

COFFEE AND POLITICS IN
CENTRAL AMERICA

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INTRODUCTION

To even the casual visitor the differences among the Central American Republics are striking. Indeed, it would be difficult to find three political systems anywhere in the world that differ among themselves as much as do those of contemporary Guatemala, Nicaragua, and Costa Rica. The first is a military dictatorship of relentless ferocity and medieval barbarism (Aguilera, 1982; Aguilera and Romero, 1981; Americas Watch, 1983; Amnesty International, 1981; Torres-Rivas, 1980); the second, a revolutionary regime evolving to some as yet undefined version of socialism (Black, 1981; Carl, 1984; Collins, 1982; Gorman, 1981; Nolan, 1984; Vargas, 1985); the third, a tropical welfare state with one of the few genuinely democratic political systems in Latin America (Bell, 1971; Rosenberg, 1983; Seligson, 1980; Torres-Rivas, 1975; Vega, 1981, 1982). These differences are even more surprising when one considers the many characteristics shared by all Central American Republics: a common Hispanic culture, a common religion, a common colonial history, and involvement in common political struggles as late as 1855. All of the five principal Central American Republics (Costa Rica, Guatemala, Honduras, Nicaragua, and El Salvador) were part of the colonial Captaincy General of Guatemala, all participated in the ill fated empire of Augustín Iturbide, all were involved in the Central American Federation and other nineteenth century attempts at union, all united to defeat William Walker and his filibusters (MacLeod, 1973; Woodward, 1985; Wortman, 1982). All share a common Isthmian location which has facilitated domination by outside powers—first Spain, then Great Britain and Germany, and finally, the United States. All are small peripheral export economies which have depended since colonial times on the export of one or two agricultural commodities and in four of the five countries (Costa Rica, Guatemala, Nicaragua, and El Salvador) one agricultural export, coffee, dominated their economies from the last half of the nineteenth century until approximately 1950 (Cardoso, 1975; Torres-Rivas, 1971).

With the exception of Honduras where bananas, not coffee, ruled until after World War II (Morris and Ropp, 1977; Posas, 1981), the political economy of Central America in the late nineteenth and early twentieth centuries is largely the political economy of coffee cultivation and export.

Despite these similarities, differences among the Central American Republics were apparent by 1821 (Torres-Rivas 1975:9) and, to a lesser extent, as early as 1650 (MacLeod, 1973:307). In each of the four principal exporting countries, coffee developed in ways which both reflected and accentuated the varying political and economic structures inherited from the colonial past. These countries faced the revolutionary crisis of the 1970s and 1980s with political systems dominated by traditional oligarchies whose wealth derived, to a greater or a lesser extent, from coffee cultivation, processing, and export. It was not coffee alone which created the tensions which led to revolution but it was coffee which created the political structures with which the Central American Republics, with varying degrees of success, tried to cope with revolution. It is beyond the scope of this paper to trace the historical development of individual Central American coffee export economies even though the rapid accumulation of research findings on Costa Rica (Cardoso, 1977; Hall, 1978, 1980; Seligson 1975, 1980; Stone, 1982), Guatemala (Biechler, 1970; Cambranes, 1980, 1982; Dominguez, 1970; McCreery, 1976, 1980; Montenegro, 1976; Mosk, 1955; Nañez, 1961, 1970), El Salvador (Aubey, 1968-1969; Browning, 1971; Colindres, 1976, 1977; Kerr, 1977; Menjivar, 1980; Trujillo, 1981) and even poorly documented Nicaragua (Delgado, 1961; Gariazzo et al. 1983a, 1983b; Keith, 1974; Radell, 1964; Wheelock, 1980) makes such a review overdue. Instead, the Central American coffee export economies will be examined as they existed at the midpoint of the twentieth century just prior to the economic transformations which would create the

preconditions for the contemporary crisis. The goal is not to account for the origins of the revolutionary crisis itself but to account for the differing responses of the coffee elites of Costa Rica, Guatemala, Nicaragua, and El Salvador to the challenge posed by growing demands for political power from below. In Costa Rica, the coffee elite was swept aside with surprising ease and political power passed to new social groups in a democratic political order (Bell, 1971; Stone, 1980, Seligson, 1980). In El Salvador the coffee oligarchy clings to power with extensive American assistance in the face of a vigorous and long entrenched revolutionary movement (Baloyra, 1982; Dunkerly, 1982; Montgomery, 1982). In Nicaragua, a popular revolution swept to power with the assent and even the active assistance of some members of the traditional elite (Black, 1981; Gilly, 1980; Lopez et al., 1980), and in Guatemala, the coffee oligarchy and their allies in business and the military have imposed a counter-revolutionary government on a revolutionary society (Aguilera, 1982; Aguilera and Romero, 1981; Jonas and Tobis, 1974). It is the contention of this paper that these differing elite responses can, in large part, be accounted for by differences in the organization of coffee production in each country and that these differences in organization, in turn, shaped the class base of the elite, the character of their lower class opponents, and the terms of the conflict between them. The Central American coffee oligarchs developed their industry in political and social systems which were already distinct. The solutions to the fundamental problems of land tenure, production, labor recruitment, processing, and export available to each elite were, therefore, different and the nature of their solutions set the direction of economic and political life for more than a century after the rise of the coffee export economies. The coffee growers associations formed by members of these elites or the governments they controlled

also left behind detailed statistical portraits of their industries and it is this statistical record that forms the basis of the comparative analysis of the Central American coffee economies which follows.

THE ORGANIZATION OF PRODUCTION

Each of the Central American coffee elites had to solve four fundamental problems common to coffee production everywhere: (1) acquisition and control over land, (2) organization and rationalization of production, (3) mechanization and finance of processing, and (4) finance and control over exports. Transport, roasting, soluble coffee manufacture, distribution, and retail sales were always controlled by agents of the importing nations (Fischer, 1972:50-51; Wickizer, 1943:55-56; Sivetz and Foote, Vol. 2:279) but the first four steps involved varying degrees of participation by Central American nationals or by European immigrants taking up permanent residence in the region. Control over land, production, processing, exports, or over some combination of these steps provided Central American coffee growers, both immigrant and national, with important sources of wealth and political power. Nevertheless, Central American coffee growers differed considerably among themselves in their ability to solve problems of land, production, processing, and export, in the nature of the solutions they adopted and in the effect of their solutions on their ultimate political positions. To understand both the economic and political behavior of the Central American coffee elite requires some understanding of the problems facing them at each stage of the coffee production process.

Land

Control over land is not only an obvious prerequisite for any kind of agricultural activity including the production of coffee, but it also can be in itself an important source of power and wealth. Possession of an estate in

Central America even now, but more so in the recent past, implied possession of seigniorial rights over the rural population resident on or near the estate and, as a result, almost complete control of this population's political allegiance (Pansini, 1977:18-21; Stone, 1982:109-110; Wheelock, 1980:33). This kind of social and political power exists even if no coffee is grown and even inefficient, unprofitable producers may be politically influential through their control over labor or voting blocs. Possession of land has, in turn, always depended more on access to political than to economic power. Privileged Central Americans and European immigrants used this power to acquire coffee lands, and coffee wealth to acquire political power. State power was used by the Central American coffee elites to expropriate the extensive lands held by the Church and indigenous communities in Guatemala (Cambranes, 1982:18; McCreery, 1976:456-457; Torres-Rivas, 1975:48-49); by indigenous communities and municipal governments in El Salvador (Browning, 1971:174-175; Kerr, 1977:7; Menjivar, 1980:86-87); by indigenous communities and the national government in Nicaragua (Delgado, 1961:38; Wheelock, 1981:109); and by the national government in Costa Rica (Hall, 1982:34-35; Stone, 1980:99). Even in Costa Rica where the colonial heritage was weakest, two-thirds of the major nineteenth century coffee growers were descendents of only two colonial families (Stone, 1980:191). In Guatemala much coffee production passed rapidly into the hands of German immigrants who enjoyed preferential citizenship rights and official favor (Náñez, 1970:19-20, 23-25). In El Salvador privileged urban groups, and government officials became the first planters and were quickly joined by European immigrants attracted by the coffee boom (Browning, 1971:168-169; Menjivar, 1980:129,131). In Nicaragua the coffee estate evolved from the colonial hacienda and Europeans and North Americans were granted extensive concessions (Delgado, 1961:38; Niederlein, 1898:51-52;

Wheelock, 1980:32). The consolidation of control over coffee lands formed an enduring base of political power for the coffee elites throughout Central America although the amount of land and the strength of seignorial control varied considerably among the four major coffee producing nations. The Central American coffee elites also varied considerably in their ability to convert control over land and people into agricultural wealth through the rationalization of the next stage in the coffee cycle — production.

Production

Land secured, the Central American planters devoted themselves to coffee production with varying degrees of technical sophistication and productivity. All Central American planters were confronted with the fact that coffee production (as opposed to processing) admits of little or no mechanization in cultivation and none whatsoever in harvesting. El Salvadoran planter J. Hill's observation in the 1930s that the maximum number of coffee beans harvested per worker per day could not exceed approximately 40,000 (Hill, 1936:424) is as true today as it was in 1930, or for that matter, in 1830. Attempts to mechanize the harvest process, notably in Brazil (Holloway, 1974:61) have never met with much success and machinery is even more difficult to use in the rugged terrain of Central American coffee farms. Furthermore, in every Central American producing country except Nicaragua coffee beans are now, and always have been, picked with the utmost care one bean at a time to protect the quality of the fine washed "milds" produced in the region (Duque, 1938:41-45; Sivetz and Foote, 1963, Vol 1:50; Wellman, 1961:365-366; Jamaica Coffee Industry Board, 1959:17). Since the peak harvest period in Central America tends to be short (a month or less) planters experience an acute need for massive amounts of hand labor at a critical point in the production cycle. Cultivation, weeding, and pruning also are not

mechanized although chemical herbicides and unshaded, tightly spaced plantings have begun to reduce the demand for labor in the preharvest period (Jamaican Coffee Board, 1958:7-11; Wellman, 1961:198-200). The limited prospects for mechanization and the corresponding need for hand labor, particularly at harvest, committed Central American planters to a continuous search for large pools of cheap labor and severely limited their ability to substitute capital for labor in the production process itself. Paradoxically, this worked to the advantage of Central American nationals since it lowered capital requirements for entry in the industry and made it possible for Central Americans with land or political influence, but little cash, to rise to positions of prominence in coffee production.

Although capital could not be profitably invested in machinery, productivity could and was vastly increased in some areas by investment in the condition of the coffee trees themselves. Productivity per unit area or per bearing tree can be increased substantially by planting newer and higher yielding varieties such as Bourbon in the 1940s and 1950s and Caturra today; by increasing the density of plantings, by making use of organic or chemical fertilizers; by planting nitrogen fixing plants; by using chemical weed killers; by the application of pesticides and fungicides; and by careful pruning to maximize yield and minimize effort during harvest (Sivetz and Foote, 1963, Vol. I:30-37; Wellman, 1961:191-351; Dominguez, 1970:134-196). Since the difference between high and low yielding varieties, fertilized and unfertilized fields, or pruned and unpruned trees can be as much as 50 percent for each innovation, the combined effect on yields can be substantial. Since denser, higher yielding groves are easier to harvest, there are likely to be savings at harvest as well as during cultivation and weeding. Furthermore, the more attention devoted to scientific cultivation

practices the healthier the plants, and the less the need to expend labor on replanting diseased groves or fighting epidemics of plant blight or insect infestation. Since the coffee plant is subject to a remarkable variety of diseases, this is an important cost consideration for a planter. The net effect of these innovations is to substantially increase both the productivity of the land per unit area and the productivity of labor per unit weight of coffee harvested. Although capital cannot be profitably invested in machinery, it can be profitably invested in a standing tree crop with a productive life time of approximately five to twenty-five years. In the case of coffee cultivation, capital literally grows on trees.

Given the substantial gains in both productivity and profitability which can be realized through scientific cultivation, a technological imperative of considerable force drives planters in the direction of capital intensive rationalized production. This has, in fact, been the outcome unless, as has frequently been the case in Central America, political or social factors have blocked rationalization of the industry. To the degree that capital is invested in scientifically managed coffee groves, the planter becomes more and more an agrarian capitalist and less and less a seignorial land owner. The returns on this invested capital or the principal itself can be used to expand production or to diversify into other agricultural sectors or into finance or industry. Financial power can, of course, be translated into political power so that the successful scientific coffee grower gains an additional source of influence beyond that granted by ownership of the land itself and control over the people who live on it. But the power is different in substance and the political goals of a nascent class of agrarian capitalists are not likely to be identical to those of a traditional seignorial elite with little disposable capital other than

the land itself. As one moves downstream in production sequence to processing and export, agrarian capital gradually changes into industrial and financial capital, respectively, and the economic base of the coffee elite, as well as their economic interests, correspondingly shift.

Processing

Under Central American conditions, processing, unlike production, can be extensively mechanized and therefore the capital requirements are considerably greater in processing than in production. Furthermore, fully rationalized processing requires an elaborate physical plant so that the capital is less agrarian than industrial. Harvested coffee beans begin to ferment almost immediately and if the crop is not to be lost, it must be processed within 8 to 36 hours after picking (Sivetz and Foote, 1963:54; Wellman, 1961:370). Whatever form the processing takes, it must remove the seeds of the coffee berry — the source of coffee as a beverage -- from the surrounding organic material. Each coffee berry consists of an outer skin surrounding a thick pulp which constitutes the greater part of the mass of the berry. Surrounding the seeds are a thick, sticky substance known as mucilage, a paper like membrane called the parchment, and a thin coating called the silver skin. In Central America, the unprocessed berries are usually referred to as "cherries" (cereza) and coffee in this state is said to be "en cereza." The parchment membrane is called "pergamino" and partially processed coffee with the skin pulp and mucilage removed is said to be "en pergamino." Threshed beans with parchment and silver skin removed ("green" coffee in English) are referred to by the Spanish word for gold, "oro." Processing must dispose of the skin and pulp, separate the mucilage from the parchment, and strip off the parchment and silver skin without contaminating or damaging the beans themselves. Since the dry green coffee bean is relatively

fragile and has an active affinity for a variety of contaminants, processing can be complex.

In general, two major approaches have evolved to solve the problem of removing the bean from the berry and in the coffee trade these approaches are called "dry" and "wet" processing (Sivetz and Foote, 1963:55-57; Wellman, 1961:370-374; Wickizer, 1943:41-45). In the dry method, coffee may be processed without elaborate machinery simply by drying the harvested berries on an open patio or even on hard, dry ground and then threshing the hardened fruit. The threshing can be done with a technology as simple as driving cattle across the dry ground or pounding the dried fruit against a hollow stump with a stick. Quality control is, however, difficult to achieve with the dry method and this problem is particularly acute in moist climates such as those prevailing in most of the Central American coffee zone. As a result, the production of high quality coffee in Central America depends on the much more elaborate technology of wet processing. In this system, the outer shell and pulp are first removed by mechanical means, and the mucilage is allowed to ferment until it can be washed away. The beans are then dried in open or by mechanical dryers and the beans are mechanically threshed to remove the parchment and silver skin membrane. Although wet processing can be carried out through relatively simple procedures such as depulping the beans by stamping on them barefoot and removing the mucilage by hand washing, considerable efficiencies can be gained by the use of power driven machinery. The range of applicable technology is considerably greater in wet than in dry processing and in Central America, processing plants have ranged from rudimentary hand driven wooden devices of local manufacture (Keith, 1974:92; Radell, 1964:51-52) to elaborate, power-driven industrial installations (Instituto Centroamericano de Administracion de Empresas, 1981:6-11; Morrison and

Norris, 1954:318-322).

Since the capital requirements of a large, technologically sophisticated wet process plant are substantial and have been so since industrial processing technology was developed at the end of the nineteenth century, the owners of coffee processing plants (called "beneficios" in Spanish America) are industrial capitalists using an agricultural raw material rather than agriculturalists. It is, of course, entirely possible for a coffee producer to integrate downstream into processing and in fact many large producers in Central America have owned their own processing plants (Baloyra, 1982:25; Dominguez, 1970:264; Hall, 1982:87; Radell, 1964:25). But whether or not the processing plant is owned by a producer, the capital requirements of this industrial technology imply not only a different but substantially larger base of economic power than that provided by coffee production alone. In addition, most coffee processors purchase additional coffee from other growers to realize economies of scale; this, in turn, may lead them to make advances to other growers and hence assume the role of banker. It is not uncommon in Central America for large processing plants to provide the capital for banks and production, processing, and banking activities often overlap in coffee production (Habib, 1958:138; Hall, 1982:45; Slutsky and Alonso, 1971:21-22; Wheelock, 1980:144-145). Similarly, a processor possesses a fund of capital which may allow him to diversify into other agricultural activities or into industry, tourism, or real estate (Colindres, 1976:471; Nañez, 1970:385-410; Stone, 1982:147-351). To the degree that a coffee elite is involved in processing, its economic base and political interests will tend to diverge further from those of a traditional land owning elite.

Export

Export is the stage of the coffee cycle which demanded the most capital and

it is also the area where foreigners have had their greatest impact on the Central American industry. The exporter not only must purchase the crop in Central America and hold it until eventual sale to European or American importers but also must be part of an elaborate international trading and financial network. At this point, financial and mercantile considerations vastly outweigh purely agricultural concerns and although exporters may be involved in production, they are often principally financial intermediaries. Exporters may become involved in financing the entire coffee system through advances as, for example, occurred with English capital in Costa Rica (Hall, 1982:45-46) or German capital in Guatemala (Biechler, 1970:36). Nevertheless, throughout Central America, many of the largest producers and processors did become involved in export and in El Salvador this pattern was particularly pronounced (Colindres, 1976:471; Sebastián, 1979:950-951). Although in many cases production, processing, and export were often controlled by the same individuals or family groups, the differing financial and technical requirements of the export phase of the coffee production cycle provide an additional base for differentiation of Central American coffee elites..

Moving downstream from the point of production to the point of sale through control over land, production, processing, and export, capital requirements, entrepreneurial and managerial skills, prospects for diversification, and association with purely financial activities all change markedly. The industrial and financial capital and skills required in the downstream stages have given Europeans and North Americans a distinct advantage in export and, to a lesser extent, processing while Central American nationals have used their better political connections to gain control over land and production. In Guatemala, for example, by the 1930s, although German growers controlled only 25 percent of

the plantations, they accounted for almost two-thirds of production and an even larger percentage of exports (Biechler, 1970:36-37). As Biechler (Ibid.:36) notes, "To a significant extent, coffee ceased to be a national activity." In Nicaragua, all coffee exports were controlled by a subsidiary of two American banking houses allied with the Nicaraguan national bank and it was not until the 1950s that Nicaraguan nationals had any direct role in exports (Wheelock, 1980:144). In Costa Rica, foreigners exercised relatively little direct control over production but as late as 1935 almost a third of the processors in Costa Rica were either foreigners or descendants of immigrants who arrived in Costa Rica after 1840 and these grand processors, many of whom were also exporters, controlled 44 percent of the national harvest (Hall, 1982:53). Even in El Salvador where national capital was strongest, international trading firms such as Curaçao (Dutch) or Nottlebohm (German) controlled a major portion of exports (Asociación Cafetalera, 1940:192-199). Nevertheless, the relatively low capital requirements for entry into at least the production phase of the coffee cycle provided Central Americans with a source of national wealth and a possible point of entry into processing and export. But the coffee elites of Costa Rica, Guatemala, Nicaragua, and El Salvador differed markedly in their ability to exploit the opportunities provided by coffee and in their relative dominance over each phase of the coffee production sequence. These differences at each state — land acquisition, production, processing, and export — are clearly evident in the detailed statistical record accumulated by coffee growers and their governments. This statistical record provides us not only with a portrait of the differences among the four coffee systems but also reveals important differences in the economic base of each of the ruling coffee elites in the early twentieth century.

EMPIRICAL ANALYSIS

Analysis of the coffee production sequence suggests two very different bases of political power for Central American coffee elites. Control over land and tight seignorial restrictions over people resident on it provide a source of military or political influence, but may or may not be associated with great financial or industrial power. Control over production, processing, and export, on the other hand, insures some degree of industrial or financial power but does not guarantee the control over land and people which has been the traditional base of oligarchic dominance throughout Latin America. In fact, to the degree that rationalized coffee cultivation requires clearing resident workers from the subsistence plots and substituting wage for bound labor, the two forms of power may not be entirely compatible. Although in Central America the two bases of power can be and have been combined, the coffee elites differ sufficiently among themselves in their dependence on either control over land, coffee, and people or control over production technology, processing, and export, to require the consideration of each potential base of elite power separately.

Control over Land, Coffee, and People

There is little disagreement among authors writing about Guatemala (Biechler, 1970:109, Cambranes, 1982:19; Montenegro, 1976:144; Nañez, 1970:81) or in official statistical sources (Guatemala, Dirección General de Estadística, 1953:5, 1971:245,248) about the absolute domination of Guatemalan coffee land and production by large estates. Similarly, there is little disagreement about the domination of a planter oligarchy over land and production in El Salvador (Browning, 1971:179; Colindres, 1976:470-471; Sebastián, 1979:950-951) although comparative analysis of the substantial differences between the two systems has received less attention (Cardoso, 1975; Torres-Rivas, 1971). There is, however,

considerable debate about the true distribution of land and production and the relative size and importance of the large estate in the case of both Costa Rica and Nicaragua. For Costa Rica, the opposing positions are most forcefully stated by Carolyn Hall (1982) and Mitchell Seligson (1975, 1980) although Hall's position has been argued by Cardoso (1977) and Torres-Rivas (1975) and Seligson's work builds on that of Moretzsohn de Andrade (1967). Hall argued that Costa Rican coffee land ownership and production have been dominated by small holders and that estate production is of less relative importance and the estates themselves, smaller than elsewhere in Central America. Seligson contends that the rise of coffee production transformed the traditional small holding pattern of Costa Rican agriculture and led to dominance by large estates, unequal land distribution, and the growth of a landless proletariat. For Nicaragua, Jaime Wheelock in his influential work, Imperialismo y Dictadura (1980), argues that the Nicaraguan coffee estate was simply an extension of patterns of colonial agriculture and that large manorial units dominated coffee production. In Wheelock's view, Nicaragua differs from El Salvador in the technical development of coffee production and processing but not in the importance of the large estate. Baumeister (1982), on the other hand, has proposed a model of the Nicaraguan agrarian economy which suggests that Nicaragua, like Costa Rica, is an exception to the Latin American pattern of large estate dominance and that small holders and what he calls a bourgeoisie "chapiolla" or small employer strata were the most important factors in prerevolutionary Nicaraguan coffee production.

The outcomes of both of these debates have implications which go far beyond the coffee economy. In the case of Costa Rica, the prominence of small holders has long been seen as an important support for democracy (Bell, 1971:6; Merz, 1937:288; Torres-Rivas, 1975:70) and in Nicaragua, the absence of a class of

large estate owners in coffee should weaken resistance to the revolutionary program of the Sandinistas (Baumeister, 1982:48). As is often the case in such debates, there is more than a little truth in both positions and in part the continued discussion reflects the more varied internal structure of coffee production in Costa Rica and Nicaragua as opposed to Guatemala and El Salvador. In all four countries, however, an accurate assessment of the true distribution of land and production requires a consistent and sociologically meaningful definition of estate and small holder production. As Gariazzo et al. (1983b:22) have pointed out, small holding and estate production are sociological class categories not simply size of holding intervals. The relationship between size of coffee holding and class position is complex and depends on the intensity, technical development, and social organization of production. Given the high value and labor intensivity of the crop, even relatively small holdings can create a substantial class division between the dominant land owners and their estate and migrant harvest laborers. Furthermore, the class position of a coffee grower is tied more closely to the area in coffee than to the total size of holding and the latter index is likely to be particularly misleading when coffee cultivation is combined with cattle raising or other extensive agriculture.

In order to provide a basis for systematic comparison among the four major Central American coffee producers as well as to decide among the competing images of class structure in Costa Rica and Nicaragua, it is necessary to have both a definition of class position in coffee cultivation and a metric defined in terms of coffee areas reported in Central American coffee censuses. The system used here is based on those developed by Ricardo Falla for research in the Department of Jinotega, Nicaragua (described in Gariazzo et al., 1983b:28) and by the Centro de Investigaciones y Estudios de la Reforma Agraria (n.d.) for Nicaragua as a

whole. Since the focus of this study is on elite composition, an additional distinction has been introduced to include important differences in the organization of estate production evident in the abundant descriptive literature on individual estates (Bratton, 1939; Cardoso, 1977; Comité Interamericano de Desarrollo Agrícola, 1965; Gariazzo et al., 1983b; Hall, 1978; Instituto Centroamericano de Administración de Empresas, 1977, 1981; Morrison and Norris, 1954; Nañez, 1970; Pansini, 1977; Villegas, 1965).

Falla (Gariazzo et al., 1983b:28-29) distinguished three important types of producers in Jinotega: "agricultores fuertes" (strong farmers); "agricultores medianos" (medium farmers); and "campesinos ricos" (rich peasants). Strong producers controlled 50 to 100 manzanas (1 manzana = .69 hectare) of coffee, but did not themselves participate in production or management. Instead, they employed administrators who directed the activities of from 10 to 20 to sometimes as many as 60 permanent laborers as well as a much larger number of harvest workers. A medium farmer managed his estate directly and sometimes took part in specialized cultivating activities. He employed a smaller number of workers, the majority of them temporary, and controlled from 10 to 49 manzanas of coffee. The rich peasant had from 3 to less than 10 manzanas of coffee and worked the farm himself aided by family members and a few hired temporary laborers. The system developed by the Centro de Investigaciones y Estudios de la Reforma Agraria (CIERA) in Nicaragua is similar to Falla's although the ranges of coffee area intervals are slightly different and, significantly, CIERA terms producers with more than 65 manzanas of coffee "latifundistas y gran burguesía" (large land holders and grand bourgeoisie) rather than using Falla's "strong farmer" term for the corresponding category. CIERA also identified an additional "poor peasant" category (5 manzanas of coffee or less) which defines those cultivators too poor

to support themselves solely by coffee growing. Most "poor peasant" coffee cultivators are forced to search for outside employment often, although not invariably, on other, larger coffee farms. The category system for smaller growers adopted for this study combines the Falla and CIERA systems and defines the following groups according to their functional class position as measured by the amount of coffee they control: sub-family farmers who control from 0 to 4.9 manzanas of coffee are assumed to be too poor to support themselves from their farms and can, therefore, be thought of as part-time mini-farmers and part-time wage laborers; family farmers who control from 5 to 10 manzanas of coffee are assumed to be able to support themselves in coffee cultivation largely through their own and their family's labor; small employers who control from 10 to 49.9 manzanas are assumed to rely on permanent and harvest wage laborers rather than family members for most labor, to manage their farms themselves, and to participate in some specialized cultivation tasks.

It is apparent from both the Falla and CIERA definitions and from studies of individual estates that a producer with from 50 to 99.9 manzanas of coffee who employs from 10 to as many as 60 resident laborers and perhaps as many as 300 harvest laborers is, both functionally and socially, a member of the agrarian upper class. In a region of impoverished family farmers and landless laborers, the owner of even such a seemingly modest estate can be a political and social power to be reckoned with. An estate studied by Gariazzo et al. (1983b:61-65) in Diriamba, Nicaragua, for example, had 80 manzanas of coffee and employed a year round labor force of 2 resident and 20 day laborers and a harvest labor force of more than 80. The owner, a widow, lived in a seignorial, although somewhat decrepit, villa and her children had all managed to attain managerial or professional positions outside agriculture. She was a relative by marriage of a

prominent member of the prerevolutionary oligarchy who had been a close associate of the Somozas. Her late husband had been a shareholder in a major Nicaraguan beer bottler and although she no longer received income from the shares, it is clear that the family's interests extended outside agriculture. Socially and politically, her family was clearly part of the prerevolutionary Nicaraguan aristocracy. Similarly, the owner of a Costa Rican estate of approximately the same size (75 manzanas in coffee; 14 permanent; and 200 to 300 harvest workers) was a 13th generation descent of the conquistador, Juan Vazquez de Coronado, owned several other estates, as did several other members of her family, and maintained a lifestyle which could only be called sumptuous. Both her father and her brother had held influential posts in the Costa Rican national government (Interview Curridabat, Costa Rica, Feb. 1, 1984). As these examples make clear, in both Nicaragua and Costa Rica, it is possible for a family to achieve a position of national, social, and political prominence with a coffee estate much smaller than the vast coffee domains of Sao Paulo or the smaller but still sizeable estates of Guatemala. In both examples the owner or her family owned additional estates so that the actual economic base of both families is considerably broader than ownership of a single estate in the 50 to 100 manzana range would suggest. Such concentrated ownership is, however, the rule, not the exception in Central America so that the actual concentration of coffee land and production is much greater than the distribution by size of individual holdings would indicate. Analysis of the detailed ownership listings in the 1910 Nicaraguan coffee census (República de Nicaragua, 1910) suggests that multiple ownership was common especially among large growers. The same pattern is found in Costa Rica (Hall, 1982:53,86,110) and El Salvador (Colindres, 1976:471).

Nevertheless, it is also clear that relatively few growers at this level

control the financial resources associated with vertical integration from production to processing to export. Neither the Nicaraguan nor the Costa Rican estate described above had its own beneficio and neither estate owner was directly involved in exports. In general, control of larger amounts of coffee land is associated with both processing and export activity; smaller estate producers, despite their social and political prominence, typically lack the resources for such activities. As a result, an additional distinction was made between estate producers who control a farm with between 50 and 99.9 manzanas in coffee and integrated producers who control a farm with 100 manzanas or more in coffee. An estate producer will typically employ an administrator to oversee the day to day operations of the estate and to supervise the work of a large number of resident and harvest wage laborers. Although the ownership of such an estate, combined as it frequently is with ownership of other such estates, provides the owner with an upper class life style and the leisure in which to enjoy it, it will not typically be associated with processing, export, or financial activities in the coffee industry. The owner of an estate with 100 manzanas or more in coffee, on the other hand, will typically own his own processing plant, will often control an exporting firm, and will usually also own numerous other large estates. He will also possess the financial resources to diversify into other agricultural activities or into industry, finance, or real estate and these resources together will almost certainly assure national political and economic power. In Guatemala, for example, the German immigrant Erwin Paul Dieseldorf, the largest land owner in the Department of Alta Verapaz, controlled 15 coffee estates with a total area of almost 60,000 manzanas of which 694 were planted in coffee; processed all his own coffee to the parchment stage; acquired one of four plants in the Alta Verapaz for the final processing of parchment coffee; and

became one of Guatemala's largest exporters accounting for some 11,000 quintales (1 quintal = 46 kilograms) of his own and other's coffee in 1936-37 (Náñez, 1970:81,153,163,228). Juan Rafael Mora used his and his family's ownership of several coffee estates in nineteenth century Costa Rica to control 8 percent of total national exports in 1845 and 16 percent of national processing capacity in 1850. In 1850 he became president of Costa Rica and in 1858 his attempt to form a bank, independent of other coffee processors who, then as now, finance the Costa Rican crop led to a coup d'etat in 1859 and his eventual execution by firing squad (Hall 1982:45,51; Stone, 1982:197,387). Adolfo Benard, the Nicaraguan "Sugar King" owned estates of 123, 50, and 65 manzanas in coffee in the Department of Carazo and estates of 50, 60, and 90 manzanas in Granada in 1910 and their combined production accounted for two percent of the Nicaraguan total. Although he owned two processing plants and extensive sugar interests, he did not become involved in exports (Calculated from data presented in Republica de Nicaragua, 1910). In El Salvador in 1940, the Meardi family owned twelve processing plants and exported coffee under more than sixty different brand names (calculated from data presented in Asociacion Cafetalera de El Salvador, 1940:183-199). The economic and political role of such major integrated producers is clearly much greater than that of estate producers not involved in processing or export although both groups are clearly fractions of the same aristocratic class. It would, of course, be preferable to use direct measures of total holdings, processing plant ownership, and export activity but Central American coffee data are seldom presented in a form which would make such measures possible so that possession of at least one estate with 100 manzanas of more in coffee will be used as an indirect indicator of an integrated producer.

The distinction between estate and integrated producer in combination with

the earlier distinctions among smaller growers yields five functionally defined class positions in Central American coffee production--sub-family, family, small employer, estate, and integrated producer. Table 1 shows the distribution of coffee area and production by class position for each of the four major Central American coffee producers for time periods as close to the 1950s as available data permit. It should be kept in mind that the area intervals used to define class position always refers to area in coffee, not to the total area of the holding. Idiosyncracies of reporting and the absence of information on area in coffee for some countries make comparisons difficult and an effort, therefore, has been made to approximate the five category system defined by area in coffee for each country even if this requires some estimation of data. A detailed description of the estimation procedures used in Tables 1-4 may be obtained by writing the author directly.

INSERT TABLE 1 ABOUT HERE

The data in Table 1 make it possible not only to clarify some of the issues raised in the debates over coffee and class in Costa Rica and Nicaragua, but also to compare the class systems of each of the Central American coffee producers. Three major conclusions can immediately be drawn by inspection of Table 1. First, concentration of both land and production is notably greater in Guatemala than it is anywhere else in Central America. Not only are coffee area and production in Guatemala more concentrated than in Costa Rica or Nicaragua, they are also much more concentrated than in oligarchic El Salvador. Approximately two-thirds of both Guatemalan coffee area and production are controlled by integrated producers and an additional 17 percent is controlled by estate

producers. Family and sub-family producers are so inconsequential that little systematic data is collected on them and the small employer strata is of little greater importance. In Guatemala, the dominance of the large estate in coffee production is almost complete.

Second, Nicaragua and El Salvador show almost identical levels of concentration in both coffee area and production. Estate and integrated producers control approximately 53 percent of total coffee area in both countries and these two classes of large growers actually control a greater proportion of production in Nicaragua (64.2 percent) than in El Salvador (58.1 percent). Contrary to the view of Baumeister, Nicaragua is not an exception to the pattern of estate dominance in Latin American agriculture. The data in Table 1 indicate that Nicaragua more closely resembles El Salvador, a country with a well deserved reputation for oligarchic dominance, than it does Costa Rica. Only approximately 500 of some 9,600 coffee farms in Nicaragua in 1957-1958 accounted for half of the coffee area and almost two-thirds of total production. The small employer strata, while considerably more important than in Guatemala, is actually less important in Nicaragua than in El Salvador. The data in Table 1 do not show that Baumeister's bourgeoisie "chapiolla" was the dominant factor in prerevolutionary Nicaraguan coffee production. In neither Nicaragua nor El Salvador do the numerous small holdings of family and sub-family farmers make any substantial contribution to production; they control less than a quarter of the coffee area in Nicaragua and less than 20 percent in El Salvador. On the basis of the coffee class structure in Nicaragua and El Salvador revealed in the data in Table 1, similar patterns of oligarchic dominance would be expected in both countries. Despite these similarities in land ownership and production, the two coffee systems diverge substantially in production techniques, processing technology and

national control over exports so that in fact, the economic basis and the political behavior of the two coffee elites have been very different.

Although the national level Nicaraguan data presented in Table 1 provide little support for the Baumeister hypothesis, an examination of the internal structure of the Nicaraguan coffee economy indicates that, as might be expected, there is an element of truth in his argument. Table 2 presents data organized by the same five class categories used in Table 1 although they are, in keeping with Nicaraguan census practices, defined in terms of production rather than area in coffee (assuming 1957 yields).

INSERT TABLE 2 ABOUT HERE

The data in Table 2 reveal three different regional coffee systems in Nicaragua. The original center of Nicaraguan coffee production, the Departments of Managua and Carazo (Regions III and IV in revolutionary Nicaragua) contributed more than half of national production according to the 1910 Coffee Census. In these departments, the degree of concentration in 1957 actually exceeds that of Guatemala, and although it has increased slightly since 1910, has always been very high. In Matagalpa and Jinotega (Region VI), on the other hand, estate and integrated producers control less production although the overall distribution is similar to that of El Salvador in the 1950s. As the data on percent of national production by department indicate, Region VI is the most dynamic sector of the Nicaraguan coffee economy. The leading producing department has shifted from Managua in 1910 to Matagalpa in 1957. Gariazzo et al. (1983a:4) indicate that these trends have continued in the 1960s and 1970s. It is also significant that the small employer strata increased its share of total production in Region VI

between 1910 and 1957 while the estate sector lost ground. Since there is no reason to believe that these trends have not continued, the Region VI data lend some support to Baumeister's ideas on the importance of the small bourgeoisie in Nicaraguan coffee production. Wheelock's model, on the other hand, fits the Managua-Carazo region best (Wheelock is himself the scion of two distinguished Managua-Carazo coffee growing families) and there is also a substantial estate sector in Region VI where he conducted his field research on the large coffee farm.

The departments of Estelí and Nueva Segovia (Region I) contribute a small share of national coffee production but show a class structure dramatically different from that of the rest of Nicaragua or of the remainder of Central America. Small holders and small employers dominated production in both 1910 and 1957 and increased their share in both departments in the intercensal period. The integrated producer strata is absent in these departments, and the estate strata has almost disappeared in Nueva Segovia, although it retains a sizeable minority share of production in Estelí. By 1957 small holders dominated production in Estelí and small employers, in Nueva Segovia. Since production has been expanding in both these regions, particularly in the period after 1957, once again it would appear that the estate sector is not the center of dynamism in the Nicaraguan coffee economy. The data from Region I provide some additional support for Baumeister's hypothesis although this is a relatively minor coffee region.

The Table 2 data indicate why Nicaragua is more difficult to characterize than the other Central American coffee systems. The coffee sector actually contains three different class systems: a Guatemala-like domination by large estates in Managua and Carazo; a Salvadoran-like estate structure in Matagalpa

and Jinotega challenged by an expanding small employer strata; and a small holder and small employer dominated system in Estelí and Nueva Segovia which has no exact duplicate elsewhere in Central America. The differing views of Wheelock and Baumeister, then, reflect both the differentiated and changing character of the Nicaraguan coffee system. Wheelock's view emphasizes the traditional estate system which formed the economic base of the Nicaraguan oligarchy in the period before World War II; Baumeister's model fits best the dynamic new sectors which emerged with the rapid expansion of export production in coffee and other crops in the post-War period. Although the cross-national comparison of Table 1 would simply categorize Nicaragua with El Salvador as a system dominated by an estate based oligarchy, the internal data in Table 2 indicate that the Nicaraguan class system in coffee is actually considerably more complex. Since both revolutionary and counter-revolutionary forces are now engaged in armed competition for the support of Region VI coffee growers, the class structure of this area is of more than academic interest. Although the political implications of the Wheelock and Baumeister views are complex, it is clear that the success of the agrarian policies of the revolutionary government of which both are a part will depend, in part, on an accurate analysis of the class structure of the Nicaraguan coffee economy.

The third conclusion suggested by the data in Table 1 is similarly mixed. There is considerable support for both the Seligson and Hall views of the Costa Rican coffee system. It is clear that compared to El Salvador and Nicaragua, to say nothing of Guatemala, the small holding farmers control a much more substantial share of coffee area and production and that the estate sector is, correspondingly, smaller. Small holders are approximately twice as important in area and three times as important in production as they are in either Nicaragua

or El Salvador and the estate sector is, proportionately, approximately a third less important in both area and production. Differences of this magnitude reflect profound differences in the political and economic power of the coffee elites of Nicaragua and El Salvador relative to those of Costa Rica, and tend to support Hall's contentions regarding the strength of small holders and the weakness of the large estate in Costa Rican coffee production.

This conclusion must, however, be immediately qualified by noting that the most important small holding class is not the family farmers but rather the sub-family farmers who are not only much more numerous but control more production and area. Since in 1955, 19,000 of the 22,000 coffee growers in Costa Rica fell into the sub-family category, Seligson might well contend that Costa Rican coffee farmers were a semi-proletariat of land starved mini-farmers rather than an autonomous yeoman farmer class. The family farm is actually relatively insignificant in numbers, area, or production. Furthermore, a small number of large estates (184 of 22,000) control 30.6 percent of total coffee area and 37.5 percent of production. As Seligson contends, there is in fact a high degree of concentration in Costa Rican coffee production, although not so much as elsewhere in Central America. Although naive views of Costa Rica as the Switzerland of Central America will find no support from the data in Table 1, Hall's position does receive some support from the cross-national comparison. On the other hand, Seligson's image of a Costa Rica divided between a few large estates and a mass of proletarians is also supported by the data. But the situation is even worse elsewhere.

The data in Table 1 do not, however, provide support for the idea that the dominance of an independent yeoman farmer class provides the economic base for Costa Rican democracy and Costa Rican exceptionalism in Central America.

Although comparison between Costa Rica and either Nicaragua or El Salvador as a whole gives the impression of relative small holder dominance in Costa Rica, comparison with a region dominated either by small holders, such as Estelí, or small employers, such as Nueva Segovia (see Table 2) indicates that estate, and especially, integrated producers are in a position to exert considerable economic and political power over a dispersed and impoverished class of sub-family farmers. Since the integrated producers also control the processing of the small farmer's crop, the dominance is even greater than the area and production data alone would suggest. The failure of the Costa Rican coffee oligarchy to impose a coffee dictatorship of the Salvadoran variety cannot be explained simply by family farm dominance in coffee production.

The data in Table 1 not only provide a comparative portrait of the entire class structure of Central American coffee production, but also provides information which makes possible an assessment of the absolute economic and political strength of Central American coffee producers, both individually and as a class. Table 3 presents the information in Table 1 in a slightly different form to emphasize these differences.

INSERT TABLE 3 ABOUT HERE

The data on mean area and mean production of estates with 100 manzanas or more in coffee by country, provide indirect information about landed power, best measured by mean area, and wealth, best measured by mean production, of the average individual large estate owner in each country. Once again, Guatemala is unique. The extremely large mean coffee land area controlled by individual estate owners (342 manzanas) is almost one and a half times the mean size of large estates

elsewhere in Central America. It is also notable that the optimum size of an estate seems to be approximately the same in Costa Rica, Nicaragua, and El Salvador--200 manzanas. Contrary to Hall's view, Costa Rican estates are not markedly smaller than those of El Salvador and are in fact, larger on average than those of Nicaragua. Comparison with Guatemala is, of course, misleading since both in overall distribution and in average size of large estates it is an exceptional case.

The data on mean production indicate a distinctly different pattern of economic power. Salvadoran growers manage to produce more coffee per estate than Guatemalan growers despite the much smaller average area in coffee of their estates. Since the Salvadorans are producing more coffee on less land, their efficiency and hence profitability and financial power should be greater than the approximately equal average production per estate in the two countries would suggest. The average production of large Costa Rican estates lags somewhat behind the average production of Salvadoran or Guatemalan estates and the Nicaraguan integrated producers are the weakest in Central America by a considerable margin (half the production per estate of Costa Rica, approximately a third of that of Guatemala or El Salvador). This pattern of efficiency, productivity, and economic strength of Salvadoran growers and the inefficiency, backwardness, and economic weakness of Nicaraguan producers also appears in data on technology and processing to be presented below. Although the distribution of coffee land and production does not differ appreciably in the two countries, differences in productivity make the Salvadoran and Nicaraguan growers, respectively, the economic strong and weak men of Central America.

The information on mean area and production for estates with more than 100 manzanas in coffee in the first two columns in Table 3 provides an index of the

political and economic power of individual Central American coffee growers. The data on total area and production for all estates with more than 50 manzanas in coffee in the third and fourth columns of Table 3 provide an index of the absolute political and economic power of the coffee growing classes as a whole. Measured once again by control over land, the Guatemalan elite is in a class by itself. The total coffee area controlled by large growers in Guatemala is twice that of El Salvador, three times that of Nicaragua, and eight times that of Costa Rica. Total production, however, is almost as high in El Salvador as it is in Guatemala even though Guatemalan growers control as a class twice as much land. Once again, the Salvadoran elite is distinguished by its greater productivity and efficiency. Nicaragua and Costa Rica lag far behind the region's two top producers in both total area and total production. Although both individually and as a class, Costa Rican estate owners produce more coffee per unit area than do Nicaraguan growers, the total power of the Costa Rican elite as a whole, assessed in terms of either coffee land or production, is actually less than that of the Nicaraguan elite. The reasons for the relative weakness of the Nicaraguan and Costa Rican coffee elites are, however, different. The Nicaraguan elite was weak because it was inefficient; the Costa Rican elite was weak because it lost control over a substantial share of production to a class of small holders.

It has been assumed throughout that control over land implies control over people, although it is clear that some forms of productive organization lead to more control over people than others even if the same amount of land is involved. Table 4 assesses this idea directly by presenting the number of workers under administrative control by estate owners (resident or permanent workers) and the number under temporary control (harvest migrants) for the three Central American producers for which data are available. Data are from coffee censuses conducted

in the period from 1935 to 1942. Data on labor force organization is not presented in later censuses.

INSERT TABLE 4 ABOUT HERE

It is clear from the data in Table 4 that the Guatemalan coffee elite controlled approximately three times as many resident laborers as did the Salvadoran elite even though Salvadoran production was only slightly less than Guatemalan. The absolute difference in the size of populations controlled is actually greater than these figures suggest because the families of resident laborers usually lived with them on the estate. Since families of permanent workers could be mobilized to help in the harvest, the number of outside harvest migrants is greater in El Salvador than in Guatemala. Nevertheless, the total harvest labor force including hired outsiders, permanent workers, and the working members of their families is greater in Guatemala (350,000) than in El Salvador (310,000).

The data in Table 4 support the relative positions of the Salvadoran and Guatemalan coffee elites suggested by the land and production distribution data of Tables 1 and 3. Control over more land does translate into control over more people, all other things being equal. The comparative labor force data in Table 4 also indicate that the El Salvadoran growers used their permanent labor force much more efficiently since output per permanent worker is almost three times higher in Salvador than in Guatemala. The mechanical limitations of hand picking restrict any such dramatic productivity differences in harvesting, however. Once again, the Salvadoran elite is distinguished by its vastly more efficient production system; the Guatemalan elite, by its greater control over land and people in a relatively inefficient system.

The difference between El Salvador and Guatemala in control over people is actually much greater than the data in Table 4 would suggest since control is qualitatively as well as quantitatively distinct in the two countries. Since its origins in the late nineteenth century, the Guatemalan coffee production system has been dominated by various forms of forced labor (Bingham, 1974; Cambranes, 1982; Garland, 1968; Grieb, 1979; McCreery, 1983; Nañez, 1970) which have varied only in whether effective control was exercised by the state or individual planters. During the dictatorship of Jorge Ubico (1931-1944), the state required that the Indian population work a minimum of 100 or 150 days a year for a private employer or the state and made state employment sufficiently onerous to compel labor in coffee (Grieb, 1979:39). Both before and after this period, debt servitude and labor contractors under the control of estate owners provided labor with only the indirect involvement of the state in maintaining the legal structure that made these institutions possible. This system, which continues to function today, has been described in detail by Nañez (1970:317-348), Pansini (1977:9-21), and Schmid (1967:181-204) among others. Typically, laborers were advanced money by estate owners but never managed to work off their debts and became permanently indebted. Since debts could be inherited by the beginning of this century, a distinct class of hereditary serfs (colonos) had developed on coffee estates and institutionalized serfdom (colonaje) had come to be sanctified in Guatemalan law and custom. In some particularly notorious cases such as the Finca San Francisco owned by Enrique Brol (Anon, 1982; personal communication, James Birchfield, 1985), owners were able to rule like medieval dukes backed by squads of armed guards. Even progressive planters like Erwin Paul Dieseldorf intentionally acquired lands simply to control the labor of colonos resident on them and combined modern management techniques with medieval labor organization

(Nañez, 1970:317-348). Modern corporate farms like "El Pilar" studied by Pansini (1977:14-21) used exactly the same legal forms as the most backward grower in remote interior regions. The resident colono labor force was supplemented by gangs of harvest migrants (cuadrilleros) who were recruited into fixed term debt servitude by a system of advances (habilitaciones) controlled by unscrupulous labor contractors (habilitadores). These gang laborers were seldom able to work off all their debts and differed from the resident colonos principally in the fixed term nature of their contracts and the absence of even the limited legal protection afforded the colonos.

This elaborate legal system of forced labor is not duplicated elsewhere in Central America although varying degrees of extraeconomic coercion such as the use of company stores in Nicaragua (Wheelock, 1980:92), rural patrols in Salvador (Trujillo, 1980:128) or estate housing or subsistence plots in Costa Rica (Stone 1980:110) were universal. Guatemala is unique not only in the numbers of people and vast amounts of land controlled by its coffee elite but also in the elaboration of an institutionalized system of forced labor backed by both the informal armed power of the coffee planters and the formal armed power of the state. The observation of one North American visitor in 1908 that Guatemala had so many soldiers that it looked like a penal colony (Bingham, 1974:105) is as true today as it was then. Backed by domination of Guatemala's most productive land, producing its most important source of wealth, and controlling a vast dependent population through state sanctioned forced labor, the Guatemalan coffee elite became a political force that has no exact parallel in the other coffee producing countries. Not even in El Salvador was such extensive control over land and people possible.

The Costa Rican data in Table 4 are not directly comparable with those of El

Salvador and Guatemala since the 1935 Costa Rican coffee census reports the number of persons working on coffee estates, not the number of workers resident on the estates as in El Salvador or Guatemala. Since many Costa Rican coffee workers were day rather than resident laborers, the difference in reporting conventions may reflect real differences among the systems. Nevertheless, it is clear that the Costa Rican elite could not have controlled, at a maximum, more than a third the number of workers resident on Guatemalan estates and the actual number of resident laborers is probably considerably less. Comparison with the data on El Salvador is probably misleading for the same reason. The principal value of the data in Table 4 for Costa Rica is to indicate that the ratio of small holders to hired laborers was much higher in Costa Rica than in either El Salvador or Guatemala, although the small holders and hired laborers could, of course, be the same people. Nevertheless, it is clear that the Costa Rican elite faced a lower class divided by the ownership of small amounts of property. Class polarization was considerably more advanced in El Salvador and Guatemala than it was in Costa Rica. When the Costa Rican coffee elite eventually faced a challenge from rural workers, it came from workers in bananas, not coffee (Seligson, 1980:49).

The analysis of land, coffee, and people demonstrates that Guatemalan and Salvadoran growers, both individually and as classes, were both relatively powerful but for different reasons. The Guatemalan coffee elite controlled more land and people and controlled the people more tightly than did any other coffee elite in Central America. Its power rested on the captive allegiance of its serfs and the armed force at its command. The Salvadoran planter elite became the most productive, efficient, and profitable in Central America. But it controlled fewer people and controlled them less securely. Its power was more

financial than military although it too used a captive state for its own purposes. The coffee elites of Nicaragua and Costa Rica gained neither the military and political power of the Guatemalans nor the financial power of the Salvadorans. Although control of Nicaraguan coffee land was as concentrated as it was in El Salvador, the Nicaraguan coffee elite never approached the productive efficiency of the Salvadorans and remained the least productive planter class in Central America. Its low level of productivity severely restricted its financial power. Although many Costa Rican growers controlled estates as large as any in Central America outside Guatemala, as a class they never gained the concentrated control over land and production achieved in El Salvador or Nicaragua. Instead, they shared this control with a persistent class of sub-family farmers. The coffee elites of Guatemala and El Salvador gained political and financial power, respectively. The elites of Costa Rica and Nicaragua failed to gain political or financial power, respectively. These differences are further accentuated by substantial differences in control over production technology, processing, and export.

Production, Processing, Export

The differences in production per unit area evident in Tables 1, 3, and 4 are based on substantial differences in the technology of production and superiority in production tends to be associated with technical sophistication in processing as well. As might be expected from these data, El Salvador has been the traditional leader in production technology followed by Costa Rica. Guatemala lags behind Costa Rica and is far behind El Salvador; Nicaragua is at or slightly behind the Guatemalan level. In processing, Costa Rica and Salvador are the clear leaders with Guatemala close behind and Nicaragua trailing with remarkable low levels of efficiency for most of its history.

Table 5 presents three readily accessible indices of technical sophistication in production: arabica variety; fertilizer use; and density of plantings. By the 1950s Salvador had already made the transition from the traditional Central American varieties, Typica and Maragogipe, to the hardier and higher yielding Bourbon strain. In 1957 more than two-thirds of Salvadoran coffee area was in modern varieties while the transition had hardly begun in either Nicaragua or Guatemala and extended to only approximately a third of the coffee area in Costa Rica.

INSERT TABLES 5 AND 6 HERE

Although fertilizer use statistics by area are not available for El Salvador, the relative position of Costa Rica compared to Nicaragua and Guatemala is the same as in the variety sub-table. In the 1950s organic or chemical fertilizers were used on 35.7 percent of the total Costa Rican coffee area. The corresponding figures for Nicaragua and Guatemala are 5.0 and 11.9 percent respectively. Density of plantings was almost twice as great in Salvador as it was in Guatemala. The reliability of the Nicaraguan density data is questionable since it appears to be census practice to assume rather than count 1,000 trees per manzana. The technical superiority of El Salvador is indicated most clearly in yields (expressed in quintales per manzana) for selected periods from World War II to the present (Table 6). For most of the period, Salvadoran yields are more than twice those of Guatemala or Nicaragua and substantially greater than those of Costa Rica. By 1978 government sponsored technical development programs in Costa Rica had reversed the relative positions of El Salvador and Costa Rica and by 1980 Costa Rica was clearly in the lead. Still, for most of the period,

Salvador had the highest yields not only in Central America but in all of Latin America and, with the exception of some relatively minor producers, the highest yields in the world (United Nations Food and Agriculture Organization, 1981:184). By 1980 Costa Rica had assumed the lead in both Central and South America and, excepting minor producers, had the third highest yields in the world (Ibid.).

The differences in production technology between El Salvador and Costa Rica on the one hand and Guatemala and Nicaragua on the other are pronounced and have been so for some time. In June, 1937 the Colombian agronomist Juan Pablo Duque made a survey of Central American production for the Colombian coffee board which was worried about increased competition. His description of the relative technical positions of the four Central American coffee systems (Duque, 1938), summarized in Table 7, is echoed in other cross-national surveys (Cardoso, 1975; Hearst, 1929; Jamaica Coffee Industry Board, 1959; Torres-Rivas, 1975) as well as in studies of the technical organization of individual systems (Browning, 1971; Dominguez, 1970; Gariazzo et al., 1983a; 1983b; Hall, 1978, 1982; Keith, 1974; Morrison and Norris, 1954; Nanez, 1970; Radell, 1964).

INSERT TABLE 7 ABOUT HERE

Although production technology has changed over the twentieth century, the relative positions of the four producers remained constant until the Costa Rican surge in the 1970s. Duque (1938:41,50) found that harvesting techniques were similar in Costa Rica, El Salvador, and Guatemala although more passes were made in Costa Rica. In Nicaragua, however, then as now, pickers strip or milk the branches of a mixture of ripe and unripe berries, leaves, twigs, buds, and other detritus damaging the trees, reducing yields and producing a low grade of coffee

(Duque, Ibid.:45; Hearst, 1929:120; Playter, 1927:26; Radell, 1964:48). It is not entirely clear why this practice has persisted in the face of determined government and private efforts to suppress it, but it may be related to the relative backwardness of Nicaraguan processing technology which cannot produce higher grades of coffee no matter what quality harvested fruit is used as input (Keith, 1974:92; Radell, 1964:25,51). In pruning, Costa Rica and El Salvador had a distinct advantage since in most areas of Nicaragua and Guatemala, the coffee bush was allowed to grow freely with only maintenance cutting (Duque:23-36). In Nicaragua the elaborate pruning system developed by the progressive grower Arturo Vaughan ("poda Vaughan") is used on some of the larger estates on the Carazo plateau but not elsewhere (Radell, 1964:16). The distinct Costa Rican style of pruning which encouraged candelabra-like branching had some success among progressive planters in Guatemala but was not generally adopted (Dominguez, 1970:134,138). In 1937 Duque (Ibid.:5) found a "great preoccupation" with the use of chemical fertilizers in Costa Rica and the 1935 coffee census found that 30 percent of Costa Rican coffee lands were fertilized (Costa Rica, Instituto de Defensa del Café de Costa Rica, 1935:59). This compares with 5.0 percent of Nicaraguan and 11.9 percent of Guatemalan coffee lands as late as the 1950s (Table 5). Duque (Ibid.:10) also found an active interest in fertilizers in El Salvador as well as the extensive use of the izote plant (yucca sp.) as a fertilizer supplement or substitute. Nicaraguan growers used very little fertilizer then and, in substantial areas of the country, very little now (Gariazzo et al. 1983b:12). Duque also found substantial interest in fertilizer among Guatemalan planters but Dominguez (1970:167) reports that its use was confined to German planters and the data in Table 5 indicate that fertilizer use was not widespread in the 1950s. Costa Rican and El Salvadoran planters used the

most advanced techniques of harvesting, pruning, and fertilization. Nicaragua used the most primitive methods in all three areas, and Guatemala used advanced techniques in harvesting only.

Transportation technology was most highly developed in El Salvador and Costa Rica where good roads made it possible to use ox carts and later trucks to quickly bring harvested berries from farm to processing plant (Duque, Ibid.:40,47-48; Hearst, 1929:42-44; Seligson, 1982:34). The primitive transportation network of North Central Nicaragua made even the use of ox carts difficult and much coffee was moved on the back of mules. Roads were better in the Managua-Carazo area but much of the crop was moved by mule or oxcart rather than by truck (Duque, Ibid.:45-46; Radell, 1964:27,54). In Guatemala there were also regional variations but in general carts, pack animals, and unique in Central America, human bearers were used to transport coffee (Biechler, 1970:18; Duque, Ibid.:50; Nañez, 1970:251-253). In the remote Alta Verapaz region, human bearers carried 100 pound bags of coffee as much as forty miles (Nañez, Ibid.:284). The poorly developed transportation system of Nicaragua severely restricted the development of processing technology since the harvested crop could not be brought to a central location quickly enough to avoid spoilage. In Guatemala, where most estates were large enough to afford their own processing plants, poor transportation did not restrict processing as severely but much coffee was still sold in the partially processed parchment stage (Biechler, 1970:171-172).

Processing technology, too, was most advanced in Costa Rica and El Salvador where imported European and North American power driven equipment was extensively used in large industrial installations frequently located off the farm in cities or other central locations (Duque, Ibid.:51; Hall, 1982:50-51; Hearst,

1929:139-140; Seligson, 1982:34). European, especially German, growers in Guatemala were responsible for many of the technical innovations in the coffee industry world-wide including development of the widely used "Guardiola" and "Okrassa" coffee dryers and the "Smout" and "Okrassa" shellers and polishers, but technological innovation ceased after World War I and the processing industry stagnated (Dominguez, 1970:264-265). In the 1930s Duque (Ibid.:51) found that the processing industry in Guatemala trailed those of Costa Rica and El Salvador and the gap is even wider today. In the Managua region of Nicaragua the development of processing was handicapped not only by poor transportation but also by a shortage of water, and before World War II as much as half of the crop was processed using the dry method. Even though by the 1950s 90 percent of the crop was wet processed, the shortage of water led to the improper washing of much of it. In Carazo, where transportation was better, the water shortage also led to improper washing although most of the crop was processed in centralized plants as in El Salvador and Costa Rica. In North Central Nicaragua there was plenty of water but so few roads that partial wet processing was done with homemade equipment and much coffee was stored for weeks or months before being processed (Keith, 1974:92; Radell, 1964:24-26,51). As a result, it was impossible to maintain quality standards in Nicaraguan coffee while quality control was high in Costa Rica, El Salvador, and even in Guatemala.

Duque's observations on the superiority of Costa Rican and El Salvadoran processing technology are also supported by the data in Table 8 which show the number of processing plants in each of the four countries for the period from the late nineteenth century to the present.

INSERT TABLE 8 ABOUT HERE

As a general rule, the smaller the number of plants, the greater their technological sophistication, the greater the number of farms served by a given processor, and the better the transportation system on which they depend. A small number of plants also indicates that they are industrial installations located off the farm often in urban areas. Costa Rica and El Salvador have always had a relatively small number of processing plants, approximately 200 before World War II, and by 1972 the number declined to 114 in El Salvador and 83 in Costa Rica. The much greater number of processing plants in Nicaragua is a result of the large number of homemade wet processing systems in the Matagalpa-Jinotega region. In Guatemala the large number reflects a decentralized large estate based processing system. Since in the 1950s Salvador and Guatemala processed approximately equal amounts of coffee, the average Salvadoran plant processed more than ten times as much coffee as the typical Guatemalan plant and the scale of the facilities varies accordingly. In fact, El Salvador possesses what is said to be the largest processing plant in Central America, El Molino (Wellman, 1961:Plate 27, facing p.177). The relative numbers of Salvadoran and Costa Rican plants suggest that the scale of Costa Rican technology is similar. Observation of plant operations in the Barba canton of Costa Rica by the author substantiates this. Although Salvador has traditionally been the leader in production technology, both Costa Rica and Salvador have highly developed processing systems. In fact, the Costa Rican coffee elite, as Hall (1982:52-53) and Seligson (1975:24-25) both argue, is largely an elite of coffee processors, not producers.

Given the substantial economic gains to be realized through scientific cultivation and industrial processing, it might be asked why all the Central American countries did not follow the path of Salvador and later Costa Rica toward the full rationalization of both production and processing. For Nicaragua the answer, as Wheelock (1980) has demonstrated, is to be found in the politics of intervention. In 1910 Nicaragua took its first coffee census — a remarkably detailed document. In 1912 the United States Marines arrived not to leave again until 1933. Their war against Augusto Cesar Sandino was fought in the heart of the Matagalpa-Jinotega coffee belt and there is little doubt that the intervention stopped the rationalization and expansion of production in what later would become Nicaragua's most dynamic coffee zone. It was not until the 1950s that expansion resumed in this region. Nicaragua did not take another coffee census until 1957. The intervention also deprived the coffee elite of control over exports which passed into the hands of American banks.

In Guatemala, United States' intervention involved bananas not coffee (Jonas and Tobis, 1974; Schlesinger and Kinzer, 1982) and estate size was certainly large enough to generate capital for modernization. The failure to rationalize the industry is clearly related to the temptations of forced labor and a racist legal structure. With labor virtually free for the taking, thanks to state enforced debt servitude, and the Indian population with almost no protection from planter land grabs, there was little incentive to rationalize production. Land costs remained vastly lower in Guatemala than in Costa Rica (Cardoso, 1977:175; Stone, 1980:96) and wage levels were the lowest in Central America (Duque, Ibid.:58; Hearst 1929:125). Indeed, what is surprising about Guatemala is not how little rationalization of production took place, but how much. But it took place almost entirely among German planters who were more closely tied to world

capitalism than to the extractive society of colonial Guatemala. Once the Germans were expropriated during World War II, the Guatemalan coffee elite reverted to doing what it had always done best — living in luxury on the tribute of a captive Indian population. Technological innovation stopped and planters and their allies in the military devoted themselves to the rationalization, not of coffee production but of state terror.

Costa Rica lagged behind El Salvador in production technology but not in the industrialization of processing. Although the elite of integrated producers rapidly modernized and large estates such as Aquiares studied by Morrison and Norris (1954) or Concavas studied by Hall (1978) were models of productive efficiency, the yield figures for smaller growers (see Table 1 above) indicated that they were slow to rationalize production. The small growers remained captives of the processing plant owners until the economic crisis of the depression when the establishment of the Instituto de Defensa del Café shifted some measure of control to the state. After the 1948 revolution, the Oficina del Café pushed through a technical development program that substantially benefited the small growers and caused Costa Rican yields to exceed those of El Salvador by the 1970s (Hall, 1980:153,159; Seligtson, 1975:28). As long as the impoverished sub-family coffee farmers of Costa Rica were under the unrestricted control of the coffee processing elite, they lacked both the capital and the technical knowledge necessary to rationalize production. The failure of the small producers to modernize without state intervention is another indication of the unequal distribution of wealth and power in the Costa Rican coffee system.

In El Salvador the complete rationalization of production and processing early in the century enabled the coffee elite to move downstream into export and thereby gain control of what Sebastián (1979:950-951) calls the "power pyramid"

of coffee land, processing, and export. The data in Table 9 show this this pattern as it existed in 1940 according to the first Salvadoran coffee census (Asociación Cafetalera de El Salvador, 1940:183-199).

INSERT TABLE 9 ABOUT HERE

The census lists the names of the owners of all processing plants in the country as well as the holders of all export licenses listed by export brand name. Although the number of export brands is only an approximate measure of export activity, the listing of owners by name makes the 1940 census a particularly valuable source on the overlap in processing and export in El Salvador. The left half of Table 9 lists, by family surname, the number of processing plants and export brands controlled by families with four or more processing plants in descending order of the number of plants controlled. It is clear from these data that almost all large processors were also active exporters. The right half of Table 9 lists by family name, the number of export brands and processing plants controlled by those families and companies with the largest number of registered export brands in descending order by the number of export brand names. It is clear from these data that the most active exporters were, for the most part, also owners of large numbers of beneficios. The exceptions to this generalization are largely international trading firms like Curaçao or Nettlebohm who are primarily buyers not processors. Still, with these exceptions, the names on both lists represent a who's who of the Salvadoran oligarchy (cf. Aubey, 1968-1969; Baloyra, 1982; Colindres, 1977). The "power pyramid" of coffee processing and export in El Salvador conferred power over other export crops, especially cotton and sugar, and frequently control in finance and industry as

well. Torres-Rivas (1982) has called the Central American elite a "three-footed beast" with one foot in export agriculture, one in finance, and one in industry. No coffee elite in Central America fits this description better than the Salvadoran. An elite of fully integrated producers controlled the coffee system and much else as well.

The most dramatic contrast to the fully integrated production system and powerful coffee elite of El Salvador is the case of Nicaragua. The Nicaraguan coffee elite achieved neither the rationalization of coffee production nor hegemonic power in Nicaraguan economy or society. Table 10 presents a list of individuals who might have been the founders of the Nicaraguan coffee oligarchy if intervention, civil war, and the rise of the Somoza dynasty had not undermined their economic and technical power and denied them a political opening.

INSERT TABLE 10 ABOUT HERE

The table shows the 11 largest growers in the Department of Carazo as they were recorded in the 1910 coffee census (República de Nicaragua, 1910) on the eve of the 1912 United States intervention. In 1910 Carazo was not only the department with the second largest (after Managua) production, but also possessed relatively favorable growing conditions and technologically progressive planters. The largest producer was Arturo Vaughan (mispelled Vaugham in the census), the developer of the system of pruning which bears his name. His leading position was due not to his control over a large area in coffee but rather to his complete rationalization of production. His yields of 22.5 quintales/manzana actually exceed the national average of Costa Rica, Latin America's technological leader, in 1982. Vaughan might be taken as typical of the Salvadoran-type integrated

producer who might have formed, along with other technologically progressive planters, the nucleus of a Nicaraguan coffee oligarchy. Vaughan's estate, San Francisco, is still owned by his family and is in production today; the current owner, also named Arturo, has diversified to become one of Nicaragua's largest egg producers.

But it was not the descendents of Arturo Vaughan and other technologically sophisticated producers such as Carlos Wheelock in nearby Managua who became the masters of Nicaragua, but the son of the 11th largest producer in Carazo whose yields were only a third (7.8 quintales/manzana) of those of Arturo Vaughan and who did not control sufficient land to be included in the "integrated producer" class in this study. The rise of Anastasio Somoza to become ruler of Nicaragua and its largest coffee producer was, of course, based on international power politics, not coffee wealth. Anastasio Somoza García was sufficiently impoverished to have worked as a used car dealer in the United States and gained his political prominence in part through his command of English (Millet, 1977:51). It would take a revolution to bring to power the coffee growing Wheelock family in the person of Jaime Wheelock, a member of the FSLN (Frente Sandinista de Liberación Nacional) since 1969 and currently Nicaraguan Minister of Agriculture. But Wheelock's policies for the reorganization of coffee production are as far as could be imagined from the dreams of oligarchs, Nicaraguan or Salvadoran.

Although some members of the 1910 Carazo planter elite owned their own processing plants (Table 10), none owned as many as members of the Salvadoran elite and in fact, Carazo coffee processing technology was in a prolonged state of arrested development because of a shortage of water. Exports were, of course, controlled by American banks in partnership with the Nicaraguan national

bank. Two families of Carazo planters listed in Table 10, the Rappacciolis and the Baltodanos, did become major factors in exports in the 1950s, but by then they had fallen behind their counterparts in El Salvador or Costa Rica in accumulating export based economic power. Furthermore, their ability to diversify into other areas of the economy or even expand their coffee holdings was severely limited by the dominance of Somoza family interests. Technologically backward in both production and processing, deprived of control over exports, and hemmed in by the Somozas, the Nicaraguan coffee elite never completed the transition from estate to integrated producers. If the Salvadoran coffee oligarchy rested on a power pyramid of coffee, processing, and export, the Nicaraguan coffee economy was a pyramid without a base.

CONCLUSIONS: COFFEE AND POLITICS

The empirical analysis has demonstrated that each of the four principal Central American coffee producers gained a relative advantage in one phase of the production process: Guatemala, in land and people; El Salvador, in production; Costa Rica, in processing; and Nicaragua, in nothing. The relative positions of the four producers ca. 1940 are shown in Figure 1 where an "X" represents a relative advantage in the development of one phase of the production sequence.

INSERT FIGURE 1 ABOUT HERE

The Guatemalan elite, particularly in its national sector, was characterized by large estates, large amounts of land under estate control and large numbers of people under tight seignorial restrictions. Estates owned by Guatemalan nationals were never characterized by rationalized production technology and, before World War II, processing and exports were largely controlled by Germans.

Salvadoran coffee estates did not match those of Guatemala in size or number of people under direct control. Indeed, the Salvadorans substituted migratory harvest for resident labor gaining economic efficiency by surrendering a substantial measure of the kind of political control exercised by the Guatemalan elite. But the Salvadoran producers became, for much of the century, the most efficient in the world and this substantial technical advantage translated into control over both processing and export. As Figure 1 indicates, Salvadoran producers moved downstream to completely control the coffee production process from field to wharve and thereby became the only fully integrated producers in Central America. The Costa Rican elite never managed to separate a persistent class of mini-farmers from their tiny coffee fields and instead moved downstram into processing which gave them indirect economic control over the mini-farmers but lost them any claim to the political hegemony exercised by the Guatemalans. Their control over advanced processing technology led, in turn, to control over exports but the processing-export complex lacked the key element in the Salvadoran power pyramid -- control over coffee land and production. In Nicaragua none of the elements of the Salvadoran pyramid emerged. Hobbled by United States' intervention and dynastic rule, the Nicaraguan elite failed to carve out a distinct base of economic power in any phase of the production process.

These differences in both the nature and the strength of the economic base of the Central American coffee elites generated both differing elite structures and differing forms of social and political behavior. Table 11 presents lists of the members of the "oligarchies" of Nicargua, Guatemala, and El Salvador (no comparable data was available for Costa Ricaa) constructed by researchers with other interests. An "X" next to a family name indicates that the family fortune

was or is based on coffee wealth. Although the measure is a crude one and the definitions of "oligarchy" differ somewhat in the various sources noted in Table 11, a clear pattern emerges.

INSERT TABLE 11 ABOUT HERE

As might be expected, the Salvadoran coffee elite dominates the Salvadoran oligarchy with the fortunes of approximately two-thirds (19 of 30) of its families based on coffee wealth. In Guatemala where the oligarchy derived its wealth from commercial and industrial activity as well as from coffee, the proportion of coffee families is lower but still substantial (11 of 20). In Nicaragua only 5 of the 21 members of Wheelock's (1980:188) "financial oligarchy" came from families whose wealth was based primarily on coffee. The list is heavily weighed toward the pre-coffee colonial cattle raising elite (Cardenal, Chamoro, Sacasa, Pellas) or the post-coffee cotton barons (Montealegre, Reyes, Lacayo). Of the Carazo growers listed in Table 10 above only the families of Tefel, Baltodano, and Gonzales make it onto Wheelock's list and Anastasio Somoza Debayle is, of course, a special case. Arturo Vaughan is nowhere to be seen despite his family's continued economic activity in Nicaragua. Coffee brought great economic power to the Salvadoran elite, lesser but still substantial power to the Guatemalan elite and very little power to the Nicaraguan elite. In the case of Costa Rica, Stone (1982:351) argues that coffee planters were an important, but far from the only, source of capital for other sectors of the economy. His data suggest that in economic power, the Costa Rican elite falls somewhere between the Guatemalan and Nicaraguan elites and probably closer to the former. It should be kept in mind that Table 11 lists members of the economic

elite only and therefore understates the immense political power granted to the coffee barons of Guatemala through their control of serfs and armed men. But it further emphasizes the difference in the base of power of the Salvadoran and Guatemalan elites.

The diverse political fates of these four coffee elites who have dominated Central American society and politics for more than a century closely correspond to the strength and character of their economic base. In Nicaragua a revolutionary movement rising from the hills of the Matagalpa-Jinotega coffee zone overwhelmed a government without a base in a weakened coffee oligarchy. In the end, even if the Nicaraguan coffee oligarch's had wanted to form a united front with Somoza, they lacked the economic and political power to do so. Although some joined him, many others, or their sons, joined the opposition. The very wells from which Somoza drew his strength -- his total control over Nicaraguan economy and society -- fatally weakened his natural allies in the coffee oligarchy. The United States' intervention in the 1920s and 1930s destroyed just that social group that has proved to be its most loyal ally in Guatemala and El Salvador in the 1970s and 1980s -- the coffee oligarchy. In Guatemala the coffee elite and, increasingly, its allies in the military have used the immense repressive apparatus of a forced labor society to fend off continual challenges from below, although with increasing difficulty. The Salvadoran coffee elite, the strongest economic force in Central America, paradoxically finds itself in sufficient difficulty to require extensive outside military aid. It also was forced to weather the only mass Communist insurrection in Latin American history in the matanza of 1932. Displaced subsistence farmers converted into agricultural wage laborers, first in coffee then later in cotton, have become a revolutionary rural proletariat driven by the fires of desperation.

How long the Guatemalan oligarchy stands is a matter of debate but it is clear that El Salvador would fall tomorrow without United States military aid. By surrendering seignorial control over its labor force, the Salvadoran elite gained economic power but may have lost its life as a political entity. Finally, in Costa Rica, the coffee elite found to its great amazement that it had been pushed from political power by a revolution which it had originally backed in the hope of protecting its economic and political position. Its weakness in the face of the challenges of the 1948 revolution and the rising Costa Rican middle and working classes may have come as a shock to a class which had been ruling the country without interruption since the rise of the coffee export economy in the mid-nineteenth century. But it is not surprising considering the limited economic and political resources on which its power rested. In Costa Rica, El Salvador, Guatemala, and Nicaragua, coffee has shaped history for more than a century. It has also, in fundamental ways, shaped the political challenges of the present and the political possibilities of the future.

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Table 1. Coffee Area and Production for Costa Rica (1955), Nicaragua (1957-58), El Salvador (1940, 1957-58) and Guatemala (1966-67) by Class Position of Producers.

Coffee Area in Manzanas

Class Position	Farm Area in Coffee	COSTA RICA 1955		NICARAGUA 1957-58		EL SALVADOR 1940		GUATEMALA 1966-67	
		No. Farms	% Total Area	No. Farms	% Total Area	No. Farms	% Total Area	No. Farms	% Total Area
Sub-Family	0--4.9	19,049	33.6	5,762	11.4	9,768	-----	25-	-----
Family	5--9.9	1,775	14.2						
Small Emp.	10-49.9	979	22.1	1,256	22.6	1,322	27.4	606	4.6
Estate	50-99.9	101	8.6	314	19.2	263	16.4	1,148	17.2
Int. Prod.	100+	83	21.6	212	33.6	192	37.3	636	66.5
Totals		21,987	100.1	9,603	99.9	11,545	100.0	-----	99.9
Total Area		80,574		123,253		117,216 (1940)		330,900 (1964)	
						178,070 (1957-58)			

Coffee Production in Quintales of Green Coffee

Class Position	Farm Area in Coffee	COSTA RICA 1955		NICARAGUA 1957-58		EL SALVADOR 1957-58		GUATEMALA 1966-67	
		Yield	% National Production	Yield	% National Production	Yield	% National Production	Yield	% National Production
Sub-Family	0--4.9	5.6	29.5	1.2	3.5	7.4	-----	---	-----
Family	5--9.9	5.7	12.7	12.7	9.3	-----	-----	-----	-----
Small Emp.	10-49.9	5.9	20.3	3.9	22.9	10.7	28.4	12.8	7.3
Estate	50-99.9	7.3	9.8	4.3	21.3	12.5	19.7	8.6	17.1
Int. Prod.	100+	8.2	27.7	4.9	42.9	11.9	38.4	7.6	62.4
Totals		\bar{X} =6.5	100.1	\bar{X} =3.9	99.9	\bar{X} =10.6	100.0	\bar{X} =6.6	99.9
Total Prod.		522,998		474,683		1,891,201		2,188,517 (1964)	

Sources: Costa Rica: Costa Rica. Dirección General de Estadística y Censos, 1957:101,230. Nicaragua: Nicaragua. Dirección General de Estadística y Censos, 1961:7. Salvador: Asociación Cafetalera de El Salvador, 1940:26; El Salvador. Dirección General de Estadística y Censos, 1961:51. Guatemala: Biechler, 1970:109; Guatemala. Dirección General de Estadística; 1953:5; 1971:245,248.

Table 2. Distribution of Production by Class Position of Producers for Nicaragua in 1910 and 1957.

REGIONS III-IV						
Class Position	Prod. QQ	MANAGUA		CARAZO		
		1910	1957	1910	1957	
Sub-Family	10	.0	.3	.2		
Family	10<40	.4	.9	3.5	3.7	4.3
Small Emp.	40<200	11.3	7.1	21.4		15.0
Estate	200<500	33.9	21.1	22.7	74.8	22.5
Int. Prod.	≥500	54.3	70.5	52.1		58.3
Total %		99.9	99.9	99.9		100.1
Total Prod.		67,440	81,004	47,187		119,087
% Nation		38.8%	17.1%	27.1%		25.1%
REGION VI						
Class Position	Prod. QQ	MATAGALPA		JINOTEGA		
		1910	1957	1910	1957	
Sub-Family	10	1.1	1.8	.3		
Family	10<40	3.1	9.9	3.5	3.8	19.4
Small Emp.	40<200	19.2	30.9	18.8		23.5
Estate	200<500	33.1	24.7	24.7	77.4	21.3
Int. Prod.	≥500	43.5	32.7	32.7		35.8
Total %		100.0	100.0	100.0		100.0
Total Prod.		18,444	116,734	16,484		65,894
% Nation		10.6%	24.6%	9.4%		13.9%
REGION I						
Class Position	Prod. QQ	ESTELI		NUEVA SEGOVIA		
		1910	1957	1910	1957	
Sub-Family	10	5.7	18.1	14.7		
Family	10<40	11.1	40.7	33.9	48.6	30.9
Small Emp.	40<200	48.0	11.6	40.7		64.5
Estate	200<500	35.2	29.6	10.8	10.8	4.6
Int. Prod.	≥500	-----	-----	-----		-----
Total %		100.0	100.0	100.1		100.0
Total Prod.		2,341	4,476	2,322		15,535
% Nation		1.3%	.9%	1.3%		3.3%

Source: República de Nicaragua, 1910 (calculated from census listing); Nicaragua. Estadística y Censos, 1961:7.

Table 3. Mean Area and Mean Production of Estates with 100 Manzanas or More Planted in Coffee, and Total Area and Total Production of Estates with 50 Manzanas or More Planted in Coffee by Country.

Country	Estate Area in Coffee			
	≥100 Mz		≥50 Mz	
	Mean Area (Mz)	Mean Prod. (QQ)	Total Area (1000 Mz)	Total Prod. (1000 QQ)
COSTA RICA	210	1722	24.7	196.1
NICARAGUA	195	955	65.1	304.8
EL SALVADOR	228	2713	95.6	1098.8
GUATEMALA	342	2479	202.1	1278.3

Source: Table 1. Guatemala area and production data based on average of 1950-1964 census figures.

Table 4. Number of Small Holders and Number of Resident and Non-Resident Workers Employed on Estates with More than 50 Manzanas in Coffee in El Salvador, (1940), Guatemala (1942-43) and Costa Rica (1935).

Category	SALVADOR	GUATEMALA	Category	COSTA RICA
Small Holders	9,768	9,340	Small Holders	23,641
Resident Adult Males	27,396	76,767	Permanent Workers	23,636
Harvest Migrant (All workers)	231,710	142,941	Harvest Migrant (All Workers)	----
Total Harvest Labor	310,000	350,000	Total Harvest Labor	75,000
Estate Area (1000 Mz)	62.9	164.5	Estate Area (1000 Mz)	21.0
Estate Prod. (1000 QQ)	784.4	895.2	Estate Prod. (1000 QQ)	194.7

Sources: El Salvador: Asociación Cafetalera de El Salvador, 1940:26,34,35, 39. Guatemala: Guatemala, Oficina Central del Café, 1946:87, 99, 109,213; Biechler, 1970:264. Costa Rica: Costa Rica, Instituto de Defensa del Café de Costa Rica, 1935:58,59.

Table 5. Distribution of Arabica Varieties, Fertilizer Use and Density of Plantings by Country 1950-57.

Technical Index	COSTA RICA 1955	NICARAGUA 1957	SALVADOR 1957	GUATEMALA 1950
Typica	67.9	80.1	29.3	48.5
Maragogipe	-----	4.3	-----	5.0
Typica-Bourbon	-----	-----	-----	32.1
Bourbon	16.4	15.4	58.8	14.3
Others	15.7	.1	11.9	-----
Total	100.0	99.9	100.0	99.9
Fertilizer Use				
% Total Coffee Area				
Organic	10.4	2.0	-----	6.6
Chemical	25.3	3.0	-----	5.3
None	64.4	95.0	-----	88.2
Total	100.0	100.0	-----	100.1
Number of Trees/Mz				
Density	-----	1,000	1,258	635

Sources: Costa Rica: Estadística y Censos, 1957:40,42,44,233. Nicaragua: Estadística y Censos, 1961:11,13,18. El Salvador: Estadística y Censos, 1961:3-5. Guatemala: Estadística, 1963:7,37,71.

Table 6. Yields in Quintales of Green Coffee per Manzana for Selected Periods by Country.

Period	COSTA RICA	NICARAGUA	SALVADOR	GUATEMALA
1942 or before	7.6 (1935)	6.1 (1910)	11.1 (1940)	6.3 (1942-43)
1948-1952	6.9	5.3	10.1	5.4
1961-1965	9.1	5.2	12.4	8.0
1969-1971	13.2	6.9	17.1	8.3
1978	17.8	9.2	16.7	9.7
1980	21.2	9.0	14.7	9.5

Sources: United Nations Food and Agriculture Organization, 1981:184;1960:129. Costa Rica (1935): Instituto de Defensa, 1935:59. Costa Rica (1961-1965): Estadística y Censos, 1965:151. Nicaragua (1910): República de Nicaragua, 1910:644. Nicaragua (1961-1980): Gariazzo et al., 1983: Appendix Table 7. Salvador (1940): Asociación Cafetalera, 1940:26. Guatemala (1942-43): Oficina Central, 1946:152,194. Guatemala (1961-1965): Estadística, 1971:245,248.

Table 7. Estimates of the Technological Organization of Central American Coffee Production by Juan Pablo Duque for the Colombian Coffee Board, June 1937.

	<u>COSTA RICA</u>	<u>NICARAGUA</u>	<u>EL SALVADOR</u>	<u>GUATEMALA</u>
<u>Harvesting</u>	mature beans only	stripping ripe and unripe beans, leaves	mature beans only	mature beans only
<u>Pruning</u>	intense	free growth	intense but variable	free growth
<u>Fertilizer</u>	"great preoccupation with spreading the use of chemical fertilizers"	None	Izote (<u>yucca sp.</u>) and mineral fertilizers	generally use ^a
<u>Transport</u>	oxcarts, trucks	trucks (Carazo) Pack animals (Matagalpa-Jinotega)	carts, trucks	carts, trucks, pack animals, human bearers
<u>Processing Machinery</u>	imported, sophisticated. "constant preoccupation with improving processing plant"	local, primitive	imported, sophisticated. Similar to Costa Rica	imported, sophisticated (but lags behind CR and SAL)
<u>Quality Control</u>	high	non-existent	high	high
<u>Machine Drying</u>	yes	no	yes	yes

Source: Duque, 1938.

a. Dominguez (1970:167) reports that fertilizer use was confined to German planters and that "inorganic fertilizers were, broadly speaking, out of reach of all but the most prosperous of the planters." Data from the 1950 census reported in Table 4 above show that no fertilizer was used on almost ninety percent of the coffee area.

Table 8. Number of Coffee Processing plants (beneficios) for Selected Periods by Country.

Period	COSTA RICA	EL SALVADOR	NICARAGUA	GUATEMALA
	Number of <u>beneficios</u>			
1888-1910	256	---	423	---
1940-1942	221	207	---	4243 ^a
1950-1957	---	---	1263 ^a	1334 ^a
1972	114	83	---	---

Sources: Costa Rica: Stone, 1982:256; Instituto de Defensa, 1935:59; Seligson, 1975:24; Nicaragua: República de Nicaragua, 1910 (calculated from census listing); Estadística y Censos, 1961:25; El Salvador: Asociación Cafetalera, 1940:183-191 (calculated from listing of beneficios); Castenada, 1977:n.p. Guatemala: Oficina Central, 1946:146; Estadística, 1953:80.

a. Data for farms producing 200 QQ or more of coffee berries in Guatemala only. For comparative purposes the Nicaragua total includes only farms producing 40 QQ of green coffee or more (5 QQ of berries yields approximately 1 QQ of green coffee).

Table 9. Number of Coffee Processing Plants (beneficios) and Number of Legal Export Trademarks Held by Largest Holders in El Salvador in 1940.

Holders of Largest No. of <u>Beneficios</u>	Number of		Holders of Largest No. of Export Brands	Number of	
	Family or Co.	Ben. Exp.		Family or Co.	Exp. Ben.
Meardi	12	60	Meardi	60	12
Daglio	8	17	Alvarez	22	4
Sol Millet	7	5	Curaçao Trading	19	1
Guirola	7	6	de Sola	18	6
de Sola	6	18	Daglio	17	8
Salaverría	5	6	J. Hill	16	1
Alfaro	5	5	Goldtree-Liebes	9	2
Caceres	5	--	Delpech	8	1
Bonilla	5	--	Meza Ayau	7	1
Regalado	4	6	Nottlebohm Trading	7	2
Alvarez	4	22	Dueñas	6	4
Magaña	4	--	Guirola	6	7
Duenas	4	6	Morán	6	1
Lima	4	4	Matamoros	6	1
			Regalado	6	4
			Salaverría	6	5
			Vides	6	1

Source: Asociación Cafetalera, 1940:183-199.

Table 10. Principal Producers in the Department of Carazo in 1910.

Producer	Estates	Area (Mz.)	Prod. (QQ)	Total Area	Total Prod.	No. Ben.
ARTURO VAUGHAM	San Francisco	222	5000	222	5000	1
JOSE E GONZALEZ	La Providencia	240	1200			
	Monte Cristo	175	1500	590	4000	2
	La Palmera	175	1300			
ADOLFO BENARD	San Dionisio	123	1300			
	Santa Rosa	50	500	238	2200	1
	San Francisco	65	400			
RAPPACCIOLI (VINCENTE Y HNOS.)	El Paraiso	145	1000			
	El Pochoton	100	400	330	2000	2
	La Moca	85	600			
FERNANDO CHAMORRO	La Amistad	90	800			
	El Brasil	120	900	210	1700	2
TEODORO TEFEL	Chilamatal	305	1500	305	1500	1
VINCENTE RODRIQUEZ	Santa Cecilia	100	1100			
	San Ramiro	75	350	175	1450	1
JOSE IG. GONZALEZ	San Jorge	60	600			
	Las Delicias	100	800	160	1400	1
IGNACIO BALTODANO	El Brasilito	180	1100	180	1100	1
JOSE M. SIERO	Santa Gertrudis	56	600			
	Andalucia	90	300	146	900	0
ANASTASIO SOMOZA	Santa Julia	5	50			
	El Convoy	14	80	94	730	2
	El Porvenir	75	600			

Source: República de Nicaragua, 1910:666-671. Based on Census listing of all individual producers for Carazo in 1910.

Table 11. Coffee and Elite Structure in Nicaragua, Guatemala and El Salvador.

<u>NICARAGUA</u>		<u>GUATEMALA</u>		<u>EL SALVADOR</u>	
<u>Family</u>	<u>Coffee Wealth</u>	<u>Family</u>	<u>Coffee Wealth</u>	<u>Family</u>	<u>Coffee Wealth</u>
Alvarez		Abularch		Alvarez	X
Argüello Téfel	X	Alejos	X	Batarse	
Baltodano	X	Arenales		Battle	X
Chamorro Benard		Aycinena	X	Bernheim	
Chamorro Cardenal		Bouscayrol	X	Borgonovo	X
Fernández Hollman		Castillo		Deininger	X
Frawley		Cofiño	X	De Sola	X
González	X	Cordon		Dueñas	X
Hollman		Dorion	X	Escalon	X
Knoepffer	X	Granai		Frenkel	
Lacayo Terán		Herrera	X	Freund	X
Matheson	X	Ibargüen	X	Gadala María	
Montealegre		Kong		Goldtree-Liebes	X
Osorio Peters		Matheu	X	Guirola	X
Pellas Chamorro		Novella		Hasbun	
Pereira		Sinibaldi	X	Hill	X
Reyes Cardenal		Skinner Klee	X	Magaña	X
Reyes Montealegre		Toriello		Mathies	X
Sacasa Guerrero		Weissenberg	X	Meza Ayau	X
Terán		Zimieri		Nasser	
Villa			11/20	Poma	
	5/21			Quiñonez	X
				Regalado	X
				Safie	
				Schwartz	X
				Simán	
				Sol Millet	X
				Vairo	
				Wright	X
				Zablah	
					19/30

Sources: Nicaragua: Wheelock, 1978:188. Guatemala: Jonas and Tobis, 1974:216-251. El Salvador: Aubey, 1968-69:272-276. Coffee wealth based on these sources and República de Nicaragua, 1910; Colindres, 1976:471, and Asociación Cafetalera, 1940:183-199.

Figure 1. Bases of Power by Stage of the Production Process for the Coffee Elites of Guatemala, El Salvador, Costa Rica and Nicaragua ca. 1940.

	GUATEMALA	EL SALVADOR	COSTA RICA	NICARAGUA
LAND	X			
PRODUCTION		X		
PROCESSING		X	X	
EXPORT		X	X	0

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