.3)	(.1)	(74.0)	103.9
1983	53.7	151.7	(33.0)	.0	(75.4)	119.4
1984	63.6	197.0	(39.9)	.0	(70.1)	160.1

() denotes a negative number.
Source: (35).

Appendix table 17--Agricultural production, 1970-84

Year	Groundnuts	Maize	Milk	Milled rice	Sugar	Tea	Tobacco	Wheat
				Metric tons				
1970	151,590	900,000	16,000	14,152	32,763	18,733	22,250	1,814
1971	215,274	1,239,200	17,000	20,020	32,423	18,597	26,438	665
1972	219,265	1,310,000	14,305	27,105	33,764	20,684	30,662	855
1973	184,158	1,281,845	19,760	23,581	48,962	23,600	30,481	605
1974	165,000	1,280,000	18,392	25,930	49,371	23,405	27,291	544
1975	165,000	1,000,000	25,214	21,881	64,880	26,238	34,926	635
1976	165,000	1,100,000	33,135	28,287	84,231	28,307	36,980	919
1977	140,000	1,314,000	30,663	27,887	91,540	31,628	51,842	407
1978	170,000	1,415,000	33,475	32,380	93,476	31,690	51,627	500
1979	175,000	1,082,000	33,576	25,667	107,628	32,609	53,980	500
1980	177,000	1,165,000	33,600	23,724	147,114	29,915	54,411	500
1981	180,000	1,245,000	36,160	21,893	166,643	31,965	50,672	600
1982	180,000	1,415,000	37,450	21,450	171,794	38,484	58,520	600
1983	180,000	1,370,000	38,710	21,450	175,292	32,011	72,243	600
1984	180,000	1,400,000	39,150	21,450	162,000	34,000	62,000	600

Source: (30).

Appendix table 18--Agricultural exports, 1970-84

Year	Groundnuts	Maize	Milk	Rice	Sugar	Tea	Tobacco	Wheat	Sugar	Tea	Tobacco	Total agricultural exports
	Metric tons								1,000 US$			
1970	22,511	1	0	2,811	1,640	17,709	19,801	7	189	13,099	23,965	50,369
1971	29,190	4,602	0	5,172	3,244	18,157	24,679	2,190	379	14,381	32,594	64,208
1972	35,704	36,841	0	7,150	3,638	19,970	27,243	0	54	15,254	35,987	72,197
1973	27,380	36,249	0	14,330	18,002	23,033	30,606	2,843	4,062	7,286	43,586	88,532
1974	20,653	31,014	54	11,070	23,222	25,483	19,543	119	10,933	20,787	52,579	106,827
1975	25,814	10	0	5,101	31,351	25,036	32,274	4,175	14,203	25,237	64,663	121,541
1976	26,026	14	0	4,830	42,237	29,537	36,453	0	25,408	29,015	76,440	153,815
1977	15,210	0	0	11,982	57,633	29,961	38,460	38	16,540	46,196	97,243	184,178
1978	6,856	0	4	7,698	48,029	30,583	41,016	1,783	14,527	34,511	103,336	169,187
1979	13,697	0	19	6,960	63,824	30,995	54,897	567	22,137	37,688	121,822	207,377
1980	25,556	0	0	9,822	92,260	31,347	61,159	2,675	46,518	36,714	126,624	249,905
1981	11,121	0	0	8,061	124,551	31,572	40,936	0	75,164	34,825	114,854	253,203
1982	7,227	49	0	3,097	130,770	37,229	43,974	0	35,748	43,198	139,072	232,655
1983	4,231	76,093	0	499	134,622	35,874	44,261	0	36,456	47,750	116,931	220,031
1984	1,160	250,000	0	0	100,270	40,000	68,600	0	24,400	80,993	159,592	307,701

Source: (29).

Appendix table 19--Agricultural imports, 1970-84

Year	Animal fat/oil/ grease	Groundnuts	Maize	Milk	Rice	Sugar
			Metric tons			
1970	2,771	15	92,343	2,485	33	1,658
1971	3,945	476	246	2,411	76	2,780
1972	3,545	14	122	2,609	131	5,899
1973	3,825	95	95	2,304	15	2,391
1974	4,411	16	514	2,153	4	3,889
1975	3,049	75	20,589	1,817	9	142
1976	3,323	0	21,273	2,246	4	49
1977	2,972	100	1	2,965	7	260
1978	2,376	112	1,700	2,863	200	483
1979	5,525	8	1,900	3,683	1,300	2,316
1980	5,109	0	11,160	3,903	2,121	375
1981	5,995	0	56,113	3,356	290	0
1982	3,664	246	1,153	3,222	360	898
1983	5,774	0	49	2,205	142	519
1984	4,000	0	1	2,600	150	0

Source: (29).

Appendix table 19--Agricultural imports, 1970-84 (cont.)

Year	Tea	Tobacco	Wheat	Milk	Tobacco	Wheat	Total agricultural imports
	Metric tons			1,000 US$			
1970	58	3,602	21,391	1,270	2,863	1,876	16,908
1971	29	4,332	27,897	1,428	3,442	2,639	13,083
1972	76	3,618	27,568	1,799	4,096	3,064	15,402
1973	370	4,735	26,517	1,819	6,623	3,613	20,126
1974	346	3,658	16,107	1,850	5,536	3,478	22,526
1975	363	4,038	19,578	2,064	4,690	4,204	24,136
1976	366	3,021	21,603	2,474	4,614	4,142	21,425
1977	7	1,043	21,775	2,715	1,650	3,450	19,090
1978	16	699	11,761	2,739	1,293	1,904	16,977
1979	13	572	11,625	4,185	1,131	2,353	25,664
1980	2	1,375	22,992	5,713	2,057	6,965	31,818
1981	2	1,454	15,961	4,807	2,134	4,843	38,198
1982	10	715	25,077	4,335	1,451	6,220	25,230
1983	1	703	19,082	3,824	1,572	5,550	25,457
1984	0	1	20,057	4,300	0	5,550	18,632

Source: (29).

Appendix table 20--Apparent utilization, 1970-84 1/

Year	Groundnuts	Maize	Milk	Rice	Sugar	Tea	Tobacco	Wheat
				Metric tons				
1970	129,094	992,342	18,485	11,374	1,082	6,051	23,198	32,781
1971	186,560	1,234,844	19,411	14,924	469	6,09	126,37	31,959
1972	183,575	1,273,281	16,914	20,086	790	7,037	28,423	36,025
1973	156,873	1,245,691	22,064	9,266	937	4,610	24,279	33,351
1974	144,363	1,249,500	20,491	14,864	(1,732)	11,406	16,532	30,038
1975	139,261	1,020,579	27,031	16,789	1,565	6,690	16,038	33,671
1976	138,974	1,121,259	35,381	23,461	(864)	3,548	22,522	42,043
1977	124,890	1,314,000	33,628	15,912	1,674	14,425	22,144	34,167
1978	163,256	1,416,700	36,334	24,882	1,123	11,310	10,478	45,930
1979	161,311	1,083,900	37,240	20,007	1,627	(345)	11,558	46,120
1980	151,444	1,176,160	37,503	16,023	(1,430)	(5,373)	20,817	55,229
1981	168,879	1,301,113	39,516	14,122	395	11,190	16,561	42,092
1982	173,019	1,416,104	40,672	18,713	1,265	15,261	25,677	41,922
1983	175,769	1,293,956	40,915	21,093	(3,862)	28,685	19,682	41,189
1984	178,840	1,150,000	41,750	21,600	(6,000)	(6,600)	20,657	61,730

1/ Apparent utilization equals production + imports - exports.
() denotes negative number

Source: calculated using (29,30).

Appendix table 21--Estate production, 1970-86

Year	Tobacco	Tea	Sugar
		Metric tons	
1960	2,656	11,829	NA
1961	2,663	14,296	NA
1962	2,967	13,339	NA
1963	3,237	11,915	NA
1964	3,360	12,380	NA
1965	3,843	12,958	NA
1966	3,647	15,367	3,357
1967	4,497	16,831	16,420
1968	5,776	15,812	19,867
1969	6,233	16,916	26,853
1970	10,350	18,731	32,749
1971	12,074	18,615	32,387
1972	14,101	20,682	33,850
1973	15,677	23,553	49,087
1974	15,895	23,408	49,472
1975	22,896	26,256	65,046
1976	22,769	28,306	84,407
1977	29,755	31,628	91,774
1978	31,500	31,690	92,846
1979	40,100	32,609	107,902
1980	43,000	29,920	147,423
1981	38,510	31,960	166,643
1982	50,200	38,480	171,794
1983	63,200	30,970	175,292
1984	54,890	37,330	149,898
1985	52,650	39,950	143,818
1986	51,220	38,970	155,805

NA = Not available.

Sources: (141) for 1960-83 data and (142) for 1984-86 data.

Appendix table 22--Smallholder marketed production, 1960-86

Year	Tobacco	Groundnuts	Seed cotton	Rice	Maize
			Metric tons		
1960	12,925	18,769	11,354	6,482	15,071
1961	9,505	23,502	10,817	8,950	14,361
1962	13,459	32,863	17,264	4,601	454
1963	14,797	25,052	9,627	4,603	11,859
1964	11,561	17,700	13,487	3,599	27,955
1965	18,977	22,856	20,577	5,053	21,915
1966	14,972	42,173	13,246	4,047	56,887
1967	11,708	43,179	11,839	4,627	90,741
1968	8,745	22,773	11,608	2,052	83,685
1969	6,935	37,065	18,328	8,469	52,818
1970	11,816	26,499	22,820	9,376	36,424
1971	14,619	36,719	22,326	16,896	37,014
1972	17,731	39,628	22,093	19,995	64,692
1973	15,021	29,285	16,208	17,928	60,118
1974	11,579	28,751	21,401	21,928	65,533
1975	12,242	32,809	17,777	13,929	29,162
1976	14,491	32,589	17,956	24,772	65,106
1977	23,170	18,460	22,635	24,083	89,835
1978	23,732	11,145	24,218	31,103	116,025
1979	19,516	24,296	22,411	20,634	82,404
1980	11,340	31,484	23,114	16,863	91,205
1981	12,756	19,494	21,739	14,629	136,591
1982	8,708	10,682	14,800	12,623	246,086
1983	9,279	10,218	13,368	8,810	244,916
1984	19,163	9,867	32,122	10,201	296,443
1985	20,815	18,251	32,711	10,799	272,275
1986	17,170	53,050	21,999	11,878	111,331

Sources: Data for seed cotton for 1960-71 came from (146), and (144) for 1972-86 data. (141) for other data.

Appendix table 23--Agricultural exports, 1964-85

Year	Tea	Sugar	Groundnuts	Cotton lint	Tobacco
			Metric tons		
1964	12,235	NA	17,373	4,668	13,305
1965	13,198	NA	20,877	5,123	17,644
1966	15,224	NA	16,370	5,333	16,040
1967	16,840	NA	56,268	3,471	14,794
1968	15,792	6	33,065	2,742	16,106
1969	17,247	2,507	34,259	3,814	14,580
1970	17,709	1,545	22,511	5,859	17,382
1971	18,157	3,130	29,191	4,820	20,913
1972	19,855	3,637	35,704	4,787	24,583
1973	22,666	18,002	27,381	2,470	27,464
1974	23,778	23,142	20,654	2,491	27,349
1975	24,851	31,678	25,814	2,192	29,568
1976	29,414	42,237	26,027	2,028	33,724
1977	29,815	57,634	15,210	2,043	37,702
1978	30,583	48,097	6,830	796	40,512
1979	30,995	63,246	13,697	1,437	54,519
1980	31,274	91,092	25,556	3,013	60,311
1981	31,018	121,901	11,121	1,031	39,314
1982	36,418	77,131	7,166	500	43,334
1983	35,833	88,548	4,102	21	43,898
1984	37,141	76,589	1,305	1,851	69,778
1985	34,129	86,626	9,133	7,260	54,366

NA = Not available.

Sources: (144) 1978-85 data; (145) for 1969-77 data, and (142) for 1964-68 data.

Appendix table 24--Tobacco exports, 1964-85

Year	Fire-cured: Northern division	Fire-cured: Southern division	Burley	Flue-cured
		Metric tons		
1964	NA	NA	2,581	912
1965	NA	NA	2,553	1,022
1966	NA	NA	2,116	1,448
1967	NA	NA	1,948	14,742
1968	NA	NA	2,773	1,814
1969	5,366	512	3,462	2,771
1970	9,364	621	5,674	4,676
1971	10,865	1,041	5,669	6,409
1972	12,073	1,388	5,634	8,649
1973	11,641	1,258	6,045	9,990
1974	8,771	461	5,372	10,522
1975	9,788	344	7,997	14,899
1976	11,760	389	6,598	16,170
1977	18,011	585	10,044	19,584
1978	15,360	1,042	10,584	20,850
1979	11,064	1,223	14,911	25,155
1980	9,096	841	16,686	26,301
1981	9,928	897	18,804	19,714
1982	6,521	604	27,602	22,609
1983	7,576	808	41,537	21,659
1984	14,668	1,497	29,981	24,912
1985	12,473	598	30,373	22,281

NA = Not available.

Sources: (144) for 1969-85 data; and (142) for 1964-68 data.

Appendix table 25--Producer and auction tobacco prices, 1970-86

Year	Northern division		Southern division					
	Fire-cured		Fire-cured		Flue-cured		Burley	
	Auction	Producer	Auction	Producer	Auction	Producer	Auction	Producer
	Tambala per Kg.							
1970	58.60	20.46	56.35	19.58	83.67	83.69	62.57	62.58
1971	83.05	22.37	75.86	16.14	90.76	90.76	52.62	52.58
1972	62.26	23.35	55.95	15.85	89.15	89.15	55.56	55.56
1973	59.22	21.27	50.11	15.08	129.26	129.26	80.87	80.87
1974	95.53	20.97	85.87	13.12	148.90	148.90	109.46	109.46
1975	147.58	25.84	138.23	19.11	129.76	129.76	93.32	93.32
1976	178.13	29.45	143.32	23.08	147.84	147.84	103.35	103.35
1977	195.61	33.53	176.77	25.86	172.16	172.16	137.35	137.35
1978	106.95	42.09	79.41	37.57	171.25	171.25	115.72	115.72
1979	108.64	41.20	74.01	38.45	158.31	158.31	107.72	107.72
1980	124.49	41.89	88.28	42.50	100.95	100.95	117.74	117.74
1981	174.97	42.08	131.29	43.30	179.33	179.33	231.61	231.61
1982	343.69	51.00	199.64	40.79	212.99	212.99	216.24	216.24
1983	287.54	82.60	197.39	73.30	187.08	187.08	130.71	130.71
1984	215.34	NA	174.96	NA	221.94	NA	172.48	NA
1985	150.76	NA	93.44	NA	237.57	NA	181.80	NA
1986	225.79	NA	172.63	NA	302.75	NA	291.45	NA

NA = Not available.

Sources: (142,145).

Appendix table 26--Macroeconomic data, 1970-84

Year	Population	Nominal gross domestic product	Exchange rate	Nominal gross domestic product per capita	Real gross domestic product per capita	Gross domestic product deflator	Consumer price index	Total agricultural exports	Total agricultural imports	Total exports
	1,000	Mil. KSh	KSh/US$	KSh	1980 KSh	1980=100		1,000 KSh		
1970	11,290	11,453	7.14	1,014	2,588	39	32	1,268,225	355,143	3,416
1971	11,737	12,703	7.14	1,082	2,640	41	33	1,200,760	518,253	3,638
1972	12,201	15,052	7.14	1,234	3,107	40	36	1,583,674	504,653	4,002
1973	12,684	17,566	7.00	1,385	3,184	44	39	2,096,820	558,365	4,812
1974	13,186	21,214	7.14	1,609	3,112	52	46	2,393,162	682,714	7,144
1975	13,707	23,934	7.34	1,746	2,905	60	54	2,282,579	565,756	7,138
1976	14,250	29,072	8.37	2,040	2,890	71	61	3,930,364	711,697	9,434
1977	14,813	37,198	8.28	2,511	3,044	83	70	7,003,567	769,289	13,004
1978	15,399	40,995	7.73	2,662	3,125	85	81	5,212,361	1,010,915	11,862
1979	16,009	45,437	7.48	2,838	3,133	91	88	5,195,970	805,013	12,002
1980	16,642	52,649	7.42	3,164	3,164	100	100	5,145,243	1,584,185	15,066
1981	17,330	60,468	9.05	3,489	3,163	110	112	5,570,229	1,258,601	15,474
1982	18,046	67,537	10.92	3,742	3,093	121	135	6,457,873	1,580,479	16,940
1983	18,791	77,466	13.31	4,122	3,072	134	150	8,303,122	1,851,094	19,514
1984	19,540	85,881	14.41	4,395	NA	NA	165	10,389,970	3,618,562	22,575

Note: KSh denotes Kenyan shillings and NA = not available.
Source: (35).

Appendix table 26--Macroeconomic data, 1970-84 (cont.)

Year	Total imports	Private consumption	Government consumption	Total consumption	Real consumption per capita	Nominal gross domestic investment	Real gross domestic investment per capita	Gross domestic product at factor cost
	Millions of KSh				1980 Ksh	Mil Ksh	1980 KSh	Mil KSh
1970	3,512	6,893	1,862	8,755	2,408	2,794	769	10,379
1971	4,470	8,213	2,284	10,497	2,678	3,038	775	11,401
1972	4,324	9,358	2,654	12,012	2,773	3,360	776	13,776
1973	5,036	10,366	2,890	13,256	2,694	4,534	921	15,790
1974	8,676	13,668	3,614	17,282	2,868	5,464	907	18,776
1975	8,260	16,328	4,386	20,714	2,778	4,342	582	21,144
1976	9,232	17,910	5,076	22,986	2,662	5,884	681	25,562
1977	11,752	20,680	6,442	27,122	2,631	8,824	856	32,814
1978	15,860	24,824	7,972	32,796	2,616	12,212	974	35,601
1979	14,732	28,896	8,946	37,842	2,689	10,326	734	39,497
1980	21,054	32,178	10,676	42,854	2,575	15,784	948	44,707
1981	20,914	37,203	11,528	48,732	2,515	17,176	887	51,641
1982	20,105	42,554	12,857	55,411	2,280	15,291	629	58,214
1983	20,313	47,270	14,789	62,058	2,199	16,207	574	66,532
1984	24,232	52,777	16,181	68,958	2,134	18,579	575	74,021

Note: KSh denotes Kenyan shillings.
Source: (35).

Appendix table 27--Gross domestic product by sector, 1970-84

Year	Agriculture	Mining	Construction	Manufacturing	Electricity	Transportation/ communications	Trade	Banking/ insurance/ real estate	Ownership of dwellings
				Millions of KSh					
1970	3,455	48	528	1,243	239	817	973	421	639
1971	3,577	59	577	1,434	254	870	1,023	472	715
1972	4,848	44	930	1,559	279	764	1,324	628	1,022
1973	5,600	60	1,032	1,893	290	883	1,435	691	1,197
1974	6,640	64	1,120	2,388	314	1,075	1,958	936	1,349
1975	7,222	68	1,273	2,540	400	1,205	2,298	1,093	1,558
1976	9,689	68	1,342	2,884	462	1,383	2,651	1,361	1,748
1977	13,766	83	1,599	3,599	621	1,572	3,293	1,660	2,064
1978	13,145	88	1,958	4,386	714	2,016	3,787	1,952	2,432
1979	13,577	101	2,389	4,997	832	2,293	4,281	2,353	2,785
1980	14,473	115	2,935	5,903	952	2,556	4,893	2,714	3,224
1981	16,739	118	3,344	6,563	1,166	2,868	5,481	3,376	3,897
1982	19,216	132	3,391	7,446	1,325	3,239	5,988	4,138	4,286
1983	21,851	147	4,253	8,165	1,378	3,905	7,638	4,977	4,885
1984	22,961	170	4,626	9,219	1,314	4,379	9,685	5,703	5,443

Note: Ksh denotes Kenyan shillings.
Source: (35).

Appendix table 27--Gross domestic product by sector, 1970-84 (cont.)

Year	Services	Public administration and defense	Other branches	Gross domestic product statistical discrepancy	Net factor income from abroad	Net indirect taxes
			Millions of KSh			
1970	484	1,530	0	0	(420)	1,074
1971	530	1,890	0	0	(382)	1,302
1972	427	2,211	(261)	0	(434)	1,276
1973	510	2,412	(226)	13	(880)	1,776
1974	561	2,734	(362)	(1)	(846)	2,438
1975	644	3,241	(407)	10	(926)	2,790
1976	759	3,694	(478)	0	(1,362)	3,510
1977	885	4,308	(636)	1	(1,574)	4,384
1978	1,050	5,013	(941)	1	(1,820)	5,394
1979	1,226	5,785	(1,122)	0	(1,680)	5,940
1980	1,551	6,649	(1,257)	0	(1,680)	7,942
1981	1,695	7,818	(1,424)	0	(1,942)	8,827
1982	1,909	8,827	(1,684)	0	(2,787)	9,323
1983	2,118	9,505	(2,290)	0	(2,508)	10,933
1984	2,536	10,558	(2,574)	0	(3,033)	11,860

() denotes a negative number.

Source: (35).

Appendix table 28--Agricultural production, 1970-84

Year	Barley	Coffee	Maize	Milled rice	Sugar	Tea	Wheat
			Metric tons				
1970	16,280	58,300	2,080,000	18,525	153,039	41,077	221,486
1971	18,400	59,500	1,950,000	19,500	151,862	36,290	205,743
1972	16,574	62,048	2,150,000	22,713	115,852	53,322	164,383
1973	31,448	71,190	2,370,000	23,483	169,927	56,578	136,284
1974	31,000	70,103	2,250,000	21,587	201,596	53,440	172,332
1975	32,385	66,152	2,500,000	20,874	197,653	56,730	158,059
1976	36,250	80,303	2,600,000	26,276	206,925	61,984	200,274
1977	46,191	101,218	2,553,000	26,920	221,864	86,291	178,160
1978	34,554	84,332	2,169,000	27,642	285,184	93,373	175,121
1979	75,000	75,082	1,755,000	24,353	349,738	99,275	207,268
1980	82,000	91,334	1,620,000	25,935	467,142	89,893	215,674
1981	80,000	90,746	1,980,000	25,155	428,715	90,941	214,437
1982	85,000	88,393	2,349,000	27,690	359,159	95,576	234,700
1983	100,000	95,300	2,178,000	23,790	381,478	119,300	242,300
1984	85,000	95,000	1,275,000	20,410	419,000	115,060	100,000

Source: (30).

Appendix table 29--Agricultural exports, 1970-84

Year	Barley	Coffee	Maize	Canned pine-apples	Rice	Sisal and other agaves
			Metric tons			
1970	344	53,855	4,709	9,593	673	44,608
1971	306	56,522	101	12,887	375	35,151
1972	78	63,187	18,958	10,555	1,224	37,961
1973	152	75,332	226,996	13,397	4,515	44,953
1974	1,528	71,749	60,481	7,303	95	72,085
1975	0	67,749	120,819	20,090	96	43,992
1976	214	77,587	113,231	29,911	72	29,554
1977	858	96,280	8,136	45,329	366	24,925
1978	208	90,875	23,432	42,082	1,924	26,870
1979	2,200	80,971	120,475	41,048	27	25,959
1980	51	80,334	20	38,452	14	40,415
1981	32	86,170	5,491	40,884	17	36,368
1982	203	101,102	0	39,935	23	40,445
1983	160	90,457	122,514	47,752	29	38,942
1984	160	98,000	0	40,000	0	35,000

Source: (29).

Appendix table 29--Agricultural exports, 1970-84 (cont.)

Year	Sugar	Tea	Wheat	Coffee	Sisal and other agaves	Tea	Total agricultural exports
	Metric tons				1,000 US$		
1970	47	41,633	96,767	62,428	5,258	40,183	177,548
1971	61	41,688	34,734	54,777	4,264	39,001	168,103
1972	72	52,970	60,882	69,406	5,801	49,668	221,710
1973	188	56,259	33,238	101,985	13,671	51,129	299,503
1974	2,133	52,348	17,616	107,593	47,482	56,049	335,036
1975	624	55,396	1,082	95,216	20,286	63,803	310,851
1976	33	63,002	5,357	222,169	9,998	77,987	469,746
1977	5,295	76,658	373	499,618	9,956	181,979	846,148
1978	47	93,282	359	340,375	10,596	177,186	674,390
1979	15,263	105,377	1,088	302,103	12,970	184,449	695,113
1980	55,992	84,455	235	290,541	23,725	171,230	693,429
1981	76,639	84,095	4,231	245,153	19,690	149,395	615,699
1982	12,199	90,516	8,204	266,223	19,978	154,071	591,272
1983	4,073	100,645	261	240,170	18,143	185,130	623,779
1984	100	104,000	0	285,110	14,350	265,300	720,825

Source: (29).

Appendix table 30--Agricultural imports, 1970-84

Year	Animal fat/oil/ grease	Barley	Coffee	Maize	Palm oil	Rice	Sugar
			Metric tons				
1970	7,490	65	154	14,334	6,866	1,149	40,518
1971	12,410	1,541	98	29,078	15,460	10,203	78,362
1972	7,847	65	18	98	14,844	1,873	112,890
1973	8,464	25	0	81	16,968	2	84,235
1974	11,771	0	0	728	13,855	0	76,854
1975	19,915	3,000	1	357	11,990	4	19,779
1976	11,423	0	0	32	32,724	10,001	51,736
1977	8,147	0	0	32	42,195	0	39,496
1978	16,606	7,358	0	80	50,095	11	50,124
1979	10,853	2	9	18	46,299	241	13,592
1980	19,383	5	1	323,873	71,446	13,604	1,902
1981	15,010	718	0	77,394	98,012	11,100	1,909
1982	7,838	0	0	89,055	93,056	42,400	2,409
1983	4,128	0	1	1	71,990	43,015	2,661
1984	8,000	0	0	390,940	75,000	8,500	2,174

Source: (29).

Appendix table 30--Agricultural imports, 1970-84 (cont.)

Year	Tea	Tobacco	Wheat	Palm oil	Sugar	Wheat	Total agricultural imports
	Metric tons			1,000 US$			
1970	6,365	2,796	3,050	1,829	4,582	294	49,719
1971	8,121	2,946	16,395	4,190	10,606	1,160	72,554
1972	5,697	3,419	68,473	3,567	19,764	4,783	70,650
1973	3,896	1,361	78,359	6,757	19,188	10,430	79,755
1974	3,032	3,510	14,066	8,433	24,851	2,996	95,578
1975	3,025	2,397	82,665	6,647	9,605	11,473	77,047
1976	4,153	4,701	1,575	14,659	18,608	391	85,060
1977	5,747	1,532	34,288	24,038	9,662	4,997	92,943
1978	7,763	4,005	92,162	28,056	11,831	15,620	130,795
1979	8,603	1,754	21,467	32,973	3,718	6,621	107,694
1980	6,259	328	49,234	43,962	1,176	13,579	213,502
1981	10,073	444	54,795	38,452	1,228	11,166	139,118
1982	8,261	281	139,326	37,145	917	25,598	144,706
1983	9,281	70	114,633	63,476	833	21,541	139,065
1984	7,000	50	157,170	72,000	750	28,500	251,045

Source: (29).

Appendix table 31--Apparent utilization, 1970-84 1/

Year	Barley	Coffee 2/	Maize	Rice	Sugar	Tea	Wheat
			Metric tons				
1970	16,001	4,599	2,089,625	19,001	193,510	5,809	127,769
1971	19,635	3,076	1,978,977	29,328	230,163	2,723	187,404
1972	16,561	(1,121)	2,131,140	23,362	228,670	6,049	171,974
1973	31,321	(4,142)	2,143,085	18,970	253,974	4,215	181,405
1974	29,472	(1,646)	2,190,247	21,492	276,317	4,124	168,782
1975	35,385	(1,596)	2,379,538	20,782	216,808	4,359	239,642
1976	36,036	2,716	2,486,801	36,205	258,628	3,135	196,492
1977	45,333	4,938	2,544,896	26,554	256,065	15,380	212,075
1978	41,704	(6,543)	2,145,648	25,729	335,261	7,854	266,924
1979	72,802	(5,880)	1,634,543	24,567	348,067	2,501	227,647
1980	81,954	11,001	1,943,853	39,525	413,052	11,697	264,673
1981	80,686	4,576	2,051,903	36,238	353,985	16,919	265,001
1982	84,797	(12,709)	2,438,055	70,067	349,369	13,321	365,822
1983	99,840	4,844	2,055,486	66,776	380,066	27,936	356,672
1984	84,840	(3,000)	1,665,940	28,910	421,074	18,060	257,170

1/ Apparent utilization equals production + imports - exports.
2/ negative numbers are due to the exclusion of stock data which were unavailable.

() denotes a negative number.

Source: (29,30).

Appendix table 32--Agricultural production, 1958/59-1984/85

Year	Estate production		Smallholder production		NCPB maize purchases	Gross wheat production	Total rice production
	Coffee	Tea	Coffee	Tea			
	Metric tons						
1958/59	19,600	NA	3,600	NA	NA	127,100	NA
1959/60	18,800	NA	4,600	NA	NA	108,500	NA
1960/61	20,400	NA	7,300	NA	142,700	84,500	10,885
1961/62	41,400	NA	7,800	NA	147,900	118,700	11,598
1962/63	29,900	NA	10,000	NA	200,900	128,900	12,153
1963/64	28,405	17,800	15,373	300	96,600	143,000	12,037
1964/65	22,393	19,600	14,774	600	105,300	132,200	11,372
1965/66	25,683	19,000	25,523	800	132,600	179,100	14,454
1966/67	25,231	23,800	27,558	1,600	225,800	238,900	13,853
1967/68	13,246	20,600	20,515	2,200	322,400	222,600	17,368
1968/69	22,342	26,400	23,264	3,400	292,100	215,500	20,261
1969/70	26,521	30,300	26,275	5,800	193,700	176,900	25,730
1970/71	28,600	33,100	26,302	8,000	240,100	170,300	27,443
1971/72	29,984	28,200	28,362	8,100	379,000	149,600	31,749
1972/73	38,956	40,200	33,783	13,100	457,400	137,900	34,943
1973/74	31,152	41,500	36,767	15,100	335,400	157,800	34,542
1974/75	29,985	37,300	35,464	16,200	450,800	161,900	31,567
1975/76	37,675	38,800	36,135	17,900	555,700	180,700	36,996
1976/77	49,685	40,500	47,660	21,500	535,000	165,900	43,640
1977/78	33,685	55,600	47,744	30,700	249,200	157,500	38,485
1978/79	26,809	58,600	46,079	34,800	234,000	155,100	34,912
1979/80	39,109	61,600	51,900	37,600	205,000	189,000	37,476
1980/81	34,744	55,900	64,007	32,729	392,900	203,400	39,944
1981/82	34,392	55,100	52,531	35,547	550,000	234,700	38,600
1982/83	33,100	56,100	54,100	46,311	636,000	242,300	36,600
1983/84	49,000	68,800	61,500	47,058	560,600	135,400	36,400
1984/85	28,900	63,900	67,700	62,934	582,900	193,500	39,500

NA = Not available.

Sources: 1963/64-1984/85 coffee and tea data came from (116); all other data came from (117,129).

Appendix table 33--Principal crop production for sale, 1972-85

Year	Wheat	Maize	Rice paddy	Pyrethrum extract	Sugar cane	Cotton	Coffee	Sisal	Tea
					Metric tons				
1972	153,000	373,000	33,800	185	1,062,300	16,900	62,100	41,200	53,300
1973	124,600	440,800	36,100	157	1,545,100	16,200	71,200	58,100	56,800
1974	159,500	365,400	33,200	196	1,719,100	15,000	70,100	86,500	53,400
1975	145,500	487,800	32,100	204	1,654,600	16,100	66,200	43,600	56,700
1976	186,800	564,700	39,300	166	1,652,600	15,800	80,300	35,500	61,900
1977	169,900	423,900	41,400	131	1,888,100	16,300	97,100	32,200	86,300
1978	165,900	236,300	35,800	114	2,349,200	27,200	84,300	31,500	93,400
1979	201,000	241,700	37,500	114	3,147,600	27,600	75,100	36,500	99,300
1980	204,600	217,900	36,400	162	3,972,200	38,100	91,300	46,900	89,900
1981	214,400	472,900	38,700	241	3,822,000	25,500	90,700	41,300	90,900
1982	247,500	571,300	38,600	258	3,107,700	24,400	88,400	50,000	95,600
1983	251,300	637,100	36,600	87	3,285,600	25,800	95,300	49,700	119,300
1984	144,400	560,600	36,400	34	3,611,200	22,800	118,500	51,400	116,200
1985	193,500	582,900	39,000	50	3,463,000	38,000	96,600	45,000	147,100

Source: (117,129).

Appendix table 34--Principal exports, 1973-85

Year	Coffee	Tea	Pyrethrum	Sisal	Maize	Canned pineapples	Raw cotton
				Metric tons			
1973	75,317	51,479	NA	44,903	NA	13,397	NA
1974	71,681	49,599	NA	72,077	NA	8,678	NA
1975	67,728	52,450	4,907	43,986	120,812	20,399	3,005
1976	77,586	59,285	4,170	29,368	113,231	29,905	2,073
1977	94,344	70,220	3,694	24,925	8,136	45,329	763
1978	85,434	84,968	1,656	26,870	23,432	42,082	2,110
1979	77,259	94,023	955	25,959	120,475	41,048	1,886
1980	80,086	74,799	759	40,415	20	38,453	4,020
1981	86,171	75,350	570	36,397	991	40,884	2,557
1982	100,995	80,413	640	40,445	949	39,935	0
1983	90,457	99,938	1,147	38,942	122,514	47,752	726
1984	96,914	91,198	843	39,120	47,434	50,216	131
1985	104,662	126,086	742	39,999	17,683	44,469	1,705

NA = Not available.

Source: (129).

Appendix table 35--Gross marketed output from large and small farms, 1955-85

Year	Large farms	Small farms	Total	Share by small farms
	Mln. KL			Percent
1955	32.8	5.1	37.9	13.5
1960	37.7	9.5	47.2	20.1
1961	35.7	10.4	46.1	22.5
1962	37.1	10.6	47.7	22.2
1963	40.7	11.3	52.0	21.7
1964	35.8	24.6	60.4	40.7
1965	33.3	23.8	57.2	41.6
1966	36.0	32.7	68.8	47.5
1967	32.9	34.1	66.9	51.0
1968	34.4	35.8	70.2	51.0
1969	37.9	38.3	76.2	50.3
1970	41.2	44.2	85.4	51.7
1971	42.1	44.6	86.7	51.4
1972	50.3	55.6	105q9	52.5
1973	60.0	63.3	123.3	51.3
1974	73.4	75.0	148.4	50.6
1975	71.8	90.1	162.0	55.6
1976	122.1	128.0	250.0	51.2
1977	206.0	208.5	414.6	50.3
1978	147.2	178.6	325.8	54.8
1979	148.2	165.2	313.4	52.7
1980	168.8	184.5	353.3	52.2
1981	178.6	208.3	386.9	53.8
1982	216.7	232.2	448.9	51.7
1983	271.3	284.1	555.4	51.2
1984	386.2	402.5	788.8	51.0
1985	354.9	406.7	752.6	54.0

Note: KL denotes Kenyan Pounds, which is equal to 20 Kenyan Shillings.

Sources: (117,129).

Appendix table 36--Coffee production, 1959-84

Year	Estate	Small-holder	Total	Share by smallholders
	--1,000 metric tons--			Percent
1959	19.6	3.6	23.2	15.5
1960	18.8	4.6	23.4	19.7
1961	20.4	7.3	27.7	26.4
1962	41.4	7.8	49.2	15.9
1963	29.9	10.0	39.9	25.1
1964	24.8	16.6	41.4	40.4
1965	28.1	16.2	39.3	41.2
1966	28.4	28.5	56.9	50.1
1967	19.2	28.8	48.0	60.0
1968	18.8	20.8	39.6	52.5
1969	26.8	25.6	52.4	48.9
1970	27.9	30.4	58.3	52.1
1971	31.5	28.0	59.5	47.1
1972	34.2	27.8	62.0	44.8
1973	35.1	36.1	71.2	50.7
1974	30.8	39.3	70.1	56.1
1975	31.2	35.0	66.2	52.9
1976	42.6	37.7	80.3	47.0
1977	51.5	45.6	97.1	47.0
1978	36.6	47.7	84.3	56.6
1979	26.5	46.6	75.1	62.0
1980	39.3	52.0	91.3	57.0
1981	32.7	58.0	90.7	63.9
1982	34.0	52.0	88.0	59.1
1983	33.0	52.0	95.0	54.7
1984	54.0	75.0	119.0	63.0

Source: (129,131).

Appendix table 37--Coffee data, 1963/64-84/85

Year	Smallholder production	Total production	Total exports	Share of smallholder production in exports
	Metric tons			Percent
1963/64	15,373	44,151	42,446	36.22
1964/65	14,774	39,440	38,441	38.43
1965/66	25,523	52,133	54,458	46.87
1966/67	27,558	53,708	50,454	54.62
1967/68	20,515	39,224	37,640	54.50
1968/69	23,264	48,147	51,255	45.39
1969/70	26,275	54,748	53,855	48.79
1970/71	26,302	59,901	56,522	46.53
1971/72	28,362	61,189	63,187	44.89
1972/73	33,783	75,961	75,317	44.85
1973/74	36,767	73,280	71,681	51.29
1974/75	35,464	66,121	67,728	52.36
1975/76	36,135	74,596	77,586	46.57
1976/77	47,660	97,345	94,344	50.52
1977/78	47,744	81,429	85,434	55.88
1978/79	46,079	72,888	77,259	59.64
1979/80	51,900	91,009	80,086	64.81
1980/81	64,007	98,751	86,171	74.28
1981/82	52,531	86,923	100,995	52.01
1982/83	52,469	85,450	90,457	58.00
1983/84	74,683	128,941	96,914	77.06
1984/85 1/	64,717	93,639	76,240	67.25

1/ The 1984/85 export figure was estimated by converting exports in bags to metric tons at the rate of 60 kilograms per bag using data from appendix table 38.

NA = Not available.

Sources: (116) for production data and (129) for export data.

Appendix table 38--Coffee data, 1968/69-84/85

Year	Total production	Exports	Gross stocks	Net stocks	Domestic consumption
		1,000 bags 1/			
1968/69	821	777	127	(73)	19
1969/70	954	799	152	(48)	21
1970/71	1,036	953	286	86	23
1971/72	990	1,079	346	146	22
1972/73	1,261	1,200	235	35	20
1973/74	1,244	1,224	276	76	20
1974/75	1,171	1,088	276	76	20
1975/76	1,225	1,343	339	139	21
1976/77	1,699	1,428	200	0	20
1977/78	1,356	1,391	451	251	43
1978/79	1,232	1,231	373	173	40
1979/80	1,651	1,366	334	134	50
1980/81	1,715	1,205	569	369	68
1981/82	1,474	1,702	1,011	811	36
1982/83	1,551	1,427	747	547	50
1983/84	1,992	1,516	821	621	51
1984/85	1,558	1,604	1,246	1,006	50

1/ One bag equals 60 kilograms.

() denotes a negative number.

Source: (121).

Appendix table 39--Tea data, 1963-858

Year	Smallholder production	Total production	Total exports	Share of smallholder production in exports
	Metric tons			Percent
1963	300	18,100	15,400	1.95
1964	600	20,200	16,400	3.66
1965	800	19,800	16,800	4.76
1966	1,600	25,400	23,300	6.87
1967	2,200	22,800	18,100	12.15
1968	3,400	29,800	27,800	12.23
1969	5,800	36,100	32,900	17.63
1970	8,000	41,100	33,800	23.67
1971	8,100	36,200	30,100	26.91
1972	13,100	53,300	49,500	26.46
1973	15,100	56,600	50,500	29.90
1974	16,200	53,400	49,600	32.66
1975	17,900	56,700	52,600	34.03
1976	21,500	62,000	59,200	36.32
1977	30,700	86,300	75,300	40.77
1978	34,800	93,400	80,800	43.07
1979	37,600	99,300	89,000	42.25
1980	34,000	89,900	74,800	45.45
1981	35,800	90,900	75,500	47.42
1982	39,900	96,000	80,400	49.63
1983	51,000	119,700	100,600	50.70
1984	52,700	116,500	91,300	57.72
1985	71,339	147,094	NA	NA

NA = Not available.

Sources: (116,121,129).

Appendix table 40--Coffee and tea data, 1950-85

Year	Coffee exports	Tea exports	Coffee export index	Tea export index
	---Metric tons---		1980=100	
1950	9,610	3,740	12	5
1955	20,022	5,984	5	8
1958	25,628	8,228	32	11
1959	26,428	9,724	33	13
1960	28,030	11,220	35	15
1961	32,835	9,724	41	13
1962	31,234	13,464	39	18
1963	37,640	15,400	47	22
1964	42,446	16,400	53	24
1965	38,441	16,800	48	23
1966	54,458	23,300	68	32
1967	50,454	18,100	63	27
1968	37,640	27,800	47	38
1969	51,255	32,900	64	46
1970	53,855	33,800	67	49
1971	56,522	30,100	70	46
1972	63,187	49,500	79	64
1973	75,317	50,500	94	69
1974	71,681	49,600	90	67
1975	67,728	52,600	84	71
1976	77,586	59,200	97	80
1977	94,344	75,300	118	95
1978	85,434	80,800	107	115
1979	77,259	89,000	98	127
1980	80,086	74,800	100	100
1981	86,171	75,500	110	102
1982	100,995	80,400	126	108
1983	90,457	100,600	113	135
1984	96,914	91,300	122	131
1985	104,913	121,176	131	162

Sources: 1970-85 coffee data and 1963-84 tea export data are from (116,129) All other data are derived using export indices from (14), and 1980 data from (35).

Appendix table 41--Macroeconomic data, 1970-84

Year	Population	Nominal gross domestic product	Exchange rate	Nominal gross domestic product per capita	Real gross domestic product per capita	Gross domestic product deflator	Consumer price index	Total agricultural exports	Total agricultural imports	Total exports
	1,000	Mln. B	B/US$	B	1980 B	----1980=100----		------1,000 B------		Mil. B
1970	36,370	136,100	20.80	3,742	9,645	38.80	39.50	10,274,910	1,700,358	22,700
1971	37,322	144,600	20.80	3,874	9,833	39.40	39.60	11,522,140	2,293,512	25,200
1972	38,300	164,600	20.80	4,298	10,041	42.80	41.60	14,473,330	2,600,873	31,900
1973	39,303	216,500	20.62	5,508	10,717	51.40	48.00	19,255,430	3,210,349	42,500
1974	40,332	271,400	20.38	6,729	11,013	61.10	59.70	34,048,800	4,152,262	60,600
1975	41,388	298,800	20.38	7,219	11,496	62.80	62.90	30,372,900	4,585,764	57,000
1976	42,383	337,600	20.40	7,965	12,198	65.30	65.50	40,324,840	5,555,083	71,200
1977	43,402	393,000	20.40	9,055	12,771	70.90	70.40	46,090,840	7,433,495	82,200
1978	44,414	470,000	20.34	10,582	13,743	77.00	76.00	47,183,940	6,904,052	101,000
1979	45,431	556,200	20.42	12,243	14,252	85.90	83.50	59,129,870	8,774,106	131,800
1980	46,455	684,900	20.48	14,743	14,743	100.00	100.00	68,472,340	12,986,490	167,700
1981	47,343	786,200	21.82	16,607	15,376	108.00	112.70	87,061,260	13,243,820	195,800
1982	48,247	846,100	23.00	17,537	15,714	111.60	118.60	90,884,150	11,743,890	210,800
1983	49,169	924,300	23.00	18,798	16,318	115.20	123.00	77,600,090	13,304,650	207,000
1984	50,023	991,800	23.64	19,827	17,033	116.40	124.10	87,789,690	14,803,190	241,800

Note: B denotes Thai bahts.
Source: (35).

Appendix table 41--Macroeconomic data, 1970-84 (cont.)

Year	Total imports	Private consumption	Government consumption	Total consumption	Real consumption per capita	Gross domestic investment	Real gross domestic investment per capita	Gross domestic product at factor cost
	Millions of baht				1980 B	Mln. B	1980 B	Mln. B
1970	29,300	92,400	15,600	108,000	7,518	35,600	2,478	136,100
1971	29,700	99,100	17,000	116,100	7,855	34,900	2,361	144,600
1972	33,800	110,300	17,900	128,200	8,046	33,700	2,115	164,600
1973	46,100	138,000	21,200	159,200	8,439	51,700	2,740	216,500
1974	68,100	178,000	26,000	204,000	8,472	67,400	2,799	271,400
1975	70,800	198,500	31,000	229,500	8,816	75,800	2,912	298,800
1976	79,400	225,000	37,100	262,100	9,441	78,400	2,824	337,600
1977	103,400	260,500	41,700	302,200	9,890	102,200	3,345	393,000
1978	119,900	300,500	53,600	354,100	10,490	127,000	3,762	470,000
1979	165,800	353,300	66,900	420,200	11,077	160,300	4,226	556,200
1980	204,600	438,000	82,000	520,000	11,194	186,300	4,010	684,900
1981	233,800	511,500	95,700	607,200	11,380	194,500	3,645	786,200
1982	211,800	554,700	110,900	665,600	11,632	177,800	3,107	846,100
1983	254,100	618,600	120,700	739,300	12,224	212,300	3,510	924,300
1984	263,800	652,000	133,000	785,000	12,645	228,800	3,686	991,800

Note: B denotes Thai bahts.
Source: (35).

Appendix table 42--Gross domestic product by sector, 1970-84

Year	Agriculture	Mining	Construction	Manufacturing	Electricity/ gas/ water	Transportation/ communications
			Millions of baht			
1970	38,500	2,800	8,300	21,800	1,600	8,600
1971	40,800	3,000	7,300	24,900	1,900	9,000
1972	49,900	2,900	7,200	27,900	2,300	10,500
1973	73,200	2,900	8,300	35,600	2,700	13,200
1974	84,700	4,500	10,700	49,400	2,800	16,000
1975	94,100	4,100	12,900	53,900	3,300	18,800
1976	104,700	5,200	15,800	63,000	3,700	21,800
1977	110,900	8,100	20,200	74,700	4,400	24,700
1978	129,100	10,600	24,800	89,100	5,200	29,600
1979	147,100	12,600	29,200	109,700	6,100	37,800
1980	173,800	14,500	39,900	134,500	6,300	45,300
1981	187,900	13,400	42,000	158,300	10,700	57,300
1982	188,700	14,800	43,000	164,700	14,500	63,100
1983	204,400	16,500	47,100	176,200	16,300	73,700
1984	198,300	NA	NA	278,000	NA	NA

Note: B denotes Thai bahts and NA = not available.
Source: (35).

Appendix table 42--Gross domestic product by sector, 1970-84 (cont.)

Year	Trade	Banking/ insurance/ real estate	Ownership of dwellings	Services	Public administration & defense	Net factor income from abroad	Net indirect taxes
			Millions of baht				
1970	25,900	5,600	2,900	13,900	6,200	300	15,800
1971	26,300	6,300	3,100	15,400	6,600	0	16,200
1972	29,800	6,900	3,200	16,800	7,200	(300)	17,800
1973	41,000	8,800	3,600	18,900	8,300	(400)	22,700
1974	53,900	12,800	4,200	21,900	10,500	1,100	32,400
1975	54,700	14,500	4,400	25,800	12,300	(200)	31,100
1976	59,400	16,100	4,800	29,500	13,600	(1,300)	33,400
1977	74,900	19,600	5,300	35,400	14,800	(2,000)	43,700
1978	90,100	24,600	5,900	43,100	17,900	(5,400)	51,700
1979	102,900	31,400	6,300	51,500	21,600	(9,800)	60,900
1980	128,700	41,900	7,400	64,300	28,300	(12,500)	71,500
1981	150,300	52,000	8,400	75,200	30,700	(21,800)	79,900
1982	159,900	61,000	9,900	89,200	37,300	(26,400)	83,900
1983	165,800	71,700	11,200	98,800	42,600	(25,400)	101,000
1984	NA	NA	NA	515,500	NA	(9,200)	111,400

Note: NA = Not available and () denotes a negative number.
Source: (35).

Appendix table 43--Agricultural production, 1970-84

Year	Maize	Milk	Milled rice	Rubber	Soybeans	Sugar	Tobacco
				Metric tons			
1970	1,938,200	8,100	9,002,500	287,200	50,400	617,000	93,000
1971	2,300,000	9,200	8,933,600	316,300	54,300	809,000	49,000
1972	1,315,000	9,700	8,068,451	336,900	72,400	840,000	51,300
1973	2,339,000	11,000	9,684,351	367,700	104,164	988,000	45,400
1974	2,500,000	11,700	8,700,900	382,100	110,448	1,318,200	56,000
1975	2,863,168	12,000	9,945,001	348,700	113,945	1,489,200	62,765
1976	2,675,195	13,200	9,794,201	393,000	113,604	2,080,000	67,672
1977	1,676,518	15,500	9,048,650	430,885	96,295	2,982,000	76,752
1978	2,790,575	18,500	11,355,500	466,968	158,929	2,224,000	83,350
1979	2,863,201	21,500	10,242,700	534,300	102,149	2,512,000	73,325
1980	2,997,880	24,500	11,289,200	465,200	100,022	1,848,000	84,272
1981	3,448,540	27,600	11,553,100	507,700	131,527	2,441,000	75,230
1982	3,002,304	33,628	10,971,020	576,000	113,392	3,780,000	86,020
1983	3,552,390	41,600	12,047,760	587,000	172,156	3,168,000	93,000
1984	4,066,000	45,000	11,180,000	650,000	192,000	3,250,000	90,000

Source: (30).

Appendix table 44--Agricultural exports, 1970-84

Year	Maize	Milk	Rice	Rubber	Soybeans	Sugar
			Metric tons			
1970	1,371,474	904	1,063,616	275,611	6,290	56,682
1971	1,806,035	2,314	1,591,384	307,871	6,099	174,574
1972	1,757,579	2,707	2,112,813	317,696	7,240	421,617
1973	1,306,182	5,148	848,717	390,513	13,715	275,443
1974	2,190,309	5,028	1,046,019	362,563	8,612	444,067
1975	2,072,279	3,887	951,260	334,737	24,055	595,572
1976	2,388,183	5,460	1,963,546	373,398	8,132	1,124,301
1977	1,517,878	8,015	2,931,518	404,300	11,506	1,657,489
1978	1,954,578	9,832	1,606,745	442,191	8,099	1,040,100
1979	1,988,150	12,934	2,796,868	520,953	9,715	1,189,980
1980	2,175,331	12,356	2,796,964	455,006	3,394	451,698
1981	2,547,420	8,286	3,027,342	472,122	2,531	1,120,334
1982	2,801,242	10,938	3,782,775	545,080	1,295	2,215,922
1983	2,630,045	9,552	3,476,230	555,062	1,035	1,553,495
1984	3,116,742	8,581	4,618,532	594,100	995	1,240,200

Source: (29).

Appendix table 44--Agricultural exports, 1970-84 (cont.)

Year	Tobacco	Wheat	Maize	Rice	Rubber	Total agricultural exports
	-Metric tons-			----------1,000 US$----------		
1970	11,078	2,991	89,057	120,990	107,286	493,986
1971	13,098	2,060	104,824	139,909	91,580	553,949
1972	18,179	2,274	95,209	213,307	89,536	695,833
1973	16,594	5,007	138,769	174,332	221,772	933,823
1974	15,092	12,512	292,743	484,259	247,108	1,671,107
1975	17,585	328	275,533	287,176	170,465	1,490,402
1976	22,027	83	274,418	421,723	259,663	1,976,708
1977	27,981	1,306	161,631	656,027	302,159	2,259,355
1978	34,810	2,322	208,080	512,654	396,384	2,320,217
1979	34,049	4,293	272,656	763,622	604,887	2,895,826
1980	39,057	5,089	351,674	952,712	603,191	3,344,029
1981	36,821	5,638	378,335	1,211,221	497,994	3,989,975
1982	38,260	17,982	357,861	978,673	413,323	3,951,485
1983	35,560	10,966	364,641	876,394	512,466	3,373,917
1984	31,520	6,945	426,552	1,100,929	551,900	3,713,765

Source: (29).

Appendix table 45--Agricultural imports, 1970-84

Year	Cotton lint	Maize	Milk	Rubber	Soybeans	Sugar
			Metric tons			
1970	34,170	83	43,554	192	0	4
1971	48,011	3,267	30,463	242	0	1
1972	48,530	6,201	27,211	153	0	0
1973	84,900	960	37,665	110	0	0
1974	62,329	53	25,901	52	0	0
1975	77,001	73	28,992	0	0	0
1976	82,668	688	34,193	2,203	0	0
1977	90,650	93	41,128	1,885	4,003	0
1978	69,722	81	43,916	0	10,808	0
1979	92,115	92	42,780	1	5	0
1980	73,665	136	36,568	44	15,297	85,437
1981	75,781	270	45,391	74	15	2
1982	56,544	1,122	30,843	284	3,218	0
1983	109,730	815	47,408	2,077	0	0
1984	116,000	500	48,361	0	107	0

Source: (29).

Appendix table 45--Agricultural imports, 1970-84 (cont.)

Year	Tobacco	Wheat	Cotton lint	Milk	Tobacco	Total agricultural imports
	---Metric tons---		----------1,000 US$----------			
1970	7,684	80,665	19,070	16,784	13,425	81,748
1971	13,334	63,706	32,676	13,928	24,380	110,265
1972	10,946	96,753	34,957	19,344	28,273	125,042
1973	6,846	90,574	63,863	22,098	18,800	155,691
1974	9,630	97,087	71,914	26,421	30,840	203,792
1975	8,907	62,119	81,964	32,402	34,200	225,024
1976	7,314	136,465	106,226	27,667	26,389	272,308
1977	11,399	89,709	141,665	35,055	44,098	364,387
1978	8,658	128,076	99,516	40,888	35,913	339,499
1979	9,252	168,678	133,241	51,162	39,734	429,703
1980	10,618	211,547	123,555	54,278	49,773	634,230
1981	7,929	203,936	146,955	87,343	39,724	606,958
1982	12,820	150,386	88,225	62,673	71,275	510,604
1983	4,634	222,907	158,957	81,054	26,202	578,463
1984	6,947	148,185	182,293	76,324	41,339	626,219

Source: (29).

Appendix table 46--Apparent utilization, 1970-84 1/

Year	Maize 2/	Milk	Rice	Rubber 2/	Soybeans	Sugar	Tobacco	Wheat
				Metric tons				
1970	566,809	50,750	7,938,884	11,781	44,110	560,322	89,606	77,674
1971	497,232	37,349	7,342,216	8,671	48,201	634,427	49,236	61,646
1972	(436,378)	34,204	5,955,638	19,357	65,160	418,383	44,067	94,479
1973	1,033,778	43,517	8,835,634	(22,703)	90,449	712,557	35,652	85,567
1974	309,744	32,573	7,654,881	19,589	101,836	874,133	50,538	84,575
1975	790,962	37,105	8,993,741	13,963	89,890	893,628	54,087	61,791
1976	287,700	41,933	7,830,655	21,805	105,472	955,699	52,959	136,382
1977	158,733	48,613	6,117,132	28,470	88,792	1,324,511	60,170	88,403
1978	836,078	52,584	9,748,756	24,777	161,638	1,183,900	57,198	125,754
1979	875,143	51,346	7,445,833	13,348	92,439	1,322,020	48,528	164,385
1980	822,685	48,712	8,492,237	10,238	111,925	1,481,739	55,833	206,458
1981	901,390	64,705	8,525,759	35,652	129,011	1,320,668	46,338	198,298
1982	202,184	53,533	7,188,248	31,204	115,315	1,564,078	60,580	132,404
1983	923,160	79,456	8,571,526	34,015	171,121	1,614,505	62,074	211,941
1984	949,758	84,780	6,561,469	55,900	191,112	2,009,800	65,427	141,240

1/ Apparent Utilization equals production + imports - exports.

2/ ( ) denotes a negative number. Negative values are due to the exclusion of stock data, which were unavailable.

Source: (29,30).

Appendix table 47--Macroeconomic data, 1970-84

Year	Population	Nominal gross domestic product	Exchange rate	Nominal gross domestic product per capita	Real gross domestic product per capita	Gross domestic product deflator	Consumer price index	Total agricultural exports	Total agricultural exports	Total exports
	1,000	Mln. M$	M$/US$	M$	1980 M$	1980=100		1,000 M$		Mil. M$
1970	10,863	12,856	3.06	1,183	2,415	49.0	56.4	2,283,745	936,620	5,404
1971	11,138	13,531	3.05	1,215	2,489	48.8	57.3	2,124,690	903,972	5,250
1972	11,419	14,853	2.82	1,301	2,660	48.9	59.2	1,964,457	962,576	5,129
1973	11,708	19,556	2.44	1,670	2,895	57.7	65.4	3,381,432	1,308,620	7,779
1974	12,004	23,875	2.41	1,989	3,060	65.0	76.8	4,646,502	1,849,435	11,060
1975	12,307	23,326	2.40	1,895	3,008	63.0	80.2	4,010,343	1,592,387	10,187
1976	12,609	29,335	2.54	2,327	3,277	71.0	82.3	5,089,615	1,734,735	14,576
1977	12,918	33,779	2.46	2,615	3,445	75.9	86.2	6,065,826	2,029,966	16,240
1978	13,230	37,886	2.32	2,864	3,434	83.4	90.5	6,428,431	2,396,571	18,585
1979	13,548	46,424	2.19	3,427	3,665	93.5	93.7	8,286,632	2,444,746	26,004
1980	13,763	53,538	2.18	3,890	3,890	100.0	100.0	8,606,204	2,964,617	30,676
1981	14,104	57,821	2.30	4,100	4,059	101.0	109.7	8,016,008	3,545,863	30,154
1982	14,454	62,695	2.34	4,338	4,183	103.7	116.1	6,886,015	3,424,836	31,846
1983	14,813	69,910	2.32	4,720	4,338	108.8	120.4	8,548,777	3,451,283	36,389
1984	15,270	79,634	2.34	5,215	4,527	115.2	125.1	10,892,870	3,653,818	43,280

Note: M$ denotes Malaysian ringgits.
Source: (35).

Appendix table 47--Macroeconomic data, 1970-84 (cont.)

Year	Total imports	Private consumption	Government consumption	Total consumption	Real consumption per capita	Gross domestic investment	Real gross investment per capita	Gross domestic product at factor cost
	Millions of ringgits				1980 M$	Mil. M$	1980 M$	Mil. M$
1970	4,865	7,417	2,018	9,435	1,540	2,882	470	12,856
1971	5,053	8,016	2,284	10,300	1,614	3,034	475	13,531
1972	5,309	8,696	2,882	11,578	1,713	3,455	511	14,853
1973	6,708	10,401	3,088	13,489	1,762	4,996	652	19,556
1974	10,982	12,746	3,701	16,447	1,784	7,351	797	23,875
1975	10,064	13,172	4,130	17,302	1,753	5,900	598	23,326
1976	11,612	14,919	4,527	19,446	1,874	6,925	667	29,335
1977	13,779	16,941	5,671	22,612	2,031	8,705	782	33,779
1978	16,477	19,584	6,090	25,674	2,144	10,104	844	37,886
1979	21,884	22,406	6,475	28,881	2,275	13,423	1,057	46,424
1980	29,342	26,946	8,811	35,757	2,598	16,447	1,195	53,538
1981	33,717	30,594	10,425	41,019	2,651	20,365	1,316	57,821
1982	37,300	33,226	11,469	44,695	2,663	23,454	1,398	62,695
1983	39,996	35,998	12,156	48,154	2,700	25,363	1,422	69,910
1984	41,639	39,594	11,741	51,335	2,687	26,658	1,396	79,634

Note: M$ denotes Malaysian ringgits.
Source: (35).

Appendix table 48--Gross domestic product by sector, 1970-84

Year	Agriculture	Mining	Construction	Manufacturing	Electricity/ gas/ water	Transportation/ communication	Trade	Banking/ insurance/ real estate	Services	Net factor income from abroad	Net indirect taxes
	Millions of ringgits										
1970	3,667	1,053	477	1,531	185	539	1,788	1,400	2,216	(339)	1,299
1971	3,504	1,109	541	1,720	201	592	1,849	1,513	2,502	(345)	1,884
1972	3,824	1,322	573	1,962	220	692	2,025	1,646	2,589	(358)	2,130
1973	5,155	1,342	770	2,941	243	816	2,378	1,833	4,077	(640)	2,868
1974	7,061	2,152	972	4,024	270	1,022	2,693	2,049	3,633	(983)	3,738
1975	6,527	2,203	845	3,931	324	1,227	2,766	2,266	3,237	(701)	3,366
1976	7,857	2,844	1,039	5,203	391	1,388	3,131	2,522	4,960	(1,074)	4,409
1977	8,682	3,347	1,245	6,212	432	1,606	3,601	2,836	5,817	(1,250)	5,449
1978	9,513	3,912	1,572	7,189	530	1,867	4,156	3,177	5,970	(1,700)	6,099
1979	10,988	5,056	1,917	8,992	771	2,183	4,839	3,559	8,119	(2,070)	7,671
1980	11,680	5,826	2,399	11,002	937	2,812	5,937	4,066	8,881	(1,918)	9,066
1981	11,962	5,648	2,776	11,542	1,443	3,397	6,952	4,827	9,274	(2,011)	8,836
1982	12,807	5,770	3,148	11,419	1,514	3,680	7,903	5,478	10,977	(2,889)	8,758
1983	13,555	6,569	3,642	12,935	1,689	3,963	9,046	6,280	12,232	(4,411)	10,425
1984	NA	NA	NA	NA	NA	NA	NA	NA	NA	(5,318)	12,578

NA = Not available.
Source: (35).

Appendix table 49--Agricultural production, 1970-84

Year	Maize	Milk	Palm oil	Milled rice	Rubber	Soy-beans	Sugar	Tobacco
				Metric tons				
1970	16,208	106,387	430,958	1,092,920	1,269,204	240	0	2,625
1971	12,083	97,733	588,940	1,180,999	1,318,524	90	0	3,921
1972	15,000	94,743	728,679	1,194,261	1,304,317	120	11,000	7,197
1973	15,519	112,474	812,329	1,286,964	1,542,195	110	18,000	6,027
1974	23,257	107,980	1,031,000	1,361,750	1,549,304	500	34,000	7,620
1975	14,318	112,114	1,161,000	1,298,050	1,478,181	180	53,000	9,184
1976	25,500	120,472	1,380,000	1,296,750	1,640,365	350	63,000	4,669
1977	18,000	124,962	1,614,000	1,233,700	1,613,492	95	81,000	7,275
1978	11,900	137,148	1,785,400	973,700	1,606,500	80	69,000	9,700
1979	8,000	149,072	2,188,300	1,361,750	1,617,378	20	75,000	7,535
1980	8,000	154,329	2,575,865	1,168,700	1,529,994	35	40,000	9,475
1981	8,000	150,965	2,822,144	1,415,050	1,510,221	70	49,000	7,200
1982	9,000	159,290	3,510,690	1,190,800	1,516,585	75	62,000	8,620
1983	20,000	153,640	3,018,000	1,178,450	1,530,000	75	70,500	8,701
1984	22,000	154,960	3,700,000	1,241,500	1,625,000	75	74,000	7,390

Source: (30).

Appendix table 50--Agricultural exports, 1970-84

Year	Maize	Milk	Palm oil	Palm kernel oil	Rubber	Soybeans
			Metric tons			
1970	113	9,386	401,931	2,268	1,345,947	23
1971	341	5,351	573,355	4,799	1,390,981	19
1972	3,442	6,056	696,984	49,049	1,365,600	43
1973	1,969	9,863	797,805	66,467	1,638,995	46
1974	502	7,036	912,342	92,336	1,570,724	113
1975	456	8,527	1,196,975	109,148	1,437,186	14
1976	649	8,662	1,310,975	123,609	1,627,220	16
1977	610	10,786	1,385,157	104,981	1,660,595	10
1978	586	12,029	1,454,306	132,085	1,614,203	10
1979	435	13,043	1,808,757	203,886	1,650,446	19
1980	410	13,470	2,136,239	218,937	1,525,769	415
1981	443	11,385	2,361,133	242,294	1,483,996	9,119
1982	705	11,051	2,699,988	334,164	1,378,107	2,389
1983	2,035	11,049	2,912,876	371,233	1,562,771	1,500
1984	0	12,200	2,957,441	390,700	1,588,500	1,200

Source: (29).

Appendix table 50--Agricultural exports, 1970-84 (cont.)

Year	Sugar	Tobacco	Wheat	Palm kernal oil	Palm oil	Rubber	Total agricultural exports
	Metric tons			1,000 US$			
1970	2,085	389	14,529	684	86,324	563,281	746,078
1971	5,448	480	2,777	1,266	124,641	478,682	696,163
1972	10,248	366	2,911	10,716	128,638	460,684	696,616
1973	9,208	149	2,967	22,954	191,631	1,030,061	1,384,131
1974	11,966	24	20	68,472	454,779	1,199,755	1,930,412
1975	34,610	197	626	45,361	562,896	846,237	1,669,585
1976	33,462	191	6,413	47,731	470,756	1,226,426	2,002,209
1977	22,075	149	7,377	55,660	716,999	1,373,773	2,464,781
1978	17,753	3	14,910	81,563	790,337	1,556,595	2,775,661
1979	16,278	3	9,742	176,903	1,091,735	2,048,028	3,787,309
1980	15,369	92	15,526	139,335	1,155,920	2,121,394	3,953,240
1981	55,260	3	30,386	129,372	1,183,204	1,612,134	3,479,170
1982	31,119	1	33,147	143,238	1,137,555	1,137,149	2,949,043
1983	70,535	6	48,294	211,772	1,282,114	1,578,517	3,683,230
1984	117,396	1	50,279	355,500	1,940,400	1,589,000	4,647,129

Source: (29).

Appendix table 51--Agricultural imports, 1970-84

Year	Cotton lint	Maize	Milk	Palm oil	Rice	Rubber	Soybeans
	Metric tons						
1970	5,607	212,151	42,658	1,626	355,450	41,418	22,925
1971	7,340	216,052	36,623	4,116	235,478	34,354	21,031
1972	11,491	214,962	37,104	412	213,081	33,941	23,410
1973	19,555	230,191	44,835	126	298,568	47,428	22,417
1974	20,273	243,851	46,701	610	333,768	39,269	15,464
1975	21,960	275,799	50,779	1,151	145,998	35,458	17,505
1976	31,247	269,581	51,462	100	210,275	40,225	21,318
1977	30,546	288,751	60,551	93	283,317	46,436	22,844
1978	32,834	310,386	69,491	154	408,541	48,981	27,584
1979	31,441	436,233	72,172	495	238,089	40,836	27,316
1980	29,019	430,712	75,752	735	167,593	43,949	90,099
1981	29,885	476,755	79,265	1,035	316,664	29,996	190,023
1982	28,495	683,297	65,602	534	403,038	23,450	178,590
1983	24,436	777,533	83,007	9,270	358,256	24,984	174,171
1984	30,000	953,000	79,000	6,500	500,000	57,000	158,000

Source: (29).

Appendix table 51--Agricultural imports, 1970-84 (cont.)

Year	Sugar	Tobacco	Wheat	Rice	Sugar	Wheat	Total agricultural imports
	Metric tons				1,000 US$		
1970	397,559	5,946	357,184	42,011	35,814	23,115	305,985
1971	305,849	5,285	326,268	23,961	34,312	23,254	296,190
1972	359,209	3,413	399,838	26,893	54,123	29,103	341,339
1973	352,833	4,718	423,430	85,558	68,632	44,909	535,661
1974	355,164	7,288	411,704	148,705	102,212	87,416	768,357
1975	353,864	1,844	304,317	62,630	124,456	56,154	662,942
1976	336,507	3,518	432,898	54,238	103,408	66,939	682,429
1977	408,030	6,459	503,097	71,710	97,494	63,181	824,854
1978	395,154	6,459	528,736	138,937	105,773	76,714	1,034,789
1979	417,581	4,189	503,364	84,951	117,781	85,806	1,117,343
1980	490,613	4,241	487,634	59,537	200,257	99,486	1,361,790
1981	451,645	3,270	503,397	129,382	214,013	106,215	1,539,003
1982	420,544	3,204	543,079	141,419	141,654	99,667	1,466,739
1983	543,037	1,582	591,967	101,708	159,593	107,859	1,486,981
1984	560,926	4,910	602,417	141,000	156,603	107,115	1,558,796

Source: (29).

Appendix table 52--Apparent utilization, 1970-84 1/

Year	Maize	Milk	Rubber 2/	Soybeans	Sugar	Tobacco	Wheat
			Metric tons				
1970	228,246	139,659	(35,325)	23,142	395,474	8,182	342,655
1971	227,794	129,005	(38,103)	21,102	300,401	8,726	323,491
1972	226,520	125,791	(27,342)	23,487	359,961	10,244	396,927
1973	243,741	147,446	(49,372)	22,481	361,625	10,596	420,463
1974	266,606	147,645	17,849	15,851	377,198	14,884	411,684
1975	289,661	154,366	76,453	17,671	372,254	10,831	303,691
1976	294,432	163,272	53,370	21,652	366,045	7,996	426,485
1977	306,141	174,727	(667)	22,929	466,955	13,585	495,720
1978	321,700	194,610	41,278	27,654	446,401	16,156	513,826
1979	443,798	208,201	7,768	27,317	476,303	11,721	493,622
1980	438,302	216,611	48,174	89,719	515,244	13,624	472,108
1981	484,312	218,845	56,221	180,974	445,385	10,467	473,011
1982	691,592	213,841	161,928	176,276	451,425	11,823	509,932
1983	795,498	225,598	(7,787)	172,746	543,002	10,277	543,673
1984	975,000	221,760	93,500	156,875	517,530	12,299	552,138

1/ Apparent utilization equals production + imports - exports.

2/ Negative numbers are due to the absence of stock data which were unavailable.

() denotes a negative number.

Source: (29,30).

Appendix table 53--Macroeconomic data, 1970-84

Year	Population	Nominal gross domestic product	Exchange rate	Nominal gross domestic product per capita	Real gross domestic product per capita	Gross domestic product deflator	Consumer price index	Total Agricultural exports	Total Agricultural imports	Total exports
	No.	Mln. S/	S/US$	S/	1980 S	1980=100		1,000 S/		Mln. S/
1970	5,864,000	35,019	21	5,972	21,328	28	31	3,675,326	493,034	4,909
1971	6,022,000	40,048	25	6,650	22,094	30	33	4,708,250	659,075	5,986
1972	6,184,000	46,859	25	7,577	24,602	31	36	5,290,450	792,850	8,808
1973	6,351,000	62,229	25	9,798	29,964	33	40	6,066,100	1,056,325	15,506
1974	6,522,000	92,763	25	14,223	31,123	46	50	8,817,225	1,817,750	33,589
1975	6,689,000	107,740	25	16,107	32,022	50	57	8,068,300	2,093,725	28,242
1976	6,861,000	132,913	25	19,372	34,106	57	64	10,771,920	2,075,650	34,171
1977	7,037,000	166,376	25	23,643	35,394	67	72	15,265,030	2,189,125	41,315
1978	7,218,000	191,345	25	26,509	36,768	72	80	17,750,220	2,956,350	40,831
1979	7,403,000	233,963	25	31,604	37,758	84	89	18,745,480	3,428,925	60,620
1980	8,123,000	293,337	25	36,112	36,112	100	100	15,583,700	4,549,700	73,797
1981	8,360,000	348,662	25	41,706	36,456	114	116	13,270,550	4,371,050	75,906
1982	8,603,000	415,715	30	48,322	35,874	135	135	15,490,170	5,451,761	87,563
1983	8,854,000	555,722	44	62,765	33,582	187	201	16,703,440	9,608,114	137,555
1984	9,115,000	784,891	63	86,110	33,324	258	264	31,948,080	12,941,700	208,391

Note: S/ denotes sucres.

Source: (35).

Appendix table 53--Macroeconomic data, 1970-84 (cont.)

Year	Total imports	Private consumption	Government consumption	Total consumption	Real consumption per capita	Nominal gross domestic investment	Real gross domestic investment per capita	Gross domestic product at factor cost
	Millions of sucres				1980 S/	Mln. S/	1980 S/	Mln. S/
1970	6,500	26,375	3,864	30,239	17,363	6,371	3,658	35,019
1971	9,769	30,436	4,117	34,553	17,819	9,278	4,785	40,048
1972	10,499	34,429	4,744	39,173	18,255	9,377	4,370	46,859
1973	13,497	41,711	6,394	48,105	19,322	12,115	4,866	62,229
1974	28,828	55,506	11,646	67,152	21,317	20,850	6,619	92,763
1975	35,221	70,298	15,624	85,922	23,228	28,797	7,785	107,740
1976	35,983	84,517	18,629	103,146	24,366	31,579	7,460	132,913
1977	46,310	102,578	24,656	127,234	25,147	44,137	8,723	166,376
1978	51,612	121,244	26,450	147,694	25,514	54,432	9,403	191,345
1979	59,326	143,289	30,084	173,373	26,463	59,296	9,051	233,963
1980	74,527	174,875	42,562	217,437	26,768	76,630	9,434	293,337
1981	72,441	214,665	49,742	264,407	27,989	80,790	8,552	348,662
1982	97,025	262,206	58,150	320,356	28,361	104,821	9,280	415,715
1983	115,118	366,575	69,925	436,200	25,265	97,085	5,623	555,722
1984	189,419	519,425	92,316	611,741	26,237	154,178	6,612	784,891

Note: S/ denotes sucres.
Source: (35).

Appendix table 54--Gross domestic product by sector, 1970-84

Year	Agriculture	Mining	Construction	Manufacturing	Electricity/ gas/ water	Transportation/ communications	Trade	Banking/ insurance/ real estate	Ownership of dwellings
				Millions of sucres					
1970	8,386	543	1,377	6,372	333	2,359	5,099	739	1,997
1971	9,180	622	2,157	7,546	405	2,689	5,969	844	2,164
1972	10,535	1,543	2,221	8,763	550	3,211	7,176	4,815	0
1973	12,241	6,172	2,519	10,828	608	3,719	9,600	5,932	0
1974	17,377	16,320	4,145	14,292	647	4,683	13,402	8,386	0
1975	19,333	12,482	5,988	17,209	809	6,169	16,949	11,237	0
1976	22,614	14,224	8,822	22,926	1,009	8,260	20,404	13,973	0
1977	27,671	15,677	10,402	29,934	1,269	10,602	26,107	18,394	0
1978	28,499	13,657	14,591	36,334	1,491	15,563	29,415	22,082	0
1979	31,657	27,519	16,114	44,902	1,786	17,900	34,508	25,811	0
1980	35,570	35,686	21,749	51,799	2,434	23,145	42,751	34,240	0
1981	41,631	44,015	30,522	59,951	2,546	29,861	46,339	39,845	0
1982	50,356	52,412	37,576	73,874	3,693	36,025	57,552	46,256	0
1983	73,836	85,154	32,004	103,940	3,180	49,580	79,610	58,700	0
1984	106,041	127,135	37,744	152,207	3,973	54,232	131,678	71,718	0

Source: (35).

Appendix table 54--Gross domestic product by sector, 1970-84 (cont.)

Year	Services	Public administration & defense	Other branches	Gross domestic product statistical discrepancy	Net factor income from abroad	Net indirect taxes
			Millions of sucres			
1970	3,518	3,008	1,921	(611)	3,766	(633)
1971	4,065	3,173	1,972	(895)	4,607	(738)
1972	2,937	3,581	2,369	(1,640)	5,499	(842)
1973	3,389	4,789	3,522	(3,455)	7,727	(1,090)
1974	4,315	7,266	3,772	(5,023)	10,394	(1,842)
1975	5,067	9,640	4,920	(1,678)	10,740	(2,063)
1976	6,349	11,794	5,141	(3,598)	10,551	(2,603)
1977	8,044	13,631	8,287	(4,903)	13,427	(3,642)
1978	10,140	15,348	9,081	(6,975)	16,481	(4,856)
1979	12,398	17,388	9,685	(8,893)	19,076	(5,705)
1980	16,258	26,590	12,024	(13,118)	24,388	(8,909)
1981	20,529	30,985	12,383	(18,055)	32,632	(9,945)
1982	23,947	34,855	12,130	(30,383)	35,731	(12,961)
1983	31,896	41,629	15,315	(38,071)	45,141	(19,122)
1984	38,668	55,245	24,631	(63,981)	63,092	(18,381)

() denotes a negative number.

Source: (35).

Appendix table 55--Agricultural production, 1970-84

Year	Bananas	Barley	Cocoa beans	Coffee	Maize	Oats	Milled rice	Soybeans	Wheat
				Metric tons					
1970	2,911,342	79,887	53,584	72,053	256,067	1,000	149,559	600	81,000
1971	2,742,948	68,691	70,806	62,252	249,683	1,500	128,482	1,087	68,493
1972	2,581,639	73,387	67,784	71,385	257,739	1,000	124,426	847	50,640
1973	2,495,927	79,383	63,374	74,980	245,661	700	152,445	1,538	45,189
1974	2,676,411	56,148	91,039	69,638	255,780	500	173,115	4,378	54,989
1975	2,544,327	62,801	75,272	76,437	273,027	500	236,389	12,324	64,647
1976	2,570,925	62,872	65,192	87,101	274,987	500	231,091	15,035	65,000
1977	2,450,690	40,776	72,120	82,680	218,450	500	212,954	19,270	39,800
1978	2,152,192	21,760	72,085	75,447	175,760	500	146,427	25,391	28,904
1979	2,031,559	20,718	77,407	89,728	217,870	500	207,006	29,903	31,248
1980	2,269,479	24,350	91,215	69,445	241,680	500	247,399	33,549	31,113
1981	2,009,850	27,090	80,460	86,085	281,245	500	282,357	33,184	41,431
1982	1,998,749	35,435	96,952	83,938	323,978	500	249,831	37,419	38,538
1983	1,642,073	29,589	45,000	81,075	229,417	500	177,776	14,074	26,914
1984	1,924,000	33,000	62,000	90,000	300,000	500	195,000	6,000	24,000

Source: (30).

Appendix table 56--Agricultural exports, 1970-84

Year	Bananas	Cocoa beans	Cocoa paste	Coffee	Maize	Rice	Bananas	Cocoa beans	Coffee	Total agricultural exports
				Metric tons						
1970	1,246,332	38,491	1,032	52,286	0	0	83,299	22,189	50,002	175,710
1971	1,350,600	48,750	1,276	45,943	5	0	101,155	24,332	36,100	188,330
1972	1,406,800	47,269	2,675	61,022	6	0	109,009	23,745	46,990	211,618
1973	1,368,223	32,594	3,840	75,414	16	0	109,418	25,887	65,427	242,644
1974	1,356,706	69,262	6,727	59,611	16	0	113,528	102,523	67,808	352,689
1975	1,384,486	37,057	11,845	61,086	5,020	11,600	138,652	41,766	63,532	322,732
1976	937,259	21,864	25,104	86,553	14	14,017	103,224	31,461	193,151	430,877
1977	1,317,733	18,621	36,563	54,075	12	12,012	148,260	59,960	175,762	610,601
1978	1,223,785	16,247	47,757	98,539	8	0	150,935	50,385	266,009	710,009
1979	1,170,104	14,170	51,944	82,211	8	6	156,539	40,264	263,967	749,819
1980	1,290,621	14,001	47,885	53,915	6	0	195,591	31,294	132,181	623,348
1981	1,229,555	27,156	27,600	55,994	1,005	0	207,879	43,839	105,869	530,822
1982	1,261,284	42,458	33,408	73,680	15,526	0	213,297	63,064	138,758	515,892
1983	909,956	5,555	18,755	75,045	6	0	152,926	8,365	148,607	378,634
1984	906,348	46,910	14,000	71,536	22	0	132,786	95,992	174,738	510,875

Source: (29).

Appendix table 57--Agricultural imports, 1970-84

Year	Animal fat/ oil/grease	Barley	Maize	Oats	Rice	Soybeans
			Metric tons			
1970	16,775	5,100	0	7,292	910	0
1971	17,218	5,500	0	9,231	0	55
1972	8,574	5,600	0	12,958	0	0
1973	3,295	3,201	2,678	9,109	112	199
1974	5,558	10,375	271	10,803	0	0
1975	16,702	6,348	0	19,269	0	76
1976	13,084	5,520	0	14,658	0	38
1977	15,621	11,700	0	18,438	0	0
1978	22,308	17,234	20,265	9,336	495	500
1979	29,883	43,252	3	30,469	32,054	2,870
1980	19,254	32,062	17	11,379	17,201	170
1981	15,167	36,000	0	12,000	10,000	16,568
1982	10,678	26,000	0	24,600	9,000	15,505
1983	12,135	26,600	10,526	14,575	35,000	29,500
1984	12,600	36,000	30,000	18,000	40,000	36,000

Source: (29).

Appendix table 57--Agricultural imports, 1970-84 (cont.)

Year	Soybean oil	Tobacco	Wheat	Animal fat/ oil/grease	Soybean oil	Wheat	Total imports
	Metric tons				1,000 US$		
1970	9,700	477	81,128	4,571	2,614	6,851	23,571
1971	12,600	613	48,143	2,883	4,300	4,214	26,363
1972	13,494	296	121,813	1,766	4,576	10,345	31,714
1973	12,654	493	123,142	746	4,307	17,181	42,253
1974	18,061	1,795	130,889	2,440	9,223	31,610	72,710
1975	9,182	1,543	177,390	7,314	7,057	35,181	83,749
1976	21,136	1,753	188,455	5,293	11,347	25,808	83,026
1977	10,386	3,167	143,535	7,765	6,267	20,987	87,565
1978	21,166	2,273	199,400	10,909	13,433	26,480	118,254
1979	21,912	2,018	177,080	16,386	14,989	29,798	137,157
1980	29,129	1,603	326,533	10,518	20,797	68,962	181,988
1981	25,732	743	249,256	7,604	28,888	66,387	174,842
1982	35,584	766	325,965	5,828	23,273	70,702	181,568
1983	65,368	526	280,924	7,019	31,890	65,670	217,797
1984	44,000	530	245,000	7,200	35,000	56,000	206,948

Source: (29).

Appendix table 58--Apparent utilization, 1970-84 1/

Year	Bananas	Barley	Coffee	Cocoa beans	Oats	Maize	Rice	Soybean oil	Wheat
				Metric tons					
1970	1,665,101	84,987	19,767	15,093	8,292	256,067	150,469	600	162,128
1971	1,392,348	74,191	16,309	22,056	10,731	249,678	128,482	1,142	116,636
1972	1,174,839	78,987	10,363	20,515	13,958	257,733	124,426	847	172,453
1973	1,127,704	82,584	-434	30,780	9,809	248,323	152,557	1,737	168,331
1974	1,319,705	66,523	10,027	21,777	11,303	256,035	173,115	4,378	185,878
1975	1,159,841	69,149	15,351	38,215	19,769	268,007	224,789	12,400	242,037
1976	1,633,666	68,392	548	43,328	15,158	274,973	217,074	15,073	253,455
1977	1,132,957	52,476	28,605	53,499	18,938	218,438	200,942	19,270	183,335
1978	928,407	38,994	-23,092	55,838	9,836	196,017	146,922	25,891	228,304
1979	861,455	63,970	7,517	63,237	30,969	217,865	239,054	32,773	208,328
1980	978,858	56,412	15,530	77,214	11,879	241,691	264,600	33,719	357,646
1981	780,295	63,090	30,091	53,304	12,500	280,240	292,357	49,752	290,687
1982	737,465	61,435	10,258	54,494	25,100	308,452	258,831	52,924	364,503
1983	732,117	56,189	6,030	39,445	15,075	239,937	212,776	43,574	307,838
1984	1,017,652	69,000	18,464	15,090	18,500	329,978	235,000	42,000	269,000

1/ Apparent utilization equals production + imports - exports.

Source: (29,30).

Appendix table 59--Wheat production and consumption, 1965-82

Year	Production	Consumption
	1,000 metric tons	
1965	55.0	120.0
1966	57.0	126.0
1967	60.0	130.0
1968	68.0	145.0
1969	70.0	155.0
1970	66.0	159.0
1971	60.0	165.0
1972	50.0	180.0
1973	43.6	191.0
1974	54.7	214.0
1975	50.9	246.0
1976	46.0	270.0
1977	20.4	280.0
1978	33.6	291.4
1979	24.0	292.0
1980	21.1	306.5
1981	22.0	334.5
1982	20.0	330.0

Source: (60).

Appendix table 60--Macroeconomic data, 1970-84

Year	Population	Nominal gross domestic product	Exchange rate	Nominal gross domestic product per capita	Real gross domestic product per capita	Gross domestic product deflator
	No.	Mln. Q	Q/US$	Q	-----1980 Q-----	
1970	5,246,000	1,904	1	363	866	0.419
1971	5,393,000	1,985	1	368	891	.413
1972	5,544,000	2,102	1	379	929	.408
1973	5,699,000	2,569	1	451	965	.467
1974	5,859,000	3,162	1	540	999	.540
1975	6,023,000	3,646	1	605	991	.611
1976	6,192,000	4,365	1	705	1,035	.681
1977	6,366,000	5,481	1	861	1,086	.793
1978	6,544,000	6,071	1	928	1,108	.837
1979	6,728,000	6,903	1	1,026	1,129	.909
1980	6,917,000	7,879	1	1,139	1,139	1.000
1981	7,114,000	8,608	1	1,210	1,115	1.085
1982	7,317,000	8,717	1	1,191	1,044	1.141
1983	7,526,000	9,050	1	1,203	991	1.213
1984	7,744,000	9,457	1	1,221	NA	NA

Note: Q denotes quetzales and NA = not available.
Source: (35).

Appendix table 60--Macroeconomic data, 1970-84 (cont.)

Years	Consumer price index	Total agricultural exports	Total agricultural imports	Total exports	Total imports	Private consumption
	1980 Q	1980 = 1		1,000 quetzales		
1970	0.401	204,713	32,330	353,600	338,500	1,493,300
1971	.399	198,719	31,078	343,100	371,100	1,588,000
1972	.402	234,017	30,549	415,700	411,600	1,686,000
1973	.456	308,165	36,354	567,900	552,700	2,035,900
1974	.532	401,753	58,086	753,400	859,400	2,472,900
1975	.602	451,127	69,684	792,100	858,000	2,874,800
1976	.667	564,493	52,357	968,800	1,198,000	3,413,100
1977	.750	938,519	62,455	1,333,000	1,425,100	4,119,900
1978	.810	859,065	115,982	1,282,100	1,647,900	4,689,300
1979	.903	921,045	139,895	1,470,000	1,776,300	5,427,200
1980	1.000	1,032,634	146,455	1,748,000	1,963,000	6,217,000
1981	1.114	769,472	155,465	1,471,000	2,031,000	7,022,000
1982	1.118	701,033	107,039	1,289,000	1,629,000	7,149,000
1983	1.168	727,172	106,964	1,176,000	1,317,000	7,501,000
1984	1.208	704,084	122,638	1,258,000	1,452,000	7,856,000

Note: Q denotes quetzales.
Source: (35).

Appendix table 60--Macroeconomic data, 1970-84 (cont.)

Year	Government consumption	Total consumption	Real consumption per capita	Gross domestic investment	Real gross domestic investment per capita
	1,000 Q	1,000 Q	1980 Q	1,000 Q	1980 Q
1970	151,400	1,644,700	782	244,200	116
1971	139,300	1,727,300	803	285,500	133
1972	156,700	1,842,700	827	254,800	114
1973	166,600	2,202,500	848	351,600	135
1974	206,600	2,679,500	860	588,000	189
1975	250,300	3,125,100	862	586,800	162
1976	297,300	3,710,400	898	884,100	214
1977	354,500	4,474,400	937	1,098,200	230
1978	434,600	5,123,900	967	1,312,400	248
1979	488,000	5,915,200	974	1,294,100	213
1980	627,000	6,844,000	989	1,250,000	181
1981	680,000	7,702,000	972	1,466,000	185
1982	675,000	7,824,000	956	1,233,000	151
1983	688,000	8,189,000	932	1,002,000	114
1984	716,000	8,572,000	916	1,079,000	115

Note: Q denotes quetzales.
Source: (35).

Appendix table 61--Gross domestic product by sector, 1970-84

Year	Gross domestic product at market prices	Agriculture	Mining	Construction	Manufacturing	Electricity
			Millions of 1958 quetzales			
1970	1,793	490	2	28	283	22
1971	1,893	524	2	29	303	23
1972	2,032	575	2	34	320	26
1973	2,169	605	2	41	346	28
1974	2,308	644	2	38	362	30
1975	2,353	660	2	44	356	33
1976	2,527	690	3	76	394	35
1977	2,724	717	3	86	436	44
1978	2,860	739	5	89	464	49
1979	2,995	760	9	94	490	52
1980	3,107	772	15	98	517	53
1981	3,127	781	9	117	501	53
1982	3,017	758	11	103	475	52
1983	2,940	745	9	76	466	52
1984	2,958	760	8	53	468	54

Source: (35).

Appendix table 61--Gross domestic product by sector, 1970-84 (cont.)

Year	Transportation and communication	Trade	Banking/ insurance/ real estate	Ownership of dwellings	Services	Public administration and defense
			Millions of 1958 quetzales			
1970	98	518	42	125	98	87
1971	106	542	44	127	106	88
1972	118	570	47	130	114	98
1973	131	609	53	132	123	100
1974	148	656	58	135	130	106
1975	151	649	61	139	140	118
1976	165	704	65	112	151	132
1977	177	769	79	121	161	131
1978	190	802	86	130	169	138
1979	200	825	102	134	182	147
1980	216	839	107	138	189	163
1981	211	844	109	142	190	170
1982	201	797	110	146	188	177
1983	200	764	107	149	186	185
1984	205	771	110	152	188	190

Source: (35).

Appendix table 62--Agricultural production, 1970

Year	Bananas	Barley	Coffee	Cotton lint	Maize	Milk	Milled rice	Sugar	Wheat
				Metric tons					
1970	486,700	161	126,546	64,572	785,846	262,000	14,731	231,100	36,025
1971	495,000	179	128,386	56,751	747,364	270,000	24,705	254,671	38,031
1972	510,000	200	142,682	81,289	801,943	280,000	19,765	282,153	46,715
1973	520,000	225	145,642	96,164	812,680	290,000	16,298	325,340	47,104
1974	510,000	304	157,437	121,248	799,489	300,000	12,769	376,000	51,106
1975	520,000	319	139,091	106,519	933,542	310,000	17,900	433,000	45,382
1976	550,000	322	158,433	99,154	845,900	292,000	15,668	599,000	47,864
1977	545,000	267	168,217	135,828	841,900	313,710	16,143	555,000	55,752
1978	550,000	478	169,636	148,612	906,412	310,000	17,124	445,320	59,616
1979	556,000	478	161,000	151,360	940,590	315,000	24,004	399,050	56,764
1980	650,000	538	163,420	150,813	902,419	286,688	27,517	435,055	58,128
1981	650,000	520	172,727	113,502	997,464	325,000	15,240	484,000	55,293
1982	655,000	550	159,180	70,706	1,099,837	350,000	15,387	595,000	48,627
1983	675,000	600	152,580	48,000	760,000	365,000	29,751	620,000	21,500
1984	695,440	640	140,400	59,000	988,000	365,000	27,885	578,000	27,000

Source (29).

Appendix table 63--Agricultural exports, 1970-84

Year	Bananas	Coffee	Barley	Cotton lint	Maize	Milk
			Metric tons			
1970	219,987	95,125	7	49,572	144	724
1971	253,226	100,045	14	47,546	1,752	168
1972	290,032	114,668	2	74,850	3,333	334
1973	282,349	114,848	0	84,844	0	457
1974	326,814	121,073	0	107,077	0	182
1975	257,424	135,751	0	97,814	9	481
1976	327,445	119,076	0	93,434	6	333
1977	319,506	132,672	0	124,046	0	274
1978	326,022	131,557	0	128,389	42	307
1979	264,892	143,346	2	147,776	6	596
1980	391,102	128,710	1	136,544	15,989	493
1981	400,014	109,896	1	77,277	92	490
1982	404,083	141,486	0	65,601	0	500
1983	316,120	142,860	0	38,866	0	400
1984	324,000	127,247	0	52,291	0	400

Source: (29).

Appendix table 63--Agricultural exports, 1970-84 (cont.)

Year	Rice	Sugar	Wheat	Coffee	Cotton lint	Sugar
	Metric tons			1,000 US$		
1970	2,450	57,346	89	100,577	26,490	9,153
1971	488	70,133	135	96,288	25,276	10,401
1972	144	91,183	26	106,072	40,057	16,118
1973	0	126,328	8	145,595	46,580	21,938
1974	0	134,181	0	172,946	68,277	49,570
1975	0	203,513	0	164,205	74,061	115,558
1976	25	314,153	5	242,952	84,970	106,737
1977	0	305,233	10	525,883	152,100	84,858
1978	2	152,968	0	477,454	139,236	45,758
1979	57	154,715	5	430,301	182,763	52,390
1980	21	219,573	3	469,781	166,543	75,946
1981	0	195,635	3	294,825	106,582	84,163
1982	3	127,249	0	358,827	77,900	26,511
1983	0	266,697	0	357,696	46,567	91,133
1984	3,000	203,671	0	354,550	70,420	61,062

Source: (29).

Appendix table 64--Agricultural imports, 1970-84

Year	Barley	Coffee	Cotton lint	Maize	Milk
			Metric tons		
1970	0	0	6	16,093	3,548
1971	0	0	0	16,678	3,417
1972	0	0	878	12,789	3,020
1973	0	0	0	35,854	2,202
1974	0	0	0	72,054	3,105
1975	23	4	241	53,892	1,772
1976	0	1	112	6,455	1,625
1977	0	0	0	13,201	5,311
1978	0	2	188	83,681	6,230
1979	0	0	167	55,636	6,307
1980	0	0	2,314	81,032	8,547
1981	0	7	778	52,048	6,955
1982	0	0	0	6,226	7,402
1983	0	0	0	634	9,350
1984	0	0	0	6,800	18,150

Source: (29).

Appendix table 64--Agricultural imports, 1970-84 (cont.)

Year	Rice	Sugar	Wheat	Cattle	Milk	Wheat
	Metric tons			1,000 US$		
1970	4,469	104	88,615	1,351	2,279	6,070
1971	2,608	279	72,477	1,255	2,532	5,643
1972	3,359	80	75,439	1,129	2,479	5,761
1973	1,303	143	64,124	1,112	2,069	7,472
1974	195	146	64,699	1,000	3,738	12,919
1975	5,919	1	80,732	856	2,638	15,740
1976	532	2	77,896	391	1,932	14,495
1977	4,442	41	11,301	712	6,988	12,153
1978	5,215	91	10,836	26,000	7,264	13,015
1979	10,828	201	00,217	44,000	5,089	17,976
1980	4,341	131	16,811	23,000	12,276	25,052
1981	3,229	1071	10,494	27,000	9,002	25,164
1982	183	0	92,803	0	12,628	18,467
1983	4,200	0	14,175	0	9,265	22,282
1984	0	0	32,778	0	18,280	24,620

Source: (29).

Appendix table 65--Apparent utilization, 1970-84 1/

Year	Bananas	Barley	Coffee	Cotton lint	Maize	Milk	Rice	Sugar	Wheat
				Metric tons					
1970	266,713	154	31,421	15,006	801,795	264,824	16,750	173,858	124,551
1971	241,774	165	28,341	9,205	762,290	110,373	273,249	26,825	184,817
1972	219,968	198	28,014	7,317	811,399	122,128	282,686	22,980	191,050
1973	237,651	225	30,794	11,320	848,534	111,220	291,745	17,601	199,155
1974	183,186	304	36,364	14,171	871,543	115,805	302,923	12,964	241,965
1975	262,576	342	3,344	8,946	987,425	126,114	311,291	23,819	229,488
1976	222,555	322	39,358	5,832	852,349	125,755	293,292	16,175	284,849
1977	225,494	267	35,545	11,782	855,101	167,043	318,747	20,585	249,771
1978	223,978	478	38,081	20,411	990,051	170,452	315,923	22,337	292,361
1979	291,108	476	17,654	13,751	996,220	156,976	320,711	34,775	244,355
1980	258,898	537	34,710	16,583	967,462	174,936	294,742	31,837	215,495
1981	249,986	519	62,838	37,003	1,049,420	165,784	331,465	18,469	288,472
1982	250,917	550	17,694	5,105	1,106,063	141,430	356,902	15,567	467,751
1983	358,880	600	9,720	9,134	760,634	135,675	373,950	33,951	353,303
1984	371,440	640	13,153	6,709	994,800	159,778	382,750	24,885	374,329

1/ Apparent utilization equals production + imports - exports.
Source: (29,30).

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