

"Cotton and Revolution in
Nicaragua"

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Although the Pacific coast of Nicaragua was a center of cotton production even in pre-Columbian times and, during the colonial period, was known as a source of cotton for sailcloth (MacLeod, 1973:124, 166), the commercial development of the crop is largely a phenomenon of the thirty years preceding the Sandinist revolution of 1979. In the 1920s W.W. Cumberland (1928:38) noted that cotton was produced only in small quantities despite the substantial areas in western Nicaragua "admirably suited" to its growth but as late as 1952 the International Bank for Reconstruction and Development (1953:34, 37) saw no role for cotton in the Nicaraguan economy except as a raw material for a still to be developed textile industry and suggested the country concentrate on cattle and oil palm. Before 1950 commercial production was sporadic despite considerable encouragement by Somoza's National Bank and the few thousand bales exported went no further than Guatemala (Keith, 1974:28). From the 1870s until the 1950s, Nicaragua continued to rely on coffee as its major foreign exchange earner and its major source of domestic wealth.

After 1950 cotton production expanded exponentially to become the country's major export and, as the National Cotton Commission (1967:2) observed, the driving motor ("motor impulsador") of the entire economy. Nicaragua entered an unprecedented period of economic growth. Between 1950 and 1977 the agricultural sector expanded at an average annual rate of 4.7%, a rate exceeded in Latin America only by Venezuela; between 1950 and 1971 agricultural productivity grew at an annual rate of 4.6%, the highest in Latin America; in the early 1960s the rate of agricultural expansion was the highest in the world (Baumeister, 1982:25). By 1967 Nicaragua was the largest producer in Central America, the eleventh largest in the world, and accounted for 2.4 percent of the world's total cotton exports (Belli, 1968:60, 64), an extraordinary figure for a country with a

population of a little more than two million.

The speed and magnitude of this "cotton revolution" exerted a profound effect on the Nicaraguan economy, class structure and political system and in combination with a repressive political system little changed for fifty years contributed directly to the successful revolution of 1979. The social and political consequences of cotton cultivation, not only in Nicaragua but elsewhere in Central America, are as great or greater than its economic effects and contributed to such seemingly unrelated events as the "Soccer War" between El Salvador and Honduras in 1969 (Dorner and Quiros, 1973:229) and the renewal of Guatemala's endless guerrilla war after 1979 (Paige, 1983).

The effect of this sudden economic transformation was magnified in Nicaragua by the relative backwardness of the economy and social structure in the early fifties and the failure of earlier lead sectors to stimulate an economic take-off. With the exception of Honduras, Nicaragua was in 1950 the most backward country in Central America. As late as 1950 there were only 170 miles of paved roads in the country (Keith, 1974:170), a total of 500 tractors were in use in agriculture (Belli, 1968:124) and per capita income was less than U.S. \$200 (Keith, 1974:30). After a brief period as a warren for Panamanian slave hunters, the colonial economy lapsed into a long stagnation which was not to be broken until the development of the coffee export economy in the late 19th and early twentieth centuries. Even coffee exports did not have the transforming effects that they did, in different ways, in Guatemala, El Salvador and Costa Rica for reasons that have much to do with the special geopolitics of Nicaragua. Nicaragua's strategic geographic position set the country on a trajectory that would lead to revolutionary transformation in 1979.

Nicaragua Before Cotton: Transoceanic Dreams and Agrarian Reality

From Lake Nicaragua to Brito on the Pacific Coast is a distance of only sixteen miles and this narrow strip, the Rivas Isthmus, has made Nicaragua appear a promising site for a transoceanic canal from early colonial times. The San Juan river is navigable, at least for small craft, from the Caribbean to the lake so that only the Rivas Isthmus blocked water borne transit. Indeed during the gold rush Cornelius Vanderbilt's Accessory Transit Company brought travelers up the San Juan by river launch, across the lake by steamer and down to the Pacific by stagecoach (McCullough, 1977:38-39). It was always assumed that if the United States built a canal anywhere it would be in Nicaragua and the country became a focus of interimperial rivalry in mid-century when British interest in the canal route led to the annexation of the Miskito coast, friction with the United States and, eventually, to the Clayton Bulwer treaty (1850) which defined U.S. and British interests in any future canal. In 1902 the switch of only five votes in the United States Senate would have led to a Nicaraguan rather than a Panamanian Canal (McCullough, 1977:324). No other country in Central America, except of course Panama itself, has ever been seriously considered as a canal site or has been the locus of an important overland transportation route.

This important economic advantage became a distinct political liability as first Spain, then Great Britain and then finally the United States attempted to control the strategic passage. William Walker's bizarre "filibustering" expedition to Nicaragua (1855-57) was encouraged by dissident partners in Accessory Transit and his eventual defeat was financed by Vanderbilt himself. Walker, the only North American ever to hold the presidency of a Latin American republic, rose to power in Nicaragua as the byproduct of an internal power struggle in a United States corporation (Selser, 1981:11-20). In the first

decade of the twentieth century the Liberal Jose Santos Zelaya (1893-1909) began negotiating with foreign powers to build a second, competing canal through Nicaragua. The United States, taking advantage of Nicaragua's interminable civil wars between liberal Leon and conservative Granada intervened to insure its control of any future canal and to prevent competition for its own canal in Panama (Selser, 1981:26). In 1912 the United States returned once again and remained with the exception of one brief period in 1925-1926 until 1933. Nicaragua thus experienced the most extended direct military involvement by the United States of any country in Latin America except Puerto Rico.

The long United States military intervention had three consequences of decisive importance for the development of the revolutionary movement in the 1970s and for the development of the Nicaraguan political and economic system. First, it created a largely autonomous state based on the Nicaraguan National Guard; second, it prevented the consolidation of political power by an agrarian bourgeoisie, and third, it led to a devastating guerrilla war which severely impeded the modernization of agriculture. The National Guard, trained and initially paid and led by the United States, formed the core of a state which reflected the interests of neither the traditional landed oligarchy, the modernizing coffee bourgeoisie nor even foreign capital. Its origins were strategic and military, not economic. In Guatemala, El Salvador and Costa Rica the state was simply the executive committee of the coffee planters association. In Honduras it was an extension of American banana companies. In Nicaragua it was a unit of the United States Marine Corps. Anastasio Somoza García was selected to head the Guard at least in part because of his knowledge of English.¹

The intervention and the autonomous state left in its wake prevented the consolidation of political power by the liberal coffee oligarchy that emerged

with the rise of the new export crop throughout Central America. The 19th century coffee boom had a predictable series of political consequences.² A Liberal revolution (Guatemala 1871, El Salvador 1885, Nicaragua 1893) seized power from the remnants of the Conservative colonial elite and constitutional and legal revisions established the framework for relatively unencumbered capital accumulation. In Guatemala and El Salvador there is a perfect correlation between the onset of these liberal reforms and the date at which coffee displaces dyestuffs (indigo and cochineal) as the principal export (Cardoso, 1975:15). Lands held by the Church, indigenous Indian communities and mestizo municipalities, as well as waste lands held by the state and worked in precarious tenure, were expropriated, auctioned off and converted into simple commodities. Indian rebellions and insurrections by displaced mestizo land holders were defeated and poor farmers were converted into a semi-servile labor force for the expanding coffee economy. Land, labor and political power secured the coffee oligarchs rapidly accumulated wealth sufficient to give them either alone or with their allies in the armed forces complete domination over Central American society and politics.

Initially Nicaragua followed this path. Coffee exports began on a large scale in the early 1870's and the legal changes in land ownership were set in motion even before the liberal revolution. In 1877 the traditional conservative oligarchy passed a basic agrarian law which required that lands held by indigenous communities be sold at auction and permitted the sale of government owned land (Wheelock and Carrión, 1981:68). The large scale land expropriations that followed led in 1881 to a large scale rebellion by indigenous Indian communities against the conservative government of Joaquin Zavala (Wheelock, 1981:109-118). The defeat of the rebellion accelerated the rate of

expropriations and the new coffee oligarchy consolidated its political power with the rise of the Zelaya administration in 1893. Rising coffee prices in the first two decades of the twentieth century led to more expropriations and a rapid expansion of coffee cultivation. The United States intervention and the resulting period of political instability and civil war severely handicapped further capital accumulation and prevented the transformation of coffee wealth into political hegemony. Although the coffee growers attained considerable local economic and political power, especially in the Northern coffee growing Departments of Jinotega and Matagalpa, they never formed the nucleus of a national financial group, never organized their own political party and, of course, never managed to wrest control of the central government from the national guard.³ On the contrary Somoza, using the second world war as a pretext, expropriated a large number of German owned estates to make himself the largest coffee grower in Nicaragua (Wheelock, 1978:165-166).

The coffee export economy produced, in all Central American countries except Costa Rica, a hybrid micro-mode of production which combined external participation in the international commodity market with varying degrees of extraeconomic coercion in the recruitment and control of the labor force. If the relatively free sale of labor power by a labor force deprived of access to productive assets, and the reinvestment of economic surplus in the mode of production itself are taken as the defining characteristics of the capitalist mode, then no Central American coffee system, except Costa Rica's, was or is fully capitalist and the Nicaraguan system was the least capitalist of all. In Central American societies the use of force, either direct or indirect, to extract economic surplus as tribute, a system which Eric Wolf (1982:79) has aptly termed (after Samir Amin) the "tributary" mode of production, persists in varying

degrees everywhere (again excepting Costa Rica) and the resulting economic formation might be called a commercial manor or hacienda to indicate its hybrid character. Variations on the manorial system of feudal Europe are combined with various other forms of extraeconomic coercion to provide labor while coffee prices are dictated by international markets and varying degrees of reinvestment in production technology are present. The liberal transformation created a more or less unencumbered market in land and freed labor from its traditional rights to independent access to a living from the land. It did not, however, free labor. In Guatemala, where the colonial oligarchy was strongest and tributary techniques of surplus extraction most highly developed, the liberal reforms included the institution of state sanctioned forced labor (1877) which persisted with some changes in legal form until 1944. Coffee expansion in Guatemala took place outside the major region of indigenous population in the highlands and since much of the population retained independent access to land, force was necessary to secure labor (Cardoso, 1975:28). In Salvador where dense populations were found on the best coffee lands the liberal land expropriations deprived much of the population of land access and compelled a high degree of proletarianization (Trujillo, 1981:124). It is not surprising to find that the only mass Communist insurrection in Latin America occurred among the proletarianized coffee workers of Western Salvador during the depression (Anderson, 1971:20). In Salvador workers were most fully dependent on market forces and were therefore most acutely affected by world economic collapse. No similar insurrections occurred in Guatemala or Nicaragua where coffee workers could more easily revert to subsistence production on their own minifarms. Costa Rica, always the exception in Central America, lacked a powerful tributary colonial oligarchy, suffered from a scarcity of labor, not land, and developed a

coffee export economy based on a numerous class of small holders dominated by a few large growers who controlled processing and export with the aid of British capital.⁴ Despite the colonial origins of the coffee elite extra-economic coercion was absent even through a vagrancy statute similar to Guatemala's was passed in 1883 (Cardoso, 1975:26).

In Nicaragua, United States intervention prevented either the complete expropriation of the peasantry as in Salvador, the growth of state sanctioned forced labor as in Guatemala or the development of a true agrarian bourgeoisie as in Costa Rica. From the time of the 1909 U.S. intervention until the consolidation of control by Anastasio Somoza Garcia in 1936 no stable economic environment existed in Nicaragua. Not only did the intervention block a clear liberal revolution but it also prevented the coffee oligarchy from transforming the economy to its advantage.

The armed opposition of César Augusto Sandino (1926-1933) to the American occupation force inhibited capitalist transformations of the coffee system especially in the Segovias (North Central Nicaragua) where Sandino was strong and coffee production had only recently begun. Faced with opposition from a nationalist leader with an uncertain agrarian program but considerable peasant support, growers abandoned their efforts to expropriate the peasantry and instead left the peasantry in precarious possession of the land to insure a more or less stable labor supply (Wheelock and Carrión, 1981:72-73). The Nicaraguan mode of estate coffee production therefore most closely approached the manorial ideal of domain land worked by the land owners with a labor force more or less tied to the land. In a study of Masatepe (Department of Masaya, Pacific Coast) Carlos Rafael Cabarrus (1977:465) found that as late as 1976 only 5 per cent of the peasantry worked exclusively on their own lands. The others were provided with rented land

by large coffee growers in order to provide a labor stockpile not only for the harvest but also for weeding and cultivation during the entire year. In Salvador, by contrast, as early as the 1870s coffee growers ceased to provide subsistence plots for laborers relying on purchased foodstuffs instead (Cardoso, 1975:29). Guatemalan growers stockpiled large amounts of labor but by the 1970s had begun clearing peasants with subsistence plots from their land and relying exclusively on migratory labor now compelled by land scarcity in the Highlands rather than direct state coercion (Quan, 1981:17). In Costa Rica the manorial form never established itself.

The triumph of the manorial form in Nicaraguan coffee was both a cause and a consequence of the extraordinary technical backwardness of Nicaraguan production.

As Jaime Biderman (1983:12) notes:

Low yielding varieties of coffee were planted, and cultivation practices were primitive: excessive shade and limited or no pruning, pest control or soil conservation measures. Though a limited amount of processing equipment was introduced, the harvesting, transporting and processing of coffee remained at very low levels of labor productivity. Many of the rudimentary practices did not vary between 1900 and 1950. As a result of these practices and the lack of renovation of the coffee plantations yields actually declined at a rate of 4% a year between 1925-1949.

Yields in 1957-1958 were half those in Guatemala and only 40 per cent of those in Costa Rica and El Salvador. According to Jaime Wheelock (1978:42) of 9603 coffee estates in 1961 only 248 used fertilizer and in Nueva Segovia, where Sandino had been strongest and reversion to manorial forms pronounced, none used fertilizer. Most estates depended on mules to transport coffee; less than ten per cent possessed even rudimentary processing equipment; seventy per cent of the plantings in the North Central region were arabica varieties unchanged since the introduction of the crop (Wheelock, 1978:42-44). In Guatemala in 1964, by contrast, only 28 per cent of plantings were the traditional arabica (Borges,

1973:208) and many large estates had their own processing factories (beneficios) (Biechler, 1970:33). In Costa Rica a network of pickup stations are connected by truck with large industrial processing facilities (Seligson, 1982:33).

Technical backwardness simultaneously decreases land values and increases the demand for labor and both of these developments favor regression to the manorial form of production organization. Although automation of labor intensive harvesting activities has yet to be realized anywhere in the world technical changes in cultivation and processing can substantially reduce the demand for labor, particularly non-harvest labor. Introduction of higher yield, more robust varieties reduces the amount of labor required to care for the plants and time wasted in transit from one plant to the next during harvest. The use of varieties requiring little or no shade substantially reduces the need for constant pruning of shade trees which threaten to cut off sunshine entirely and extremely high density plantings can substantially reduce or even eliminate the need for weeding as well as saving time during harvest. Use of fertilizers, while requiring some additional labor, increases yield per plant thereby increasing harvesting efficiency and productivity per unit area. To the extent that all of these changes are introduced the large proportion of labor expended in pruning, weeding and cultivating of the groves can be reduced and a large year round labor force is unnecessary. All of these developments are very far advanced elsewhere in Central America and have made it possible to dispense with the stockpiles of labor consuming valuable land on or near the estate itself.⁵ Nicaragua's historical lag in these technical innovations requires a manorial system of resident or near resident labor wastefully used in labor extensive cultivation during the year. All of these advanced techniques incidentally increase yields per unit area making land much too valuable to be left in the

hands of campesinos and creating further incentives for the elimination of semi-manorial forms. Absence of machinery for processing on the estate or the good transportation system which makes nearby factory processing practical requires that large amounts of labor be expended in inefficient dry processing techniques further increasing the need for a large captive labor supply.

The technical effect of intervention and civil war was to cause the abrupt halt in the transformation of the coffee economy from tributary to capitalist mode and cause a regression to the manorial form more common in subsistence than in market production. This agricultural regression had the paradoxical effect of increasing not decreasing political stability in the countryside. Land expropriations slowed, peasants were left with some degree of control over land, payment in kind rather than cash expanded, economic dependency on the estate increased, economic connection with the outside world weakened, transportation and communications stagnated, and an agrarian proletariat never emerged (Wheelock, 1978:84-103). Sandino had drawn his strength from a peasantry displaced by the recent expansion of the North Central coffee zone and the stagnation of the coffee export economy stopped this process and created a politically stable social form, the traditional manor, now producing coffee rather than cattle. The commercial manor has seldom been the locus of sustained revolutionary movements in agricultural export sectors in the post war period although land invasions and other forms of agrarian discontent are not uncommon in such systems (Paige, 1975:121-122). Conflicts are more likely between the commercial manor and independent peasant cultivators, as was the case in the Segovias in the twenties, or in Morelos during the Mexican revolution or in the Peruvian Central Sierra in the early sixties.⁶ Conflicts between dependent manor laborers and the seignorial elite are less common. Even these conflicts,

however, depend on expansion in the export sector, extensive capitalist transformation of production or both, and before World War II Nicaraguan coffee cultivation moved in exactly the opposite direction. There would be little reason to expect agrarian revolution from the manorial form that came to dominate Nicaraguan coffee production.⁷ Nevertheless, the development of the coffee export sector had left in its wake a greatly enlarged semi-proletariat of harvest workers, a nucleus of proletarianized workers on larger, more modern Pacific coast estates, and, in the hills of the Segovias, memories of heroic peasant resistance. But after the assassination of Sandino in 1934, the Somozas enjoyed relative freedom from large scale popular insurrection in either the countryside or the cities. The revolution in cotton would change all this.

The Great Transformation

If Nicaraguan coffee cultivation was the most backward in Central America, Nicaraguan cotton production became, by contrast, the most technically advanced. After 1950 a combination of chemical pesticides, high cotton prices and relative political stability finally initiated the long postponed capitalist transformation of Nicaraguan agriculture. At the time of the revolution this process was very far advanced, although not complete, and not only had market forces penetrated all phases of production but mechanization had begun to be extended even to harvest activities. Under the right circumstances Nicaraguan cotton cultivation might have evolved toward the completely mechanized chemical intensive model of United States cultivation but once again revolution and foreign intervention delayed the process. By the late seventies Nicaraguan cotton production was a complex hybrid form which might be called the capital intensive migratory labor estate. It combined some of the worst features of the semi-servile labor of precapitalist production with the unencumbered exploitation

of fully capitalist enterprise. Nor did this capitalist transformation lead to the long delayed liberal revolution by a new cotton bourgeoisie but instead created a weak, fragmented economic elite that proved uncertain allies of both Somoza and the Sandinists.

There are several features of the political economy of Nicaraguan cotton production which account for the rise of this radically new form of agricultural enterprise and are important for understanding the transformation of rural class structure and the continuing weakness of the cotton bourgeoisie.

1. Land Tenure. A large proportion (typically more than fifty percent) of Nicaraguan cotton was grown on land rented from large landowners who had formerly divided their land between extensive grazing and subsistence cultivation of maize by tenants under manorial tenure (Dorner and Quiros, 1973:228). The importance of renting has several consequences. It tended to favor large units since traditional landownership patterns were highly concentrated and absentee owners preferred to deal with a few wealthy and solvent large tenants than numerous impoverished and precariously financed small farmers. Second capital tended to be considerably more liquid than in many agrarian systems since unprofitable acreage was not rented and hence the owner entrepreneur tended to respond to short run economic and political changes. After the revolution while coffee production exceeded its prerevolutionary levels, cotton area declined to less than half its customary prerevolutionary peak as large growers refrained from committing capital in an unstable political environment (Nicaragua, CIERA, 1982:23). Capital not tied to land could be readily deployed to more profitable sectors of the economy and the relative liquidity of the cotton growers lead to a concern with short term profitability and an orientation to the rationalization of production not found in the traditional coffee economy. Cotton growers were

first and foremost businessmen not land owners.

2. Credit. Cotton cultivation was entirely dependent on credit from the Banco Nacional which in turn was controlled by Somoza. Lending policies like the land ownership pattern favored large growers over small and facilitated the concentration of land.⁸ The Bank's role in production was clearly oriented to maximize productive efficiency, at least on the large units favored by the bank, and after 1960 available credit was closely tied to yield placing further pressure on growers to rationalize production (Brooks, 1967:194). The role of the national bank also made the grower extremely sensitive to swings in government policy and placed the government in turn in an acute need for credit to subsidize what rapidly became the country's largest industry. Like so many other industries in the Somozas' Nicaragua the cotton economy became a kind of state capitalism with the new agrarian bourgeoisie highly dependent on both government policy and the international investment climate. The independence and freedom of action of the cotton bourgeoisie was severely restricted by the central role of the national bank in cotton finance.

3. Pesticides. The largest single cost in Nicaraguan cotton production was pesticides which made the dramatic transformation of the agrarian economy possible in the first place. Pesticide costs in the early period of the boom typically represented 25 per cent of production costs.⁹ Initially pesticides were applied liberally with little concern for the appropriate quantities or the target pest and the sales efforts of the pesticide manufacturers rather than the exact nature of the pest was the major determinant of sales (Fernandez, 1971:126). Pesticides were controlled by five foreign firms the largest of which was the Hercules Chemical corporation and sales incentives and highly paid agents stimulated massive use of the chemicals (Nuñez, no date:49). Although initially

the applications were successful the growers soon found themselves on the familiar "pesticide treadmill" in which the original pests developed resistance to pesticides; new pests move into the ecological niche created by the absence of predators and the decline of the original pest; ever increasing amounts of pesticides are necessary, and yields begin to decline dramatically. Although integrated pest management schemes based on restricted applications, and biological control techniques were tried they invariably broke down in the atmosphere of laissez faire predation which dominated the Somozas' Nicaragua (Swezey and Daxl, no date). Although the external effects of the pesticide treadmill including up to 3,000 acute poisoning episodes a year, a dramatic increase in malaria cases due to anopheles resistance, and massive human tissue burdens were disastrous they had relatively little political significance in Somoza's Nicaragua where occupational safety and public health were, to say the least, hardly major governmental concerns (Nuñez, no date:99-105).

Of greater importance politically was the increasing financial burden placed on the growers by the ever increasing demand for pesticide, especially after the rapid run up of petrochemical prices after the 1973 oil shock. Between 1972 and 1975 pesticide prices increased 130 per cent, while cotton prices remained relatively constant (Swezey and Daxl, no date:12). Oligopolistic control of the pesticide market gave the chemical firms a decisive advantage over the growers. Once hooked the cotton growers had to pay almost any amount to maintain the pesticide habit. By 1977-78 the cost of all imported inputs for cotton production, the largest of which was for pesticides, was greater than the export earnings for cotton (Swezey and Daxl, no date:12). The result was the rapid accumulation of foreign debt, a development in which Nicaragua was a pioneer, and an additional squeeze on the growers.

4. Exports. Credit and pesticide prices were both controlled by external agencies--the Somozas' National Bank and foreign multinationals, respectively. Marketing, ginning and export of the crop were also largely out of the hands of the growers themselves. Much of the crop was sold on futures contracts to speculators and ginning, as well as many future contracts, were controlled by only 28 firms. Export was in the hands of 16 foreign firms, mostly American and Japanese (Nuñez, no date:25, 46-47). Although wealthy by Nicaraguan or even American standards the growers were no match for Somoza, the ginning firms, the American chemical companies or the exporting houses. Caught between the Banco Nacional, the Hercules Chemical Company, and Mitsui's exporters the cotton bourgeoisie could be forgiven if it felt more like the exploited 19th century French peasantry than a group of millionaire businessmen. Unstable prices in the early 70s led to efforts to form a growers association modeled after El Salvador's but Somoza proposed state, which is to say Somoza, control of the marketing of cotton. This unresolved conflict led to increasing political tension and in the late 70s, to an increasingly militant anti-Somoza position on the part of the growers (Baumeister et al., 1983:67-68).

5. Mechanization and rationalization of production. Given the financial environment in which the cotton bourgeoisie functioned it is not surprising that cotton cultivation rapidly took on the appearance of an industrial rather than an agrarian undertaking. Tractors were introduced on a large scale on the larger farms and dramatically increased productivity. Planes were used on the larger farms for pesticide application although smaller farms seem to have been able to survive quite well with hand application from portable tanks (Fernandez, 1971:127). By the 1960's an acute labor shortage during the harvest led to introduction of automatic harvesters which by 1967 accounted for as much as

twenty per cent of the crop (Dorner and Quiros, 1973:226). Cotton cultivation absorbed 96.5% of fertilizers used in Nicaragua (Salmerón, 1978:48). Despite the apparent economics of scale in the use of expensive machinery it is surprising that production costs were no lower on large estate than on small (Belli, 1968:82). Nicaraguan production was considerably more mechanized than anywhere else in Central America. The combination of mechanization, fertilizer and, of course, pesticides produced the highest yields in the world for nonirrigated land, twice the level of yields in the Southern United States (Brooks, 1967:208). Almost all of the capital inputs in cotton occur at the beginning of the crop cycle and after the fields have been plowed, fertilized and sprayed much of the growers capital is tied up in the crops standing in the field. The entire investment is liquidated at each harvest and the entrepreneur tries to fulfill his contract and his debt with the national bank. The structure of capital inputs then further encourages an extreme orientation toward short run profit maximization and increases the grower's financial exposure.

Despite the fertile volcanic soils of the Pacific coastal region, abundant sunshine, ideal growing conditions and highly efficient production the social organization of Nicaraguan cotton growing ultimately depended on a super exploited labor force and the resulting low labor costs. Low cost labor depended on the maintenance of a rigid, repressive social and political order that guaranteed continued high rates of rural landlessness and unemployment. Since labor costs for a typical farm of 200 manzanas represented more than half of total costs (Belli, 1968:83) and since price and capital inputs are both beyond the control of the producer any substantial increase in labor costs would have sunk the cotton bourgeoisie. Average wage rates in the 1970's in cotton harvesting were 50 cents per hundred weight and an efficient picker could manage

200 pounds a day (Deere and Marchetti, 1981:63). Even an increase to a minimum wage of say a modest two dollars a day would have destroyed the Nicaraguan growers competitive position and with increasing pesticide prices the situation becomes even worse. This is precisely what occurred immediately after the Sandinist revolution when agricultural wages doubled (Deere and Marchetti, 1981:63). A slight increase in labor costs from what seems an incredibly low level produced a move to mechanize in the mid sixties.¹⁰ Furthermore, labor requirements are concentrated almost entirely in the three month harvest period from December to April and a considerable army of sub-employed must be available to meet this seasonal demand. After the revolution when land reform and controlled food prices had established a minimum standard of living for both urban and rural populations labor could be had for the harvest only by relying on demonstrations of international or national solidarity through volunteer labor. Despite the appearance of capitalist forms in the labor and capital markets labor, although formally free, remained a factor of production bound to a coercive political system. The secret of the wealth of Nicaragua was not cotton, but repression.

Cotton and Class Conflict

The structural imperatives of Nicaraguan cotton production produced a peculiar form of agrarian bourgeoisie. In 1971 some 2,600 Nicaraguans produced cotton but half the planted area was controlled by approximately 250 family groups (Nuñez, no date:129-153) who could have formed the nucleus of either a cohesive agrarian oligarchy along the lines of Guatemala or El Salvadore or a modernizing entrepreneurial class along the lines of Costa Rica. Instead it produced neither. The considerable wealth accumulated in the cotton sector did not translate into political power or even to hegemony within the cotton sector

itself. Some of the largest growers did combine with merchant capital to establish a new financial group based on the Banco Nicaragüense (BANIC), founded in 1953 in a successful effort to deploy their capital into other areas of the economy. Nevertheless, cotton producers, large and small, remained caught among the Somoza controlled National Bank, the multinational chemical firms and the great exporting houses and their political leaders demanded direct control over marketing and export. The response of the national cotton commission, CONAL, urging greater state control was not welcome especially since the commission was headed by General Rodriguez Somoza (Baumeister, 1982:36). Alfonso Robelo Callejas a millionaire businessman and prominent Somoza opponent found the base of support for his Nicaraguan Democratic Movement among the cotton growers of Leon and Chinandega. He led his organization into alliance with the Sandinists and served as a member of the first post revolutionary junta. Pedro Antonio Blandón scion of one of the prominent cotton growing families involved in the organization of BANIC is now a Vice Minister of Agriculture in the current (and more radical) Government of National Reconstruction. In El Salvador and Guatemala the agrarian bourgeoisie is the core of reactionary ruling coalitions. In Nicaragua a substantial class fraction joined the revolution. But the weakness of the cotton bourgeoisie and its willingness to join temporary coalitions in opposition to Somoza should not be permitted to disguise its complex class interests. Without Somoza or his equivalent there would have been no land concentration, no bank loans to big growers, and, above all, no depressed labor market to guarantee that the cotton in the fields would be converted into bankable profits. After the revolution some growers have continued operating but large numbers have "decapitalized" stopped production or left the country (Collins, 1982:43). Alfonso Robelo is now with the counterrevolutionary forces

in Costa Rica.

The cotton revolution also produced a new class of semi-proletarians who were much closer to a true proletariat than the resident or near resident labor force of the traditional coffee estate. Cabarrus (1977:466) refers to the agrarian workforce of Posoltega in the Pacific cotton department of Chinandega as an "agricultural proletariat por excelence." Given the capital intensity of production and the extraordinarily high yields in the cotton zone provision of subsistence plots to insure a captive labor force was uneconomic and land rents were far beyond the means of even the wealthiest middle peasant. As a result lands of the cotton belt were rapidly stripped of their peasant occupants who had held lands in precarious tenure while supplying labor for the extensive cattle ranches which had dominated the coastal lowlands before cotton. The expansion of cotton acreage, which went from less than 24 thousand manzanas (1 manzana = .70 hectares) in 1950-51 to almost 200 thousand manzanas in 1965 and peaked temporarily at over 300 thousand manzanas in 1977-1978 just before the revolution, corresponded directly to the decline in subsistence crops, particularly maize and beans (Baumeister et al., 1983:22). As Dorner and Quiros (1973:229) note, "Cotton acreage expanded almost exclusively at the expense of the area in basic grain production." As a result Nicaragua shifted from a net exporter to a net importer of grains between 1953-57 and 1963-1967 (Dorner and Quiros, 1973:229). Those few farmers who remained were wiped out by pests fleeing the clouds of pesticides enveloping the cotton fields. Foodstuff production rapidly became uneconomic in the cotton zone. Land expropriation and the separation of the peasantry from independent access to the mode of production, which had taken place in El Salvador coffee areas in the 1870s, had begun, but had not been completed, in the Segovia's coffee belt in 1910-1920, now

finally reached its conclusion in the Nicaraguan cotton zone in the 1960s.

Many of these displaced peasants moved to the cities of the cotton zone or to Managua where they joined a growing number of peasants forced off the land by population pressure to form the shanty town barrios that are the dominant feature of Nicaragua's urban landscape. Between 1950 and 1960 Managua's population grew from 98,000 to 234,000; Chinadega grew from 12,000 to 22,000; León, from 30,000 to 45,000 (Herrera, 1980:618). Nor were these displaced peasants absorbed by the rapidly expanding Nicaraguan economy. Nicaragua's industrial development was closely tied to the cotton export sector and industries such as pesticide, fertilizer and agricultural implement manufacture developed rapidly while such traditional employers as the handicraft production of shoes and leather goods went into virtual eclipse. Industrial production of agricultural inputs was based on the final assembly of imported intermediary goods and in some cases, such as the manufacture of pesticides, amounted to little more than mixing imported chemicals with Nicaraguan water.¹¹ On the forward linkage side cotton gins, oil seed processing plants and textile factories were all relatively capital intensive and provided little employment.¹² Overall agricultural export led development did little to absorb the agricultural surplus labor and the result was an immense informal sector which came to be the most numerous stratum in urban areas (Nuñez, 1981:11).

Nor could the surplus labor be absorbed in agriculture. The capitalist transformation in agriculture stopped short of creating the stable plantation proletariat of the banana zones of Honduras and Costa Rica and instead created a migratory semi-proletariat which could find employment only in the three month cotton harvests. The year round labor force of a coffee estate was largely unnecessary in cotton. The mechanization of cultivating, planting and spraying

reduced the year round force to a small staff of technicians and tractor drivers, but the concentrated harvest demands of an annual like cotton required immense labor inputs in a relatively brief period. By 1960 demand for harvest labor amounted to some 81,000 workers or 37.3 per cent of the economically active population; by 1965 it had reached the incredible level of 203,000 workers, or 71.2 per cent of the economically active population in agriculture. Despite the mechanization of a third of the harvest in the late sixties by 1973 almost 203,000 workers were still employed in the cotton harvest. Even in the peak year of 1965 only one tenth as many permanent as harvest workers were employed in cotton (Salmerón, 1978:80; Nuñez, no date:53). Given the decline of subsistence cultivation in the principal Pacific Coast cotton departments, Leon and Chinandega, and the parallel growth of the urban population it appears that many of these agricultural workers spent the long off season in the marginal districts of the major cities staying alive as best they could. Given the relatively brief period of employment and the prevailing wages it is, mathematically, impossible to maintain an adequate standard of living on cotton wages alone (Nuñez, no date:64). Salmerón (1978:Table 49, no pagination) reports that only 24 per cent of the population of Leon and Chinandega could be said to have had a nutritious diet; another 22 per cent had a barely sufficient diet while the remainder (54 per cent) had insufficient food. Working conditions on the cotton estates were if anything even worse than the coffee estates. Labor contractors were paid by the truck load for rounding up workers and transporting them to the fields in the same vehicles used to take the cotton away after the harvest. Harvest workers were stuffed into barracks shelves with roughly the room per person of an Atlantic slave ship; fed rice and beans only if they picked 100 pounds or more of cotton per day; deprived of any semblance of privacy or sanitary facilities;

exposed to the unrestricted use of pesticides, and driven to back-breaking labor in the 110 degree heat of the Pacific Coast by man killing piece rates. Malaria, dysentery, and diarrheal disease were endemic; intestinal parasites, almost universal (Nuñez, no date:97-105). Medical care, occupational safety regulations, rest periods, grievance committees or any of the guarantees of basic labor legislation were nonexistent. By 1970 there were only 22 union locals of agricultural workers with a total membership of 1,158 out of a total economically active population in agriculture of 237,327 (Salmerón, 1978:99).

The seasonal labor demand and the dispersion of the workforce to the cities and countryside after the harvest significantly reduced the possibilities for the formation of the class conscious proletariat and powerful labor unions of banana plantations workers in Costa Rica and Honduras. Nevertheless, the cotton workers had some organizational advantages, particularly in comparison with coffee workers under manorial organization. The overwhelming demand for harvest labor which overlapped with peak demand in the sugar and coffee harvests, created the paradox of acute labor shortages in the midst of general unemployment. Honduras and Salvadoran workers migrated in large numbers to fill the gap and, of course, mechanization represented a solution for the larger growers with access to capital. During peak periods of the boom when profits were high, labor markets tight, and planters desperate for labor, the threat of a work stoppage should have given considerable leverage to worker organizations. The capitalist rationalization of production eliminated some, but not all, of those manorial ties between planter and worker which had contributed to the stability of the earlier system. Although company stores (comisariatos) persisted in the cotton zone, as they did in the coffee regions, planters saw no reason to make provision for subsistence plots for their workers and had no obligations whatsoever in the

off season. As Salmerón (1978:94) notes, "Cotton production modified the patron-worker relationship substituting the buying and selling of labor power in an impersonal market for the individual personal relationship which had existed between land owner and peon." The remaining connection between anonymous worker and his employer was the piece rate paid entirely on the basis of the weight of a cotton sack at the end of the day. The cotton system also severed, for most workers, any remaining connection to subsistence production and left them fully exposed to capitalist market forces. Although some workers returned to subsistence plots in the off season many others were fully dependent on wage labor and were, therefore, unemployed wage laborers rather than peasant farmers when they were not in the cotton fields. In Nicaraguan coffee production workers were left in more direct control over the land than they were anywhere else in Central America; in cotton production the opposite was the case. In the off season many cotton workers congregated in the cities of the cotton belt and in Managua. To a surprising extent Nicaragua's agricultural proletariat was urban.

Despite these organizational advantages and the objective need for protection from an extraordinarily exploitative production system no strong unions formed in the agricultural sector until the organization of the Association of Rural Workers (ATC) in March 1978 under the leadership of the Sandinist National Liberation Front (FSLN) (Black, 1981:273). The reason for this lack of unionization was not lack of incentives or organizers but repression. All signs of mobilization on the part of the rural work force were brutally repressed by the National Guard. One early attempt to form a rural union in the cotton growing Department of Chinandega resulted in 300 dead at the hands of the Guard (Deere and Marchetti, 1981:48). In the 1970s the Educational Center for Agrarian Advancement (CEPA), a church related agrarian educational

organization, was the target of equally brutal tactics when it began to organize "base communities" of rural workers to discuss their common problems in a religious context," (Collins, 1982:25). In 1978 in the coffee town of Diriamba, the National Guard opened fire on a peaceful demonstration of rural workers organized to protest Somoza's assertion that imbalanced diet rather than poverty was the cause of hunger in rural areas (Collins, 1982:26-27). As Collins (1982:75) observes, "For decades the shortage of workers during peak harvest periods should have given workers bargaining power to win higher pay and better working conditions. But actual repression or very substantial threat of repression by the National Guard thwarted that natural development." Cotton cultivation created the conditions for working class mobilization at the same time that its economic cultivation required the suppression of any labor demands by force of arms. In Honduras and Costa Rica the demands of proletarianized rural workers have been funneled into organized labor movements granted legitimacy by the state and insurrectional leadership has had limited success.¹³ In Nicaragua rural unions were impossible and insurrection the only alternative to inaction.

Although the definitive history of the rural proletariat's participation in the final insurrection in 1978-79 remains to be written preliminary studies by Deere and Marchetti (1981), Black (1981), and Collins (1982) suggest that its role was considerable. Building on the work of CEPA the FSLN began organizing coffee workers in the Carazo and Masaya regions in the Pacific Coast coffee belt (Deere and Marchetti, 1981:50; Black, 1981:273; Collins, 1982:26). Significantly their organizing efforts were focused on the large, technically more advanced estates of the Coast where the Panamerican Highway and an excellent network of local roads connect the market towns of Jinotepe, Diriamba and San Marcos to

Managua and world markets. In the North Central coffee belt where memories of Sandino lingered but proletarianization was less advanced the FSLN adapted guerrilla tactics from the outset and staged its first major military action at Pancasan near the coffee trading center of Matagalpa in 1967. The organizing efforts rapidly spread to the cotton belt and by late 1977 "...the northern Pacific zone, completely dominated by cotton and sugar estates, was the most militant area in the country," (Collins, 1982:26). The formation of the ATC in Diriamba in 1978 led directly to land invasions in Chinandega which had also experienced a series of land invasions in the sixties and early seventies under the impact of the expanding cotton sector. During the September 1978 insurrection which preceded the final battle for Nicaragua in May, June and July 1979 "the ATC was able to convert itself into a powerful force of the FSLN, not only in building the armed struggle but in organizing political action by workers and peasants in rural areas."¹⁴ Although the insurrections of September 1978, as well as the final battles of liberation in 1979, were overwhelmingly urban it appears that many rural laborers who had been expelled from the cotton and coffee harvest participated actively. It was precisely in the poorest districts of the major cities where most displaced agricultural laborers collected, such as Subtiava in Leon or Monimbo in Masaya, where the most intense struggles took place both in the 78 insurrection and the final war of liberation. López et al. note that the timing of the insurrection follows the seasonal rhythms of the agricultural cycle. The September insurrection ends before the beginning of the harvest and the revolution resumes in May after the harvest cycle is complete.¹⁵ In the 1978 insurrection, where patterns of mass participation are clearest, four cities, León, Chinandega, Estelí and Masaya became known as the "Guernicas" of Nicaragua as a result of the intense struggles between the citizenry of the

poorer districts and the Guard. Two of these four, León and Chinandega, are the urban centers of the cotton belt and a third, Masaya, is on the border between the Tipitapa cotton belt and the Masaya-Carazo coffee zone. Nicaragua which might at first seem to be an exception to the conventional sociological wisdom that the peasantry is the decisive class in revolution may in fact be the exception that proves the rule. The predominantly urban Nicaraguan revolution may have involved substantial participation by a new rural proletariat swollen to overwhelming size by the dynamic growth of the cotton export sector.¹⁶

Although the exact role of the seasonal cotton proletariat in the Nicaraguan revolution remains to be clarified by future empirical research several tentative conclusions can be drawn concerning the links between cotton and revolution in Nicaragua. First, the development of the cotton export sector provided the impetus for a capitalist transformation of agricultural production which, because of the peculiarities of Nicaraguan history and geography, and never occurred in the coffee export sector. Second, the cotton bourgeoisie, divided between large growers allied with BANIC and smaller growers caught between exporters, pesticide firms and the national bank never provided the cohesive nucleus for an export oligarchy of the kind that dominated Salvador or Guatemala. Indeed the smaller growers under the leadership of the MDN and Alfonso Robelo moved into opposition to Somoza while the influential agribusinessmen of the BANIC group worried equally about unfair competition from Somoza and the FSLN. Third, the rural proletariat which began its development under the coffee system expanded greatly as a result of the demands of cotton production to become the largest single class in the agrarian economy of Nicaragua and once organized under the direction of the ATC and the FSLN became an important, and perhaps decisive, force in the insurrection that demolished the National Guard and Somoza's regime. The

explosive expansion of the Nicaraguan cotton export sector created a potentially revolutionary class, prevented its mobilization under moderate leadership, and fatally weakened its potential bourgeois opponents. The true Nicaraguan revolutionaries may have been the agribusinessmen of León and Chinandega.

NOTES

1. The relationship between the coffee bourgeoisie and the state in Central America as a whole is discussed extensively in the works of Edelberto Torres-Rivas (1971, 1981, 1983). On Costa Rica see Stone (1982); Salvador, Baloyra (1982); Guatemala, North American Congress on Latin America (1974); Honduras, Morris and Ropp (1977). On the Nicaraguan national guard see Millet (1977). The observation on Somoza's command of English is on page 55.
2. The boom and its effects in Central America as a whole are described in Cardoso (1975) and Torres-Rivas (1975). On Salvador see Trujillo (1981); Guatemala, Cambranes (1982); Costa Rica, Cardoso (1977).
3. Wheelock (1978) demonstrates that the coffee bourgeoisie was not part of the two non-Somoza economic groups, the Banco Nicaragüense (BANIC) and the Banco América (BANAMERICA) which dominated the prerevolutionary economy. The Calley Dagnall coffee firm became an important regional power in Matagalpa.
4. Cardosa (1977) and Hall (1982) both emphasize the role of the small producer. Seligson (1982) presents an alternative view emphasizing land concentration but his conclusions are based on indirect evidence from sales records.
5. Holloway (1974) provides an excellent comparative analysis of Brazilian and Central American production techniques. Biechler (1970) documents the pace of technical change in the Guatemalan coffee industry.
6. In Morelos the conflict was between expanding sugar haciendas and land owning peasant communities (Womack, 1968); in Peru it was between sheep raising indigenous communities and adjacent capitalist ranches (O'Shea, 1980).
7. Coffee prices increased 1957-1963 creating a second coffee boom and restoring some limited dynamism to the coffee economy particularly in the North Central coffee region where the FSLN first found its rural base (David Kaimowitz, personal communication).
8. Fernandez (1971:137) notes, "Currently the importance of the National Bank in financing cotton activity is such that it is apparent that, to a large extent, the bank determines the area of cotton to be planted via credit."
9. Calculated from data presented in Nuñez (no date:22). Data are for the 1971-72 season.
10. It could be argued that in the absence of repression mechanization would have been even more rapid and the labor problem solved. This argument neglects two important considerations. First, in the financial squeeze the seventies capital was not readily available to purchase more machines and even if the capital would have been found it is not likely that the growers would have been the principal beneficiaries. A few very large growers or agribusiness corporations would have increasingly dominated agriculture. Whatever the merits of such a transformation from a purely economic standpoint it would have destroyed many growers without access to capital.

11. Salmerón (1978:40). The manufacture of chemicals and petroleum derivatives (fertilizers) went from 3.69 per cent of industrial production in 1950 to 22.10 per cent in 1974 (Salmerón, 1978:Table 10, no pagination).
12. The entire domestic textile industry employed only 1,610 workers in all capacities; the cotton seed oil industry, only 992 (Baumeister et al., 1983:14-15).
13. In Honduras the decisive event in this process was the successful 1954 banana workers strike which established minimal rights for labor (Posas, 1981). In Costa Rica legitimacy came only after Communist influence in the banana workers union had been subdued and labor mobilization took place under government auspices (Seligson, 1982:74).
14. ATC General Secretary Edgardo García in a speech to the ATC assembly. Quoted in Black, 1981:273. See *ibid.* for descriptions of land invasions.
15. López et al., (1980:185-186) note, "No será por casualidad entonces que el espacio económico de la guerra revolucionaria desatada en esos meses estuviese ubicado precisamente en los barrios de las ciudades de León, Chinandega, Masaya, Carazo, Matagalpa y Estelí; es decir, en el mismo lugar en que en los meses de Abril a Octubre se concentran esas mismas masas proletarizadas que son expulsados de los campos del algodón, azúcar y café."
16. But for an alternative view emphasizing the role of the informal sector see Nuñez (1981). Nunez attributes the revolution to a coalition between a new middle class of salaried professional technical and managerial workers, especially its potential members among students, and the informal sector. Together they constitute the "third force." As the previous note makes clear, Nunez has argued both sides on this particular question. Actually the same people are involved since the informal sector consists of "...las masas proletarizadas que son expulsadas de los campos. . ."

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