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AGRICULTURAL DEVELOPMENT IN CENTRAL AMERICA: ITS ORIGIN AND NATURE

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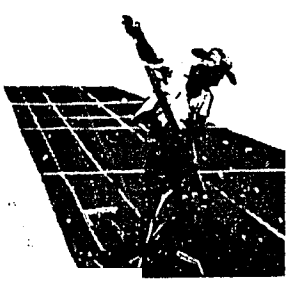

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AGRICULTURAL DEVELOPMENT IN CENTRAL AMERICA: ITS ORIGIN AND NATURE

by

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The Central American economy historically has been divided into a traditional system oriented to the domestic market and a modern sector geared for export to world markets. After 1850 the doctrine of economic liberalism continued this trend by concentrating land ownership in the export sector; the rise of export economies led to economic growth but limited development. Exports failed to stimulate technological change and investment. This unilateral dependence on the performance of a single sector has been one of the weaknesses of Central American economics. After 1950 favorable conditions in international markets and rapidly increasing productivity renewed the impetus for agricultural exports. The overall performance of the agricultural sector in the contemporary economy has been successful in maintaining a considerable degree of external balance and in inducing internal growth and economic stability. On the other hand it has been unable to create sufficient employment or to prevent income and output differentials from increasing. The fruits of technical and economic progress have accrued largely to the export sector. Programs to correct this condition should include technical assistance and marketing aids for the small farmer. Land reform, low-cost colonization, and the organization of small farmers and wage laborers into effective economic and political forces are also needed.

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INTRODUCTION

This study is an attempt to define the origin and nature of the main development problems in Central American agriculture. Traditionally and to this day, the economic development of the Central American nations has been dominated by the growth of the agricultural export sector. This has led to a structural and institutional framework in agriculture characterized by a dual economic system--a traditional sector oriented to domestic-market production and a modern sector geared to production specialization for export to world markets.

Chapter I presents the historical foundations of the dual economy in the colonial and post-colonial periods (up until 1950). Chapter II evaluates the role and performance of contemporary Central American agricultural economies (to 1967) in terms of external balance, internal growth, and employment and income distribution. Chapter III analyses the contemporary agricultural economy in terms of structural and functional organization, and concludes with some implications for agricultural development policy.

CHAPTER I

THE HISTORICAL FOUNDATION OF THE DUAL ECONOMY

PART I. THE COLONIAL PERIOD

The Central American economies, even today, remain both agriculturally based and dominated by the export sector. Historically, the economic system has been divided into a traditional sector oriented mainly to the internal market, and a modern sector closely tied to the world economy through trade and specialization in the production of agricultural commodities for export.

Until recently, it was generally believed that this economic duality began with the growth of the coffee industry during the second half of the 19th century. However, geographic characteristic and Spanish colonial policies in force before the introduction of coffee had already provided the economic foundations of duality.

The Influence of Geographical Factors

The Central American isthmus (excluding Panama) is an elongated and narrow territory divided by a central mountain range into two distinct watersheds or slopes. Indigenous and Spanish colonial civilizations concentrated in the highlands of the Central Range and the Pacific slopes where climatic conditions were benign. Ample land resources and small population made it unnecessary to colonize the coastal areas until the end of the

19th century. Only in Nicaragua did settlement occur in the Pacific coastal plains.

The concentration of population in highland areas had two immediate and pervasive effects. First, the mountainous terrain impaired social and economic relations among countries, and contributed to a locally directed pattern of political and economic development. Second, the narrowness of the isthmus, the small size of the countries, and their free access to one of both oceans made internal communication among countries more difficult and expensive than with the rest of the world. Thus, there was no natural force to aid the development of a geographical sense of unity and to counterbalance the tendency of the countries to pursue an outward-directed pattern of growth.[1]

Colonial Policies in Central America

Relative to other territories of the Spanish colonial empire, Central America offered little mineral wealth or labor with which to entice vigorous colonization. Throughout the entire colonial period, the area remained under-populated and neglected. Sparse population limited utilization of resources and the size of the internal market. These two factors placed a serious constraint on the development of the area as a whole, and on Honduras, Nicaragua, and Costa Rica in particular.

[1]Rodrigo Facio Brenes, La Federación de Centroamerica (San Jose: ESAPAC, Publicación Miscelanea No. 907, 1965), p. 7.

Lacking a vigorous effective demand from the internal market, Central American economies have always depended largely on export demand. This is why Spain's monopolistic management of colonial trade and general neglect of the needs or problems faced by the provinces' exports were particularly detrimental to their economic growth.

Mercantilistic colonial policies were designed to establish bilateral trade flows between the Iberian peninsula and its colonies. Intercolonial trade was discouraged by high internal tariffs or outright prohibitions. Trade with other colonial powers or foreign nations was outlawed. The State monopolized and controlled imports and exports, cargo space and routings of specially-chartered vessels, and ports of entry. The geographic position of the region, removed from the main routes of intercontinental transportation, plus the limited access to ports made transport facilities for Central American trade uncertain, irregular, and expensive. These restrictions largely determined the competitive conditions and characteristics of exportable commodities. In order to afford freight costs, commodities had to be relatively unperishable and non-bulky, and have high demand in metropolitan markets.

For various reasons, liberalization of trade policies by the Crown during the last quarter of the 18th century had only a limited effect on Central American trade. Although the liberalization opened trade with 13 new Spanish ports and with all the

American colonial ports, it failed to stimulate Central American trade because:

1) It dropped the requirement that vessels had to anchor in Panama. This reduced the number of ships calling at Central American ports; many ships began trading directly with North American colonies;[2]

2) Elimination of the prohibition on inter-colonial trade failed to help the Central American countries because they produced similar and highly competitive products;

3) Despite changes, commerce basically was still controlled by Spain and its agents in the New World, especially those in Guatemala.[3] Trade with Europe was prevented.

The Guatemalan Consulado, established to secure local control over economic policy, soon became the prey of Guatemalan merchant-bankers who utilized it to enhance their power.[4] Although the Consulado was instrumental in the development on the cochineal[5] industry in Guatemala, its decrees against the rest of the provinces were particularly severe and discriminatory.

[2] Ibid., p. 26.

[3] Valentin Solorzano F., Evolución Economíca de Guatemala (Guatemala: Editorial José Pineda Ibarra, 1963), p. 213.

[4] The following two articles are particularly illustrative of the Consulado influence and activities in Central America: Troy S. Floyd, "The Guatemalan Merchants, the Government and the Provinces," Hispanic American Historical Review, Vol. 46, No. 1 (February 1961); and Robert S. Smith, "Origins of the Consulado of Guatemala," Idem., Vol. 26, No. 4 (March 1946).

[5] Cochineal is a dye obtained from the dried bodies of the female insects that live on a certain variety of cactus.

Although one of the first decrees after independence in 1821 was the immediate abolishment of the Consulado, the political and economic repercussions of its policies extended beyond the second half of the century. The reaction to their abusive use of public power found economic and ideological support in the liberal economic doctrine of laissez-faire, which came to be identified with the desire for independent republican life.

The economic outcome of Spanish colonial administration, and particularly of Consulado policies, was virtual isolation of the provinces from one another and from the rest of the world. Deprived of free access to international markets, their internal trade beset by monopolistic and other institutional obstacles, the provincial economies remained in a condition of individual self-sufficiency.

A further manifestation of colonial isolationism was the spirit of nationalism and revival of old animosities which emerged following achievement of independence from Spain. Conflicting political leadership and conservative and liberal ideologies[6] led to a period of intense civil strife. Under these conditions, all efforts to create and integrate a system of state and economy were futile. After the end of the federated Republic of Central

[6] Some of the issues of these two ideologies dealt with the choice between republicanism and monarchism, church and state, democracy and aristocracy.

America (1824-1838), all attempts to restore political unity among the five nations were unsuccessful. Power struggles among leaders and ideological differences precluded political stability until the rise of liberalism between 1870 and 1895.[7]

Lacking political stability, economic and institutional reorganization was severely impaired, except in Costa Rica. Because of its geographical location at the southern tip of the isthmus and its more homogeneous social and political composition, Costa Rica was able to consolidate internal order and resolve the ideological conflicts at an earlier date. By 1850, that country was experiencing prosperity unequaled in the history of Central America with the production of coffee for export to the European market.

Dualism in the Colonial Economy

Because of political instability, the economy established in the colonial period remained essentially unchanged throughout most of the 19th century. ("Colonial" will be utilized to refer to the Central American economy before the introduction of coffee and bananas as large-scale export commodities.) The economic life of the colonies was based almost entirely on agriculture. Industrial production was limited to handicrafts, cottage industry, and some mining. Agriculture was rather diversified, but colonial policies kept output oriented to the internal market. Cereal grains, fruits, and vegetables were produced almost exclusively

[7]Carlos Manuel Castillo, Growth and Integration in Central America (New York: Praeger, 1966), p. 14.

for the internal market of individual provinces. Sugar cane was planted commercially for the domestic market. An estanco (monopoly control) was placed on the production of rum and sugar cane alcohol in 1773. Cotton, though widely planted, did not develop into a commercial crop, but was produced mainly by the indigenous population to supply local needs.

Agricultural production for export, through colonial and early independence periods, was limited to cocoa, hides, indigo, and cochineal.[8] Excessive taxation and competition from Ecuador drove cocoa out of the export market, and its production declined altogether toward the end of the 16th century.

In the second half of the 18th century, indigo became the major export crop and retained its importance in most countries until 1790. Even as late as 1850, however, indigo accounted for over 90 percent of El Salvador's exports.[9] Cochineal exports from Guatemala made up 92 percent of the country's export revenue during the same period.[10]

[8] Both indigo and cochineal were dyes widely utilized by the textile industry.

[9] Based on data reproduced in Ephraim G. Squire, The States of Central America (New York: Harper Brothers, 1858), pp. 323, 528.

[10] Manuel Gollas Q., "History and Economic Theory in the Analysis of the Development of Guatemalan Indian Agriculture" (Ph.D. thesis, Department of Agricultural Economics, University of Wisconsin, Madison, 1969), p. 97.

Various historical insights can be gained from the preceding description of the Central American colonial economy:

1) staple food production was limited to the internal provincial markets;

2) crops such as tobacco and sugar cane--which in other colonial economies provided the basis for commercial and export agriculture--were under estanco price and output regulations, and, therefore, were confined to the individual domestic market;

3) for a period of three and one-half centuries, surprisingly few commodities were able to enter external commerce. Moreover, individual commodities in particular countries followed succeeding, rather than coinciding, cycles of rise and decline. Consequently, it was common for Central American export revenue to depend, at any given period, almost entirely on the earnings of a single commodity.

Given the small, largely agrarian populations and the fragmentation of the regional economy, the extent of the market placed a rigid limitation on the development of a commercial agriculture. Significant shifts in demand could only originate in the external sector. Because of high transport costs, only a few products in high demand and lacking alternative supplies were feasible as Central American exports. Capacity to import the goods that, either economically or legally, the provinces were not able to produce, depended solely on export revenue.

Policies of the various states were directed toward seizing export opportunities, thus reinforcing the demand factors favoring specialization. Since exports consisted exclusively of industrial commodities for which domestic demand was negligible (hides, cocoa, indigo, cochineal), a direct link was established between commercial and export agriculture.

By modern standards, the colonial economy cannot be characterized as an export economy. Nevertheless, exports had a decisive role in the design of economic policies which strengthened the pattern of resource allocation and income distribution introduced by the hacienda into the indigenous economy.

The hacienda was the basis of duality as well as the main institution of the colonial economy. In Central America, however, the hacienda originally absorbed relatively few resources and left the indigenous economy essentially unchanged. To satisfy its needs, the disproportionately small Spanish and Creole population had to economically subdue only a small segment of the native population and even a smaller proportion of the land resources.

Capital was scarce, but under prevailing technology, land labor substituted for it. Labor was the scarce and critical resource, and, hence, became the main link between the hacienda system and the indigenous economy. Within this dual system, export demand became the catalytic element that set in motion the dynamics of resource allocation and institutional policy.

Profitability of the hacienda system in Central America depended on the ability to produce for the export market. By adding an export enterprise, the hacienda became the export oriented commercial sector of agriculture. In this manner, the hacienda can rightly be called the predecessor of the plantation system in Central America.

The social cost of this transformation was largely borne by the indigenous economy, not through land but through labor. Although occasionally land was claimed from the indigenous economy, the long-run effects would not have been great since access to public domain land was, at least in principle, equally open for both.

The mandamiento and debt peonage were the principal means to create a salaried labor force to work, either permanently or seasonally, in the commercial enterprises of the hacienda. The exploitative mandamiento laws commanded able-bodied men from the indigneous sector to work in haciendas a certain number of months each year. This institution represented a transitional stage between a feudal and a commercial labor market. From the feudal system, it inherited its compulsory character. Commercial features were a wage rate and a commission to the local government per laborer hired.[12]

[12]In contrast to the earlier encomienda or repartimiento systems the mandamiento did not entail land use rights or landowner's responsibility for the religious and social acculturation of native workers.

A second institution of forced labor--"debt peonage"--emerged in areas where the mandamiento system itself could not assure an adequate number of laborers. Under this system, money was freely advanced to the local population on the promise of payment in services for the next season. Only labor services were acceptable as repayment and permanent indebtedness above legal limits became so widespread that debt peonage emerged as an important institution.

Utilization of the mandamiento and debt peonage techniques for acquiring labor was dependent mainly on whether or not a large indigenous Indian population existed in the area. Guatemala and El Slavador, both with large numbers of Indians, used the techniques extensively. There was less use in Honduras and Nicaragua due to a scarcity of Indians and livestock specialization on the haciendas. In Costa Rica extremely isolated European settlements turned to family farm agriculture since goods could not be exported.

In sum, the state and colonial economic interests in Central America developed a commercial agricultural system for the exclusive benefit of the hacienda sector. Public powers were used to squeeze revenues, labor, and produce from the indigenous sector at rates and prices compatible with the needs of the state and the hacienda.

PART II. POST-COLONIAL DEVELOPMENT: 1850-1950

The Influence of Economic Liberalism

The doctrine of economic liberalism, expressly formulated as a rejection of the political economy of mercantilism, was especially fitting for the newly independent nations of Central America. It provided both a comparative model and a program for the reconstruction of the system of state and economy inherited from the colonial period.

Liberalism was intended to apply to every aspect of economic life as well as to the role of the state in that economic life.[13] Accordingly, the use of public powers was to be directed to the preservation of internal order and the creation of legal institutions to protect private property and free enterprise. Beyond these objectives, direct involvement of the state in the economy was limited to infrastructural investments and provision of selected services such as education and public health.

Economic liberalism advocated, *inter alia*, free competition, free domestic and international trade, and specialization in production according to comparative advantage.

Free international exchange was viewed as the way to develop a commercial economy from a primitive system. To this end, new

[13] See Charles Guide and Charles Rist, *A History of Economic Doctrines*, Seventh ed. (New York: D. C. Heath, 1947), pp. 359-70.

civil and commercial legislation governing production and trade was adopted, modeled on the French Civil Code. Production specialization according to comparative advantage in international trade was recommended as the most effective way to extend the area of the market, induce division of labor, and productively employ a larger portion of the population. Efficiency or distributive considerations of resource allocation were overshadowed by emphasis on the total volume of economic activity.[14]

The economic panorama of Central America during the 1850's and 1860's was one of limited alternatives for future development. The possibility of pursuing an inward-directed pattern of growth was precluded by the small size of the internal market. The fragmentation of the regional economy after 1838, with the establishment of five independent nations, further limited the extent of the market.[15]

On the other hand, the agriculturally-based, export-oriented national economies confronted serious problems in the external sector. Nicaragua and Costa Rica had virtually no significant

[14] Hla Myint, "The Classical View of the Economic Problem" in Joseph J. Spengler and William R. Allen (eds.), Essays in Economic Thought (Chicago: Rand McNally, 1960), p. 451.

[15] In 1855, the total population of the Central American nations was estimated at 2.1 million inhabitants. See Ephraim G. Squire, op. cit., p. 54.

source of foreign exchange. A similar situation was arising in Guatemala and El Salvador, and to a lesser degree in Honduras, all of which depended almost exclusively on indigo and cochineal exports for exchange earnings.[16] The Commercial production and use of chemical dyes after 1857 had not only depressed prices of indigo and cochineal but threatened to extinguish their markets altogether. All five Central American countries were soon to be without a significant source of foreign exchange.

Thus, all five nations were equally emphatic in reallocating resources and directing public policy toward development of new agricultural commodities for export. These policies found theoretical and ideological support in the doctrine of liberalism which conceived of free trade and international specialization of production as the dynamic forces in economic development.

Liberalism also supported the persistence of economic duality. The sector with the larger market (the colonial hacienda sector) would specialize in the production of exportable commodities and productively employ a given proportion of the labor force and complementary resources. A second sector, producing goods for which the country had no comparative advantage in international exchange, would specialize in the production of commodities for

[16] Part I showed that indigo and cochineal represented over 90 percent of the total value of exports of Guatemala and El Salvador, respectively, and after silver bullion were the second major source of foreign exchange for Honduras.

the small internal market whose demand could not competitively be satisfied by imports. Therefore, according to Castillo, Central America was psychologically and ideologically predisposed to effect changes in the existing colonial system only to the extent required to establish competitive export industries.[17]

Out of these policies and predispositions emerged the dual export economies which characterize Central America today. Characteristic of this dual economy is the polarization in the structures of land tenure. The ("modern") export sector controls a major proportion of the land and is based on large-scale commercia enterprises. The traditional sector, except for large cattle haciendas, utilizes residual lands and is organized predominantly in minifundia and family units producing food for the domestic market.

The Economic Role of Land Policies

The major determinant of the structure of export duality was the land policies of economic liberalism. The massive and non-restrictive transformation of public lands to private property led to a vast concentration of land in the export sector, and to the segregation of the traditional sector at the fringes of the expanding export economy. However, these policies and their effects were largely conditioned by three factors: the absence of immigration; the high man/land ratios; and the institutional framework.

[17] Carlos M. Castillo, op. cit., p. 28.

The scarcity of population relative to land resources had important economic implications for expansion. Public lands were transferred to individuals at rates far exceeding the growth in the active population, and even exceeding the economic opportunities for its productive use. Furthermore, the absence of large immigration movements prevented a parallel and significant colonization process. Consequently, the advance of the agricultural frontier was based not on family-size units, but on large holdings where only a minor portion of the land was actually used for agricultural production. There were no effective limits on private claims to public domain lands.

Two additional forces combined in the land concentration process: 1) the skewed resource and income distribution resulting from the colonial hacienda-traditional sector duality; 2) the ideological and pragmatic tendency to sacrifice distributional considerations for competitive export enterprises.

The early concern of land policies was the incorporation of communal and church properties into the private sector. By special legislation, these lands were to be sold to landless campesinos and users of communal properties. Nevertheless, through preemption, faulty registration, and various other maneuvers, large numbers of campesinos lost their lands and were compelled to join the labor force on expanding haciendas and plantations.

In Guatemala and El Salvador, where most of the land in the traditional sector was held communally, these policies evolved

into real enclosure movements. In Guatemala, for instance, an 1879 law gave all proprietors of "rustic lands" a period of three months to register their titles or present private claims. After the expiration of this period, all previous rights were forfeited and unregistered lands were considered "baldios" (idle or abandoned land) and thus subject to open repossession.

The appropriation of communal properties there provided a significant proportion of both the land and the labor required by the emerging coffee plantations. In all the Central American countries, the process of land appropriation occurred without any effective consideration for the size of the holding unit. Guatemala was the only country where legal (though ineffectual and discriminatory) limitations were placed on size of holdings.

Land sales became an effective source of public revenue to meet recurrent fiscal deficits created by the imbalance between ambitious programs of infrastructural construction and fiscal exemptions to encourage production and trade. Since sales were by bidding, they effectively eliminated from competition all but the more affluent members of society. In Costa Rica, land sales originally took place at times of fiscal distress, but were later institutionalized as means of financing local governments. Thus, many individuals acquired coastal lands for the establishment of cattle ranches and haciendas. In the same way, a subsidiary of

the United Fruit Company acquired most of its 175,000 acres of banana land in Costa Rica.[18]

By another type of land sale, in El Salvador, all untitled land in the country reverted to the state for subsequent sale, by bid, to private concerns. Because they were ignorant of legal entitling procedures, a large number of campesinos were evicted.

Land fulfilled an additional public purpose as collateral. Due to failures to raise capital in international markets, large land grants and concessions were made to induce private investments and to finance railroad construction. These concessions represented a major share of the total of 1.8 million acres held by a single company in 1925 (3.6 million acres by 1936).[19] Even at the peak of the banana expansion, only a fraction of this land was in actual use.

Land concessions were also made to European settlement companies in unsuccessful attempts to encourage immigration and colonization. Foreign colonization took place only on an individual basis and on a very small scale. Immigration has generally been numerically inconsequential in Central America.

[18] Charles D. Kepner, Jr., Social Aspects of the Banana Industry (New York: Columbia Univeristy Press, 1936), p. 79.

[19] Ibid., p. 86.

The Supporting Factors of Duality:
The Traditional Sector

What land policies failed to accomplish directly in the entrenchment of economic duality in the export economy, other liberal policies did through the market mechanism.

Landed property was economically valuable when complemented with the technical knowledge, ability, and financial opportunities necessary to engage in the production of export crops. From the outset, these complementary factors were scarce and unevenly distributed. Economic liberalism furthered this situation by perpetuati and intensifying differential access to commercial and financial opportunities and institutions. Land--and other resources as well--came under the control of those who could effectively utilize it in the production of export crops.

The very uneven competition which developed in the input market created a precarious balance between food production and the expansion of export commodities. Recurrent food deficits appeared early and became chronic as the export sector developed. In the tradition of free trade liberalism, food deficits were satisfied by resorting to imports rather than to policies which would redress the balance and create incentives for domestic production. Hence, the traditional sector, already stinted in the input markets, was confronted with competition in the commodity markets as well.

Where the forces of competition were strongest and operated simultaneously in both input and commodity markets, complete specialization in export production occurred and internal production of some commodities vanished altogether. Notable examples were cotton, wheat, and cocoa which were replaced almost entirely by imports. Other minor crops shared their fate. Where the forces of competition were weaker, traditional crops (corn, beans, tobacco, sugar cane, etc.) retained their importance in the domestic market. Their production, however, became stagnant and production costs rose as the sector was relegated to residual lands farther removed from urban centers, transportation, and commercial services. Cost-price relationships deteriorated as imports seized a share of internal demand and kept prices from rising to stabilize this ratio at a more remunerative level. This phenomenon also weighted relative cost-price ratios in favor of export production.

The result was twofold. First, food production within the domestic sector remained organized primarily on a non-commercial basis on small, largely self-sufficient farms. Second, in the face of growing population and urbanization and rising incomes, the recurrent food deficits which began to appear as early as the 1850's became chronic by the turn of the century.[20]

[20] Castillo, op. cit., p. 42.

In spite of food deficits, no secular inflationary pressures accompanied the rapid development of the export sector. The relatively slow demand for food was adequately met by the aggregate marketable surplus from the large subsistence sector plus supplementary imports financed from trade balance accruals.

Faced with growing population and operating under severe economic and institutional constraints, the domestic sector could only expand at the extensive margin of cultivation. This limitation made for relatively low returns in domestic agriculture, particularly returns to labor. Even if money wages in the export sector were low, labor would be attracted as long as wages remained above the average revenue product of labor in subsistence production.[21]

Other non-market mechanisms were utilized to complement or facilitate the process. As already indicated, land policies favoring commercial farms created a potential labor force. Plantations provided additional incentives to wage payments with free plots of land for the use of laborers. In some countries plantation workers were exempted from military service.

[21] Labor's opportunity cost is equated to the wage rate in the export sector. This argument rests on the premise that land in the traditional sector had no opportunity cost and that access to new and productive land was institutionally restricted. Capital consisted almost solely of elementary hand tools. Thus, labor became the crucial factor in food production. Land and capital are considered fixed and included in the *ceteris paribus* assumption implicit in the above argument.

When all of these incentives failed to supply enough labor power, governments resorted to more coercive methods. The colonial mandamiento system was revived in Nicaragua and Guatemala. The peonage system was also retained in Guatemala until 1936.

Reliance on the market mechanism for provision of labor varied in the different countries. These variations are reflected by intra-country wage differentials, which ranged in 1818 from thirty to fifty cents US currency, or even higher in some places.[22] Wages in El Salvador and Costa Rica were from four to eight times higher than in Guatemala, where free laborers earned from twenty to twenty-eight cents per day while bonded labor was paid from five to eight cents a day for the same work.[23] These differences were reflected in the living conditions of these groups.

The availability of labor became crucial to the expansion of export enterprises and other firms in the economy. Only plantations located near population centers were able to specialize entirely in coffee production. They functioned by maintaining a work force commensurate with the plantation's permanent needs and drawing upon urban labor--mainly women and minors--to supply the additional seasonal labor.[24]

[22] Dana G. Munro, The Five Republics of Central America (New York: Oxford University Press, 1918), p. 10.

[23] Ibid., pp. 61, 64.

[24] Purposely, the long vacation of the school cycle in Central America falls during the peak of the coffee harvest season. This releases women and student labor for the harvest and provides an opportunity for the laboring classes to complement or increase their family incomes.

Farms located farther away from population centers had to solve the labor problem in different ways. On some plantations, a permanent work force for the major enterprise was subsequently utilized in complementary enterprises during the slack period. This phenomenon gave rise to the coffee-sugar cane combination in the low-lands of Costa Rica and Guatemala and the coffee-livestock combination in the North Central highlands of Nicaragua. Sometimes, plantations had to give land to laborers under work contract arrangements. This solution, however, was mainly a transitory stage in the creation of a salaried labor force. The colono system, which gave laborers use rights to pieces of hacienda lands in exchange for a share in their crop or for given labor commitments, prevailed in the Pacific coastal areas of Nicaragua, El Salvador, and Guatemala, where it became a predominant tenure system for landless campesinos until the advent of cotton in the 1950's.

Supporting Factors of Duality:
The Export Sector

Land became valuable to the extent that commercial opportunities and financial resources secured the capital and labor required for its utilization in the production of export commodities. The technological and organizational requirements of export production were more complex and exacting than those of any other enterprise in the economy. On one hand, resource demands

were large for both investment and current expenditures and involved complex technical, processing, banking, and shipping functions. On the other hand, export production meant dealing with foreign and distant markets over which Central American producers had no control and little influence. Furthermore, with payment on delivery, long time lags between outlays and receipts were a financial burden and implied large time-costs.[25]

With unequal access to financial and commercial opportunities and institutions, the coffee industry began to be structured in various degrees of vertical integration. At one extreme were those who combined production and processing with credit, marketing and shipping facilities. At the other were those farmers limited to the production of coffee as a cash crop. These smaller farms depended upon the larger integrated plantations for the sale or processing of their crops and even for the procurement of credit and other services.

The disruptive forces of international crisis in the coffee market and subdivision of inheritance further polarized the land base of the industry and give rise to very small plantations and minifundia farms specializing in coffee production. Even in Costa Rica, where the coffee industry had a more egalitarian base

[25] This lag normally exceeded 12 months. Port of origin-f.o.b. purchases were a 20th century phenomenon brought about by intercontinental wire communications and the establishment of brokerage houses in Central America.

and development process, 76 percent of all coffee properties had 2,000 trees or less by 1940. At the other extreme, 0.9 percent of the farms had 50,000 trees or more, 14 plantations (0.15 percent of the total) each having more than 250,000 trees.[26]

A similar outcome occurred during the course of development of the banana industry, although its genesis was entirely different from that of the coffee industry. Two principal explanatory factors can be cited. First, the banana industry developed on new lands in the Atlantic Plains outside the institutional reach of traditional tenure patterns. Land concentration was favored by the magnitude and terms of the grants and concessions under which these lands were acquired. Second, from the industry's origin, control of the industry was held by a few foreign corporate organizations which integrated large-scale production with marketing and shipping in a single operation. Furthermore, they also controlled marketing and distribution channels in the United States, the major market for Central American production.

In these circumstances, the banana industry developed as a foreign enclave in which Central Americans had limited participation except in the provision of labor. Not until the present

Rodrigo Facio, Estudio sobre Economía Costarricense (San José: Editorial Surco, 1942), pp. 88-89. An approximation to size of farm can be obtained by assuming one thousand trees per manzana (1.7 acres), the rule under the technological conditions at the time.

decade did domestic enterprises assume a significant role in the banana industry[27] because of the opening of European and Japanese markets, and increased buyer competition after the 1958 anti-trust suit in the United States against the major monopolistic corporation.[28]

The Commercial Development of Export Production

The description of the expansion of the export economy that follows shows that development of the coffee and banana industries was related sequentially rather than independently. In addition, available data on the growth of exports are quantative indicators of the resource demands that the development of these two industries must have made upon the existing economy.

Under favorable demand conditions and with complete political support, the export sector developed rapidly. Expansion of coffee production began in the 1850 to 1870 period, followed by

[27] In 1967, independent producers and foreign corporations held 11,812 and 26,913 hectares of banana production lands, respectively. By 1969, independent producers had increased their plantations to 25,782 hectares while foreign corporations had 28,900 hectares. See SIECA, Informe sobre el Banano en Centroamerica, unpublished preliminary report (Guatemala: 1969), Table 5.

[28] These marketing companies are not producers themselves. The Sherman Anti-Trust Act suit refers to United States of America vs. United Fruit Company, Civil Action No. 4560 (U.S. District Court, Eastern District of Louisiana, February 4, 1958), for "unlawful restraints and monopolies."

the banana industry in the 1880's and 1890's. The export economy was well established by the early 20th century and these two commodities had virtually monopolized all commercial activity in the Central American economies.

Costa Rica was the first among the Central American countries to develop a commercial coffee and banana trade. Coffee began to be cultivated around 1821 and exports to Chile started in 1832. Between 1821 and 1841, coffee production increased from 50,000 pounds to almost a million pounds. Exports to the European market after 1845 induced a rapid expansion in production. By 1890, coffee exports from Costa Rica amounted to 22.9 million pounds, 92 percent of the total value of exports.[29] Revenue rose at an annual compound rate of 19.5 percent during the 1852-1890 period.[30]

As the other Central American countries consolidated internal order in the second half of the 19th century, their coffee production rose as fast as Costa Rica's. (See Table 1.1) By 1880, coffee accounted for 92 percent of the total export proceeds of Guatemala.[31] Nicaragua was the last country to develop its coffee

[29]Production and export figures are from Facio, op. cit., pp. 23-26, 32.

[30]Based on figures in Squire, op. cit., p. 528; and in Tomas Soley Guell, Historia Economica y Hacendaria de Costa Rica, Vol. II (San José: Editorial Universitaria, 1947), p. 12.

[31]Sanford A. Mosk, "The Coffee Economy of Guatemala, 1850-1911: Development and Signs of Instability," Inter-American Economic Affairs, Vol. IX, No. 3 (1955), p. 12.

economy, but by 1890 coffee accounted for four-fifths of its total exports.[32] Honduras lacked appropriate ecological conditions, adequate transportation and port facilities for coffee production.

The external force that accelerated the growth of coffee exports was the rapidly growing demand in international markets. World consumption of coffee increased steadily after 1850, and

Table 1.1 Coffee Exports from Central America, Selected Years 1860-1920, In Millions of Pounds

Year	Guatemala	El Salvador	Nicaragua[a]	Costa Rica	Central America
1860	0.2[b]	0.9[b]	n.a.	11.5	12.6
1880	29.0	8.5	1.7[c]	24.6	63.8
1900	73.0	50.1	20.0	38.2	181.3
1920	94.2	82.8	30.0	30.9	237.9

Sources: William H. Ukers, All About Coffee (New York: The Tea and Coffee Trade Journal, 1922), pp. 192, 279-80; and Rodrigo Facio, Estudio sobre Economía Costarricanse (San José: Editorial Surco, 1942), p. 25.

a: Figures for Nicaragua are production estimates.

b: Exports for 1863 and 1865 for Guatemala and El Salvador, respectively.

c: 1875.

[32] See Gustavo Niederlein, The State of Nicaragua (Philadelphia: The Philadelphia Commercial Museum, 1898), p. 67.

more than doubled between 1890 and 1924.[33] Lower transportation costs in international trade in the 20th century was an additional factor.[34] Central America experienced an advancing position in the world coffee market until 1900, when its exports accounted for 18.3 percent of world exports.[35] Coffee exports continued to expand with world demand but the Central American share of the total market declined and stabilized at around 8.7 percent.

Internally, two major factors interacted in the establishment and growth of the coffee industry. First, export production was both an efficient way to overcome the constraint created by the limited extent of the internal market, and a way to utilize the potential capacity of the economic system. Second, the access to international markets for Central American coffee came at a time when Costa Rica and Nicaragua were devoid of any significant source of foreign exchange earnings. In the remaining countries, a similar situation was being created by technological substitution for the natural dyes indigo and cochineal.

[33] V. D. Wickizer, The World Coffee Economy (Stanford, California: Stanford University Food Research Institute, 1943), pp. 240-41. An idea of the growth of the demand for coffee in the 1850-1884 period can be obtained through the corresponding time-series for the United States market presented in Joseph M. Walsh, Coffee: Its History, Classification and Description (Philadelphia: The John C. Winston Co., 1894), p. 298.

[34] Mosk, op. cit., pp. 9-10.

[35] Food and Agricultural Organization, La Economía Mundial del Café, Serie sobre Productos No. 33 (Rome: FAO, 1961), p. 61.

Since liberalism advocated trade specialization according to comparative advantage, economic realities and ideological considerations combined to direct public policy and private pursuits toward restructuring the existing system in order to maximize the output of cotton for export.

The extreme dependence on coffee as the export crop was alleviated with the introduction of bananas to the export sector of the economy. The available literature on the economic history of Central America has treated the development of banana production as an independent phenomenon, bearing little relationship to the coffee industry. This treatment probably resulted from differences in the structure of ownership and markets, and in geographical location of production and historical periods of development. Nevertheless, it is important to stress the original cause and effect relationship of the two industries.

From an economic standpoint, the banana industry of Central America was the historical by-product of railroad construction for transporting coffee to international markets. Until World War I, Europe absorbed the major proportion of total coffee exports.[36] Before the 1900's, coffee produced in the highland slopes had to reach Europe through Pacific ports.[37] Pacific outlets were not

[36] William H. Ukers, All About Coffee (New York: The Tea and Coffee Trade Journal, 1922), p. 192.

[37] Since the controlling coffee market in the U.S. is in New York, this argument also applies to shipments to this country.

only closer to production areas, but also drier, permitting transportation routes to be open for six months.[38] In contrast, the rainy Atlantic Coast climate made existing or potential roads impassable for nine months each year. (All-weather roads are a 20th century development.) Coffee was transported to Pacific ports by oxcarts, a transportation means which could not expand rapidly, was limited to the dry season, and was expensive.

International freight charges had to be added to internal transport cost. To reach European markets, coffee had to go to Panama by ship, then by railroad to the Atlantic, and then by merchant vessels traveling trans-atlantic routes.[39] Alternatively, from Pacific ports it could be shipped to Europe around Cape Horn. In either case, international and local freight charges made for large marketing margins. Transport costs were absorbed by the producer or the exporter whether coffee was sent on consignment or sold directly to an importer.

These conditions motivated Central American governments to concentrate on railroad construction to reduce costs and facilitate

[38] Coffee harvesting and export seasons in Central America (October-March) coincide with the dry season in the Pacific Coast (October-November and April-May). For specific harvesting and export seasons in each of the Central American countries, see Pan American Coffee Bureau, Annual Coffee Statistics, 1968 (New York: PACB, 1969), p. 51.

[39] Transoceanic railroad services in Panama started in 1855. The Panama Canal was not opened to traffic until August 1914.

commerce. Priority was given to interoceanic rail systems. To meet construction costs, national governments had to resort to loans raised in international financial markets, particularly London. Most of these loans were so onerous with respect to interest rate, repayment, banker's commissions, and discounts upon issue that governments received only a fraction of the face value of contracted loans. For instance, in 1869 Guatemala received only 55 percent of a loan totaling half a million pounds sterling.[40] In 1871 and 1872 Costa Rica received only 900,000 pounds for two loans totaling 3.4 million pounds.[41] Between 1867 and 1870, Honduras contracted four loans amounting to 6.1 million pounds which defaulted in 1872. These financial failures and the scarcity of internal resources slowed the completion of Central American railways.[42] Nevertheless, the necessity to reduce marketing margins by saving on internal and external freight charges continued, strengthened by the recurrent declines in coffee prices. A temporary decline appeared in 1874, a more serious one in 1882-1885, and a major crisis from 1897 to 1909.[43]

[40] Solorzano F., op. cit., pp. 352-53.

[41] Castillo, op. cit., p. 17. For more details, see Soley Guell, op. cit., pp. 290-92.

[42] Only Guatemala was able to complete railway construction with the Pacific by 1884. Honduras to this day does not have interoceanic rail connections.

[43] Facio, op. cit., pp. 33-34; see also Mosk, op. cit., pp. 15-17.

Emphasis was placed on devising new ways to finance the completion of railways, particularly to Atlantic ports. The institutional means used were land concessions as partial payment for the proposed investments. Originally, land given to railroad building companies or entrepreneurs was subsequently leased to ad hoc landholding companies. These companies in turn utilized concessions to raise capital for investment in banana plantations. Bananas provided both immediate freight and income accruals to continue railway construction.[44] By the turn of the century, mergers among banana companies gave rise to the contemporary corporations, and railroad enterprises became minor subsidiaries. The original railroad concessions, however, had made an important contribution to the land base of the emerging banana industry. For instance, railway concessions held by banana cooporations in Costa Rica and Honduras amounted to 800,000 and 175,000 acres, respectively.[45] The last of such grants, in 1904, for 165,000 acres in Guatemala, went to International Railways of Central America, a subsidiary of United Fruit Company, and included direct

[44] For a detailed history of the interconnection of banana and railway interests in Central America, see Kepner, op. cit., or Charles Wilson, Empire in Green and Gold (New York: Henry Holt and Company, 1947). Both of these books deal with this issue in their introductory chapters.

[45] Kepner, op. cit., pp. 70-79.

per/mile subsidies which ranged from $5,000 to $12,000 (U.S.).[46] During the period, International Railways also built connections between San Salvador and Guatemala, giving El Salvador access to the Atlantic Ocean.

Along with land grants, transport and communication facilities contracts provided liberal concessions for their operation. Terms were particularly "soft" with respect to provision of services, fare rates, and tax exemptions. Nevertheless, the original objectives of establishing modern freight service to Atlantic ports and reducing international marketing margins for coffee and other trade were achieved by most countries. Moreover, railways had brought about the development of banana industry in Central America.

As banana production in the Atlantic lowlands rapidly grew in economic importance, its expansion became a major objective of public policy. In Costa Rica and Guatemala, with the political and economic supremacy of coffee interests, this objective was linked to the completion of rail communications with the Atlantic. In Honduras, however, it completely overshadowed the necessity for interoceanic communications. To this day, railways service only the banana regions located on the Northern Atlantic coast of the country.

[46] Charles D. Kepner and Jay H. Soothill, The Banana Empire (New York: The Vanguard Press, 1935), pp. 156-57.

To encourage banana production, Central American governments granted banana companies special privileges and land concessions under ad hoc contracts, independent of those negotiated by their railroad subsidiaries. The original contracts regulating the operation of banana corporations contained exemptions from all existing and future taxes other than minor ones not related to productive activities. As a result, until 1948-50, when the clauses were re-negotiated, corporations paid no taxes on profits from their Central American operations.[47]

These contracts also included large and exclusive concessions to public domain lands. In addition, corporations acquired vast landholdings through direct purchase and intermediary pressure.[48] Historical and present records of landholdings of banana corporations are particularly scarce; nevertheless, a rough indication of land concentration is provided by the total holding of the United Fruit Company, which controlled over 1.8 million acres in 1925 and 3.6 million acres in 1936.[49] Most of the land was held as "reserves." The highest banana acreage in use was in 1948-52,

Castillo, op. cit., p. 18.

[48] Kepner quantifies some of the landholdings acquired by banana corporations through these methods in Kepner, op. cit., pp. 70-91.

[49] Ibid., p. 86.

with an annual average of 145,272 acres.[50] These figures do not include land utilized for sideline enterprises.

The favorable internal conditions and the rapidly expanding demand for bananas accounted for the rapid growth of this industry. Costa Rica was the first country to establish a corporate banana industry. Its first shipment in 1880 of 360 bunches increased to 35,000 bunches by 1882, 1.2 million bunches by 1892, and 10.0 million bunches by 1908.[51]

In Honduras, large-scale production and export expansion began with the consolidation of the industry by three major corporations from 1890 to 1929.[52] By 1911, the country had become the major producer in Central America. In Guatemala, the commercial expansion of the banana industry began around 1908, with exports at 2.8 million by 1913.[53]

[50]These figures were obtained by compilation from various sources. See, for instance, Henry B. Arthur, James P. Houck, and George L. Beckford, Tropical Agribusiness Structures and Adjustments: Bananas (Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1968), pp. 53, 81; SIECA, Informe sobre el Banano en Centroamerica, unpublished mimeograph (1969); Stacy May and Galo Plaza, The United Fruit Company in Latin America (New York: National Planning Association, 1958).

[51]Facio, op. cit., pp. 39-40; and William Faucet, The Banana: Its Culture, Distribution and Common Uses (London: Duckworth and Company, 1913), p. 237.

[52]Kepner and Soothill, op. cit., p. 95.

[53]Chester Lloyd Jones, Guatemala Past and Present (St Paul: University of Minnesota, 1940; reissued, New York: Russell and Russell, 1966), p. 213.

Between 1911 and 1920, banana production became the major export enterprise in Central America, and captured over a third of the world market. The 1911 market share--37.4 percent--declined to 24 percent in 1936-39, but after World War II, exports recovered and the area's share of world markets increased to 44 percent. Since 1911, Guatemala and Honduras have increased exports and their individual share of the total market. However, Guatemalan exports consistently declined after 1945-49. Nicaragua did not develop an important banana industry. Its exports declined from the 1911 figure of 4.2 percent of world exports to a negligible level by 1945-49, due to conflicting concessionary privileges.[54]

Coffee governed commercial agricultural production in El Salvador, Guatemala, Costa Rica, and Nicaragua, in decreasing order of magnitude. Ecological limitations and lack of adequate transportation prevented the growth of the coffee economy in Honduras, and to a lesser extent, in Nicaragua. The reverse was true in El Salvador, where ecological conditions favored coffee but prevented bananas. Only Costa Rica and Guatemala were

[54] These figures were compiled from various sources. See, for instance, Dana G. Munro, op. cit., and "The International Banana Market--Its Evolution and Prospects," Economic Bulletin for Latin America, Vol. III, No. 2 (October 1958), p. 29. Table 2.3 from the author's Ph.D. thesis, "Agricultural Development and Economic Integration in Central America" (University of Wisconsin, Madison, 1971), p. 76, contains more complete statistics. Explanations of these phenomena may be found in Jones, op. cit., and SIECA, Anuariode Comercio Exterior: 1966 (Guatemala: 1967).

able to base their export economy on both coffee and bananas; the remaining countries specialized in one of the two commodities.

Only Nicaragua failed to attain a comparatively high degree of development in the export economy. This situation was reversed with the introduction of cotton in the 1950's. Likewise, cotton's arrival diversified the export economy of El Salvador (formerly totally dependent on coffee), and added a third major export enterprise to Guatemala, but had only limited impact on Honduras and Costa Rica.

Instability in the Export Economy

Coffee and bananas governed the development of the Central American nations for seven decades after 1850 due to expanding foreign demand and internal mobilization of resources. The adverse effects of a major crisis in the world coffee market from 1897 to 1906 and a disruption of the European market during World War I[55] was largely mitigated by internal transportation improvements, the development of the banana industry, and emergency of the United States as a major market for coffee and bananas.

Economic prosperity came to an end around 1930. Thereafter, for two decades, the export economy failed to improve consumption levels, to create employment opportunities, and to generate the investment levels required to sustain previous growth rates. The

[55] See Mosk, op. cit., pp. 15-18.

disruptive effects of the Great Depression and World War II, together with a slowly evolving--often stationary--demand for coffee and bananas, led to stagnation. World banana imports grew at an annual rate of scarcely 1.0 percent from 1926 to 1955, being stationary from pre-war years to 1952.[56]

These conditions severely affected Central American exports. Coffee exports declined during the depression and war years. The postwar market recovery allowed coffee exports a modest annual increase over the 1924-28 average. Altogether, Central America's share of the world coffee market remained constant at around 8.7 percent from 1910 to 1950.[57]

Banana exports reached a maximum in 1931 but suffered considerable declines during the years of world crisis. In 1945-49, Central American exports held 44 percent of the world banana market but average annual exports barely exceeded the 749,000 ton volume reached in 1911.

Two wars, a depesssion, and correlated changes in commercial policies of importing countries created increasingly violent

[56] The details for the long-term evolution of demand for coffee and bananas are discussed in J. Wolf, "Evolución y Estructura del Mercado Bananero Mundial," Boletin Mensual de Estadistica Agricola, Vol. VIII, No. 2 (February 1959), pp. 7-8; Food and Agriculture Organization, The World Coffee Economy, Commodity Bulletin Series No. 33 (Rome: FAO, 1961); and EBLA, "The International Banana Market ...," op. cit.

[57] FAO, The World Coffee Economy, op. cit., pp. 52-57; and Wickizer, op. cit., pp. 224-25.

fluctuations in the prices of Central American export commodities. These price variations coupled with fluctuations in export quantities caused great instability in export revenues, balance of payments, and reserves. To maintain reserves, governments had to resort to controls designed to reduce imports to the size of export receipts. These policies had an immediate inflationary effect since consumer goods--including foodstuffs--were the most important component of imports.

In Central America, scarcity and high prices of imported goods did not provide a stimulus for investments in import substitution industries. Such a stimulus was inhibited largely by the size of the internal market, the shortage of investment funds, and the extreme specialization of the economy. Instead, inflation tended to attract scarce savings funds into speculative investments in non-productive wealth.

Some governments attempted to sustain previous levels of employment and economic activity through the internal expansion of credit and inflationary finance. The net result, however, was further deterioration of the balance of payments position since the money supply was being expanded in an economy having limited or negligible capacity outside its export sector and also experiencing declining or stagnant foreign exchange earnings.

Currency devaluation and policies of fiscal and monetary restraint eventually restored monetary equilibrium. However, the equilibrium was characterized by stationary income and lagging consumption and investment levels. The traditional pattern of growth was perpetuated because of the following factors. First, the devaluation of national currencies favored the production of export commodities by making it more profitable than production for the internal markets. Second, export production was equally favored by cost reductions as real wages declined and forced saving were imposed on the population by the inflationary process. Finally, government policy strengthened the relative position of export enterprises through the concession of long-term credit and moratoria on commercial debts in succeeding periods of financial distress.[58]

During two decades of external disequilibria and economic stagnation, the burden of providing employment and subsistence opportunities for a growing and/or displaced labor force fell upon the domestic sector of agriculture. This resulted not only in a decline in man/land ratios, but also in internal migrations and a movement to the agricultural frontier. Movement was toward the Pacific coastal plains where unoccupied land existed and where

[58] For a more detailed analysis of the problems faced by the Central American countries during this period and the economic and political ramifications of the export crisis, see Castillo, op. cit., pp. 53-59.

extensive livestock grazing haciendas provided land under sharecropping and other contractual arrangements.[59]

The postwar recovery in world markets and prices renewed the impetus of export production. Cotton was added to export economies. Nevertheless, 20 years of instability and economic distress had vividly demonstrated the vulnerability of excessive dependency on foreign trade and agricultural specialization. The need for economic diversification, the breakdown of multilateralism in the international economy, and a new development ideology (long-term gains from trade between industrial and primary producing countries) induced the Central American countries to search for a new pattern: reconstruction of the regional economy and encouragement of industrialization based on import substitution. These objectives, however, had to be pursued within a system which for over a century had been organized for the production of agricultural commodities for export.

Long-term Economic Development: A Summary Interpretation

It is possible to identify the major economic factors which prevented balanced growth under the influence of exports as the

[59] A typical practice was for landowners to expand their pasture or croplands by allowing immigrants to clear and cultivate tracts of land for free during a period ranging from one to two years. Then, farmers would move to different tracts, leaving the land cleared or in pasture . Sharecropping developed as peasant and hacienda enterprises began to compete for land. Land rentals paid in labor power were common under both systems.

leading sector. On the demand side, the small size of national markets could not generate the aggregate demand required to sustain the development of modern manufacturing and service sectors. The highly skewed distribution of income further debilitated the strength of domestic demand. In the absence of tariff protection, cheap imports of manufactured goods and even food staples were available. Many of these imports competed directly with local production and stymied the growth of traditional agro-industries which in many countries constituted the core of the industrialization process.

On the supply side, balanced growth and economic diversification was limited by the slow rate of capital formation and imperfect knowledge about modern technology. Given the concentration of wealth and income in the modern sector, it should have provided a significant flow of savings, but savings and domestic investment were comparatively low[60] as a result of the demonstration effect on higher income groups, and of investments abroad and in landholdings.

The governments of the period, reflecting the interests of the export and trade elites, were neither politically strong nor inclined to use taxation to redress the imbalance between income and savings. Because of mounting public expenditures and insufficient and unstable public revenues, Central American governments became increasingly dependent on direct foreign investment for the development of economic infrastructure.

[60] See Castillo, op. cit., p. 34.

In sum, the rise of the export economies led to economic growth but limited development. By and large, exports failed to stimulate technological change, investment, or spillover demand to the remaining sectors of the economy. Economic growth and progress depended almost entirely on growth of the export sector and its performance in international markets. This unilateral dependence of an entire system on the performance of a single sector has been one of the fundamental weaknesses of the Central American economies.[61]

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[61] Ibid., p. 39.

CHAPTER II

AGRICULTURAL DEVELOPMENT IN THE CONTEMPORARY CENTRAL AMERICAN ECONOMY: EXTERNAL BALANCE AND INTERNAL GROWTH

The search for new patterns of growth after the Second World War led to the reconstruction of the regional economy as the structure within which import substitution industrialization was to become the dynamic force. Such a shift is tantamount to the superimposition of a new and externally "closed" common market system on century-old export-oriented national economic and institutional systems. Transformation of five independent agricultural systems into one integrated industrial society entails a long evolutionary process requiring considerable change in the structure of existing organizations and in design of development policies. Thus, two systems and patterns of growth can be expected to coexist side by side for a considerable time within the foreseeable future.

In order to concentrate on key economic indicators, this chapter will postpone discussing institutional changes which led to the formation of the Central American Common Market in 1960. Instead, discussion will concern two interrelated aspects of economic development in the 1960-67 period: first, the role of agriculture in maintaining external balance and inducing internal growth and stability; second, the capacity of the economic system to create employment opportunities and to reduce intersectoral income level differentials.

The Role and Performance of the Agricultural Export Sector

Favorable conditions in international markets and rapidly increasing productivity renewed the impetus for agricultural exports after 1950. (One major development was the rise of cotton to second in importance as an export commodity.) A modest degree of diversification was achieved.

High coffee prices which prevailed from 1947 to 1954 induced considerable expansion in coffee production and exports. Thereafter, the stabilizing effects of the International Coffee Agreement and rapidly increasing productivity combined to sustain growth in the coffee industry. Coffee yields increased at an average annual rate of 1.6 and 4.0 percent during the 1950-59 and 1960-67 periods respectively.[1] Total value of coffee exports rose from $199 million (U.S.) annually in 1950-54 to $276 million (U.S.) in 1965-67 (Table 2.2). Coffee remains the major export item of Central America. (Table 2.4)

Banana exports recovered after 1952. Average annual exports increased from 843,800 tons in 1950-54 to 981,200 tons in 1963-67. Central America's share of the world banana market, however, declined from 32.5 to 21.2 percent during the same period. Recently, however, banana production has rapidly expanded, particularly in Costa Rica. Between 1967 and 1969 the total area planted in Central America

[1] Figures compiled from FAO, The World Coffee Economy, Commodity Bulletin Series No. 33 (Rome: FAO, 1961); and Pan American Coffee Bureau, Annual Coffee Statistics, 1968, 1969 (New York), p. A6.

Table 2.1 Central America: Annual Average Values of Minor Agricultural Exports, 1959-62, 1963-66 and 1967
Millions of U.S. Dollars

Export Commodities	1959-62	1963-66	1967
Meat and Livestock	16.7	27.7	44.1
Cane Sugar[a]	8.8	24.1	34.3
Horticultural Products[b]	10.3	15.8	17.0
Shrimp and Fish	4.9	9.1	12.1
Oilseeds	7.2	12.2	11.2
Lumber	12.0	13.5	15.6
Cocoa	7.7	5.5	4.9
Other Agriculture	11.2	21.5	33.9
Minor Agricultural Exports	78.8	129.4	173.1

Source: International Trade Yearbooks of individual countries and unpublished tabulations by SIECA, Anuario Centroamericano de Comercio Exterior.

a: All exported to the U.S. Redistribution of the sugar quota following the Cuban crisis accounts for this increase.

b: Includes: fruits, vegetables and flowers.

increased from 38,725 to 54,682 hectares; Costa Rica accounts for over two-thirds of this increment.[2] In 1968, Central America's banana exports reached 1.5 million tons and were expected to surpass the two million ton mark in 1969.[3] (See Tables 2.2 and 2.4)

[2] SIECA, Informe sobre el Banano en Centroamerica, unpublished report (Guatemala, 1969).

[3] See author's Ph.D. thesis, "Agricultural Development and Economic Integration in Central America" (University of Wisconsin, 1971)

Table 2.2 Central America: Composition of Total Exports by Quinquenniums, 1950-1967[a]
Annual Averages, Millions of Dollars

Commodity	1950-1954		1955-1959		1960-1964		1965-1967	
	Value	Per-cent	Value	Per-cent	Value	Per-cent	Value	Per-cent
Coffee	199.3	56.4	247.2	56.2	229.5	43.3	276.1	33.8
Bananas	83.2	23.6	73.7	16.8	70.3	13.2	100.0	12.3
Cotton	13.5	3.8	49.0	11.1	79.7	15.0	130.0	15.9
Major Exports	296.0	83.8	369.9	84.1	379.5	71.5	506.1	62.0
Other Agri-culture	b	b	50.8	11.5	97.8	18.4	150.6	18.4
Agri-cultural Exports	b	b	420.7	95.6	477.3	89.9	656.7	80.4
Non Agri-cultural	b	b	19.3	4.4	53.8	10.1	160.5	19.6
Total Exports	353.3	100.0	440.0	100.0	531.1	100.0	817.2	100.0

Source: International Monetary Fund, International Financial Statistics (1966-1967 Supplement; August 1968); SIECA, Anuarios de Comercio Exterior (Various Years).

a: Includes intra-regional trade.

b: Breakdown not available.

Since 1962, cotton has displaced bananas as the second major export crop in Central America. (This traditional crop had been displaced during the second half of the 19th century by imports of cloth and manufactured textiles.) Between 1950 and 1964, the total area planted to cotton increased tenfold from 35,300 to 372,600 hectares. In 1967, 307,600 hectares were harvested: 145,700 in Nicaragua, 89,500 in Guatemala and 52,700 in El Salvador, the only country where cotton production in recent years has declined. Honduras and Costa Rica are minor producers.

For Central America as a whole, average annual exports of cotton increased from 376,600 bales in 1954-59 to 1,045,200 bales in 1964-68. By 1964, Central America became the sixth largest cotton exporter in the world.[4] (See Tables 2.2 and 2.4)

This impressive increase was induced by high cotton prices during the Korean conflict, a decrease in production in other areas of the world, and the Japanese textile boom in the post-war period.[5] Propitious ecological conditions of the Pacific Coastal Plains and ample land resources of traditional crop-livestock haciendas offered the necessary conditions for the development of this new enterprise. Furthermore, rapid increases in productivity and yields have allowed

[4] See author's Appendix, Ibid., Table A3.

[5] James J. Parsons, "Cotton and Cattle in the Pacific Lowlands of Central America," Journal of Inter-American Studies, Vol. 7, No. 2 (April 1965).

Table 2.3 Central America: Balance of Payments 1963-1967
Millions of Dollars

Payments Balance	1963	1964	1965	1966	1967
Current Account[a]	-98	-140	-200	-186	-249
Public Loans and Grants	26	9	16	42	113
Private Long-Term Capital	58	84	86	107	80
Basic Balance[b]	-14	-47	-98	-37	-56

Source: Computed from data for individual countries for the respective years contained in: International Monetary Fund, Balance of Payments Yearbook.

a: Includes: balance of goods and services and private transfer payments.

b: Excludes: short-term capital flows and net errors and omissions.

the continued expansion of cotton production in spite of the declining trend in prices since 1955.[6]

Minor agricultural exports have also expanded quite rapidly, from a total of $64.9 to $173.1 million from 1959 to 1967. Table 2.1 is a breakdown by commodity in decreasing order of importance. Most minor exports are plantation crops or enterprises which are particularly well suited to large-scale production.

Table 2.2 shows that the total value of the major export crops (coffee, cotton, bananas) increased from $296 to $506 million annually from 1950-54 to 1965-67, while total exports increased from $353 to

[6] C.i.f. Liverpool prices have declined from $39.75 per hundred pounds in 1955 to $29.88 in 1964. See Comisión Nacional del Algodón, La Economía Nacional y el Algodón (Managua, Nicaragua: Marzo de 1968), p. 17.

$817 million. At present agricultural products represent four-fifths of the total exports of the Central American Common Market.

Exports have expanded Central America's capacity to import by 37.7 percent since 1960. Nevertheless, balance of trade deficits which averaged $30.9 million per year during 1954-59 had increased to $134.9 million annually by 1960-64. These adverse balances are not due to a lack of dynamism in export production, but to a 216 percent growth in imports since 1950-54. Imports have more than doubled from $471 million in 1955-59 to $952 million in 1965-67, 66 percent for consumer goods, 87 percent for intermediate products and 161 percent for capital goods.[7]

Negative trade balances have been the principal cause of the balance of payments difficulties since 1963. As Table 2.3 shows, international loans and long-term private capital have not been sufficient to offset this, and, therefore, a common regional policy for the correction of balance of payments disequilibria was adopted.[8]

The undiminished importance of agricultural exports both in the total output of Central America, and in its transactions with the rest of the world needs to be emphasized. Agricultural exports to

[7] Computed from data contained in the Statistical Appendix of: CEPAL, Evaluación de la Integración Economíca en Centroamerica (66. II. G. 9, New York, 1966) and CIES/CIAP, El Avance de la Integración Económica Centroamericana y las Necesidades de Financiamiento Externo (CIAP/274, Julio 1968).

[8] The provisions of the policy are contained in a 1968 protocol to the General Treaty of Central American Economic Integration, commonly known as "Emergency Measures for the Defense of Balance of Payments."

the rest of the world still generate about one-sixth of the total output of Central America and over one-half of its agricultural component. Agricultural exports as a proportion of total Gross Domestic Product (GDP) have increased. Coffee alone generates one-fourth of the agricultural GDP.[9]

The continued importance of the traditional export sector can also be gauged by the general economic dependency on its foreign exchange earnings. Four-fifths of the total export receipts of Central America come from the three major export crops. Non-agricultural exports to the rest of the world provide only 5 percent of total foreign exchange earnings. Agricultural commodities make up the remaining 95 percent. (See Table 2.4)

Between 1960-64 and 1965-67, total intra-regional exports doubled to one-fourth of the exports to the rest of the world. It follows from the foregoing analysis that the regional economy in this transitional stage is still heavily dependent on the export of agricultural commodities to the rest of the world. They not only represent over nine-tenths of total export earnings but also generate over half of the agricultural output of the region and almost one-sixth of its total Gross Domestic Product. Nevertheless, they have been unable to sustain external balance. An incommensurate growth of imports, largely the result of the heavy import requirements of the

[9] See author's thesis, op. cit., Table 3.6.

Table 2.4 Central America: Composition of Exports to The Rest of the World 1960-1967

Annual Averages - Millions of Dollars

Commodity	1960-1964		1965-1967	
	Value	Percent	Value	Percent
Coffee	229.0	48.6	276.0	42.7
Bananas	70.2	14.9	99.8	15.4
Cotton	79.6	16.9	128.7	19.9
Major Exports	378.8	80.4	504.5	78.1
Other Agricultural[a]	75.0	15.9	107.7	16.7
Total Agricultural	453.8	96.3	612.1	94.8
Non Agricultural	17.6	3.7	33.7	5.2
Total R.W. Exports	471.4	100.0	645.9	100.0
Intraregional Exports	59.7	12.7[b]	171.3	26.5[b]
Total Exports	531.1	---	817.2	---

Source: Table 2.2 (disaggregated data).

a: Includes processed and unprocessed products.

b: Expressed as a percentage of Exports to the Rest of the World.

industrialization process have caused serious balance of payments difficulties since 1963.[10]

The Internal Growth of the Central American Economy: 1950-67

Levels of income and output of the Central American nations are very low. Table 2.5 shows that real Gross Domestic Product per capita in 1967 averaged only $310. Even more significant are the internal disparities in the GDP per economically active person in agriculture and in the rest of the economy.[11] Furthermore, this gap between agriculture and the rest of the economy is increasing. Between 1950 and 1964, output per worker in agriculture increased by $105 while in the rest of the economy the increase averaged $403.

In 1963-67, agricultural production represented 29 percent of the total GDP, a decline of 6.8 percent from its 1950-54 level of 36 percent. Costa Rica has the highest proportion of GDP created by industry (18.1 percent) and the lowest by agriculture (24.2 percent). In Honduras, agriculture constitutes 39.1 percent of GDP, the highest proportion of all countries in the area. It is in this country,

[10] It is not only that industrialization in Central America has been capital intensive, but also that the import content of production is excessively high. For instance, according to official statistics of the Banco de Guatemala and the Consejo Nacional de Economía in Nicaragua, the regional or national component of the gross value of manufactured goods was only 41.3 and 36.4 percent in both countries respectively. These percentages are representative for the entire area.

[11] Because of lack of adequate estimates of the actual labor force, this term will be used interchangeably with the economically active population in the following discussion.

[12] See author's thesis, op. cit., Table 3.9.

Table 2.5 Central America: Real Gross Domestic Product Per Capita and Per Economically Active Person 1950 and 1964/67[a]

U.S. 1962 Dollars

Country	GDP Per Capita		GDP Per Economically Active Person			
			Agriculture		Rest of Economy	
	1950	1967	1950	1964	1950	1964
Guatemala	291	320	353	428	2130	2131
El Salvador	189	272	295	420	963	1468
Honduras	129	262	302	464	820	1066
Nicaragua	188	332	404	525	1019	1621
Costa Rica	299	404	593	597	1248	1786
Central America	225	310	356	461	1317	1720

Source: Author's Ph.D. thesis, "Agricultural Development and Economic Integration in Central America" (University of Wisconsin, Madison, 1971), Appendix: Tables A4-A9, A11.

a: Active population 10 years of age and above.

however, that industry made the largest proportional gain. Guatemala, El Salvador and Costa Rica are the main industrial producers of the area, primarily due to ize of the population and economy. However, the structural composition of output is not significantly different among the five nations, a positive factor in moving toward regional economic integration.

The formation of the common market in Central America has been associated with higher investment and growth rates. Private investment, which averaged $241.1 million per year in 1955-59, has doubled

to $486.0 million annually in 1965-67. Public investments show an increase from $106.0 to $149.3 million per year in the two periods.[13] Foreign investment has also been stimulated by the integration movement. (See Table 2.3). At present, the Central American countries invest 16.7 percent of their gross national product.[14]

Higher investment rates have resulted in an acceleration of the rate of economic growth. (See Table 2.6). This rapid growth rate, moreover, has occurred without serious inflationary pressures.[15] Industrial output grew faster than agriculture over the 1950-59 and 1960-67 periods.

Due to rapid population growth, per capita production in agriculture has been virtually stagnant, while the economy as a whole surpassed the goals of the Alliance for Progress with an overall per capita growth rate of 2.7 percent per year since 1960. Guatemala and El Salvador experienced negative growth rates in per capita agricultural output during 1960 to 1967. Honduras had the highest rate of growth (3.8 percent) while Costa Rica and Nicaragua barely kept their growth rate of agricultural production above that of population.

[13] Compiled from official statistics by Central Banks.

[14] In 1965-67, gross investment as a proportion of GNP averaged 24.8 percent in Costa Rica, 20.2 percent in Nicaragua, 16.8 percent in Honduras, 15.8 percent in El Salvador, and 12.3 percent in Guatemala. See: Banco Interamericano de Desarrollo, Progreso Económico en America Latina, Octavo Informe Anual, 1968 (Washington, D.C., February 1969), p. 21.

[15] See author's Appendix, op. cit., Table A10.

Table 2.6 Central America: Average Annual Growth Rates in Total and Per Capita Real Gross Domestic Product, 1950-59 and 1960-67[a]

COUNTRY	AGRICULTURAL		INDUSTRIAL		TOTAL G.D.P.	
	1950-59	1960-67	1950-59	1960-67	1950-59	1960-67
Guatemala	2.6	2.4	3.5	6.8	2.7	5.1
El Salvador	3.7	2.6	4.4	10.4	4.6	6.2
Honduras	3.4	7.1	9.3	10.3	6.5	8.4
Nicaragua	3.5	3.9	7.0	8.5	4.6	7.2
Costa Rica	0.5	5.3	6.6	8.1	5.2	6.1
Central America	3.0	4.0	5.6	8.6	4.4	6.2
PER - CAPITA						
Guatemala	-0.4	-0.9	0.5	3.5	-0.3	1.8
El Salvador	0.9	-1.0	1.6	6.8	1.8	2.6
Honduras	0.4	3.8	6.3	7.0	3.5	5.1
Nicaragua	0.6	0.5	4.1	5.1	1.7	3.8
Costa Rica	-3.6	0.8	2.7	3.6	1.7	1.6
Central America	0.0	0.5	2.7	5.1	1.3	2.7

Source: Author's Appendix, "Agricultural Development and Economic Integration in Central America" (University of Wisconsin, Madison, 1971), Tables A4 and A9.

a: In constant 1962 prices.

Even when considering that agricultural output is likely to be underestimated, intersectoral growth rate differentials are significant enough to conclude that agriculture has been a lagging sector. Furthermore, the rapidly expanded production of agricultural exports implies that the significant lag has been in domestic market agriculture. This conclusion is supported by statistical evidence to be presented in the following chapter.

Population, Employment and Economic Growth

Because of its influence on the process of economic development and its implications for the design of public policy, the population problem merits more detailed discussion. The Central American nations are basically agricultural countries. In 1964, 71.0 percent of their inhabitants were rural dwellers and 29.0 percent, urban residents.[16] The economically active population (10 years of age and older) is less than one-third (31.9 percent) of the total population.[17] Although agriculture produces only one-third of the total output of the Central American economies, it employs 60.9 percent of the active population or labor force.[18]

Illiteracy rates in the active population average 52.8 percent for Central America as a whole. Furthermore, 78.8 percent of the labor force has had less than three years of formal education or none at all.

[16] SIECA, Quinto Compendio Estadístico Centroamericano, (Guatemala, 1967); B.I.D. Progreso..., op. cit., pp. 373-4.

[17] Ibid.

[18] See author's Appendix, op. cit., Table A11.

At the other extreme, only 5.2 percent of the active population has had more than the equivalent of a primary education.[19] The achievement by 1980 of universal education for the school age population would require an estimated five-fold increase in present educational facilities.[20]

The rate of population growth in the Central American nations has increased since 1940, averaging 3.8 percent per year.[21] Total population has more than doubled from 6.4 million people in 1940 to 14.2 million in 1968. By 1980, Central America is expected to have a total population of 21.3 million inhabitants, with only 30 percent economically active. Nevertheless, the labor force will increase by 2.4 million people from 1965 to 1980. Over one-half (57.0 percent) of a total labor force of 6.4 million workers will be employed in agriculture by that year.

The exceedingly fast rates of population growth pose many complex social and economic problems. Two specific problems are particularly relevant to economic development: growth rates in output required to sustain and improve present income and consumption levels, and creation of employment opportunities.

[19] Ibid., Table A12.

[20] CEPAL, Aspectos de las Interrelaciones entre las Tendencias del Desarrollo Económico y los Recursos Humanos de México, Centroamerica y Panama, Informe preliminar (Mexico, Agosto 1968), p. 23.

[21] See author's thesis, op. cit., Table 3.11. Honduras is the only country where major efforts have been made to check population growth, and where the population growth rate declined between 1950/60 and 1960/68.

Continuation of past performance will lead to a decline in output per worker by 1980.[22] During the 1966-80 period, the growth rates in the real GDP required to sustain the existing levels of output per worker should average 5.3, 7.6 and 6.6 percent per year in agriculture, and non-agricultural sectors and the total economy respectively.[23] Notwithstanding the faster rate of growth in the labor force in the non-agricultural sectors expected in the 1966-80 period (3.9 vs 2.7 percent annually), considerable disparities in the growth of real output per worker in agriculture and the rest of the economy will remain. Unless the productivity of labor in agriculture can be increased considerably by 1980, the labor force remaining in agriculture (57.0 percent) will have incomes averaging one-fourth or less of those in the rest of the economy.

The second major economic implication of population growth deals with the creation of employment opportunities, since rising incomes and output per economically active person are possible amidst widespread unemployment. The Central American economies have not moved impressively toward the solution of the employment problem. Table 2.7 shows that during the 1950-64 period, the agricultural sector absorbed 44.2 percent of the total increment in the labor force.

[22] Based on weighted averages for individual countries of rates in CEPAL, Aspectos de la Interrelaciones..., op. cit., Tables 15, 16 and 18.

[23] Estimates of the growth rates in the labor force between 1965 and 1980 average 3.9 percent annually for the non-agricultural sectors, 2.7 percent in agriculture and 3.2 percent for the economy as a whole. Computed from CEPAL, op. cit., Tables 7-11.

Table 2.7 Central America: Index of Labor Absorption by Economic Sector, 1950-64[a]

Economic Sector	Labor Absorption Percentage
Agriculture	44.2
Services	22.6
Commerce and Trade	12.5
Manufacturing Industry	11.3
Construction	5.6
Transport and Communications	3.4
All Other Sectors[b]	0.4
Total	100.0

Source: Author's Appendix, op. cit., Table A13.

a: Proportion of the total increment in the economically active population absorbed by a given sector.

b: Includes Mining, Basic Services, and Banking and Insurance.

Services employed less than one-fourth of such increment, and the remaining sectors combined absorbed one-third.

Thus, while real GDP in agriculture increased 64.1 percent between 1950 and 1964, employment in this sector increased by only 25.0 percent. Industrial production increased over 250 percent, but total employment in industry increased only 38.0 percent. Likewise, a doubling of output in the remaining sectors of the economy induced only a 79.0 percent increase in employment.

Disparities between output and employment are largely the result of the preference for high capital intensive techniques and processes

over labor intensive methods more compatible with relative factor endowments.[24]

In development, capital intensive techniques are frequently sanctioned on the grounds that they lead to a distribution of income favorable to the saving classes. Nevertheless, given the rapid growth of population and the skewed distribition of income already existing in Central America, more likely results are stagnation of effective demand, excess capacity and urban unemployment. This possibility may be offset if the agricultural sector can provide sufficient employment opportunities and at the same time reduce the existing rural-urban real income differentials.

By and large, over the past decade, agriculture has not performed this role efficiently. It has already been shown that rural-urban differentials in incomes and real output per worker have increased. Furthermore, there is a rapid process of emigration from agriculture. For instance, in the 1950-64 period, the urban

[24] Some explanations attribute this paradoxical situation to market imperfections and other institutional factors which distort relative prices in favor of capital; other explanations emphasize either rigidities in factor proportione in modern production techniques or the need to maximize total output, not by saving in the use of capital, but rather by maximizing the output derived from it. Maximization is based on the frequently observed phenomena that labor intensive techniques are not the ones producing the highest return per unit of scarce capital. These explanations about price distortions (wages, interest rates, currency values, etc.) and market imperfections are discussed in greater detail in W. Arthur Lewis, Development Planning (New York: Harper and Row, 1966), pp. 56-68. See Werner Baer and Michel Herve, "Employment and Industrialization in Developing Countries," Quarterly Journal of Economics, Vol. 80, No. 1 (February 1966), pp. 89-107.

population (residents of cities with over 20,000 inhabitants) grew at an average annual rate of 5.1 percent while the corresponding rate in the remaining rural population was only 2.5 percent.[25] Although there are no unemployment statistics in Central America, the proliferation of shanty towns in the major cities offers evidence of the lack of gainful employment opportunities in urban areas, and, to a certain extent, in agriculture as well.

Urban unemployment and rural emigration occurred during the 1956-66 period when annual growth rates in the active population were 2.0 and 3.8 percent for agriculture and the rest of the economy respectively. The higher rates of growth in the labor force expected for the 1966-80 period (2.7 and 3.9 percent) can only intensify the migration and employment problems, even in the unlikely event that output to labor ratios remain constant.

Hence, the agricultural sector must face a double challenge. First, it must absorb half of the 1966-80 increment in the total labor force--a 48.9 percent increase in its labor force and the creation of jobs for an additional 1.2 million people.[26] Second, it must increase productivity, particularly labor productivity, faster than the rest of the economy if urban-rural income and output differentials

[25] B.I.D., Progreso..., op. cit. pp. 373-374.

[26] Computed from CEPAL, op. cit., Tables 7-11. The absorption of a 50.0 percent increase in the labor force represents a 12.5 percentage increase from the 44.2 percent index of labor absorption observed from 1950 to 1964. This higher rate results from the accelerating growth of the agricultural labor force from 2.0 to 2.7 percent annually during 1965-66 and 1966-80 periods respectively.

are to be reduced. The need to increase both employment and real incomes in agriculture becomes more critical as the production in the rest of the economy becomes more capital intensive. Should the existing low labor absorption trend in the non-agricultural sector continue, the major burden of creating gainful employment will fall largely on the agricultural sector. This is the major challenge for agricultural development in Central America. A failure to meet this challenge will result in increases in rural emigration and unemployment, and in a general deterioration of the levels of living for a large portion of the population.

Two immediate questions arise from the foregoing analysis. One is concerned with the reasons for agriculture's inability to prevent premature migration to the cities and to reduce the size of the income gap between agriculuure and the rest of the economy. The second question follows closely: what changes need to be effected to reverse current tendencies. The following chapter will suggest some answers to these questions.

Summary and Conclusion

This chapter was concerned with an evaluation of the present role of agriculture in maintaining external balance and inducing internal growth. The acceleration in regional growth rates since the formation of the Central American Common Market in 1960 remains heavily dependent on agricultural exports. In fact, the success of both import substitution industrialization and the formation of the common market must be attributed chiefly to the dynamism of the

export sector, which provided the major share of foreign exchange necessary for development while preventing serious balance of payments difficulties.

Nevertheless, balance of payments difficulties remain a constant threat to economic stability. To the extent that imports of capital goods and intermediate products or raw materials are essential to sustain economic development, the major responsibility for maintaining external stability will fall on agricultural exports. A more rapid development in agriculture which maximized the output of exportable commodities and produced raw materials and some intermediate products necessary for the industrial sector would alleviate some of these problems but would not deal with the issues of population growth and the attendent widespread unemployment.

In short, the overall performance of the agricultural sector in the contemporary economy presents a somewhat paradoxical situation. On one hand, it has been successful in maintaining a considerable degree of external balance and in inducing internal growth and economic stability. On the other hand, in spite of growth, it has been unable to create sufficient employment opportunities for the growing population or to prevent income and output differentials from increasing. The explanation of this phenomenon lies in the existing duality in agriculture, the corresponding sectoral interrelationships, and the nature of economic growth within this structure, as the next chapter will show.

CHAPTER III

AGRICULTURAL DEVELOPMENT IN THE CONTEMPORARY CENTRAL AMERICAN ECONOMY: STRUCTURAL AND FUNCTIONAL ASPECTS

PART I: THE STRUCTURAL ORGANIZATION OF AGRICULTURE

Although the gains from agricultural production for export have been impressive, hidden costs need to be evaluated to get an accurate picture of the net gains from export-led agricultural growth.

In largely agrarian systems like Central America's, land tenure institutions are the single most important factor in determining access to employment opportunities, efficiency of agricultural production and income distribution. Land holding and tenure systems affect not only the utilization of available resources and access to factor and financial markets, but also the structure of investment opportunities. Hence, the tenure systems are a major determinant of both the extent and the composition of internal demand.

In addition, to the extent that land holding and tenure systems affect (or restrict) opportunities and income, they are positively related to the control and exercise of political power.[1] In Central America, land concentration in the hands of a comparatively small segment of the population had led to a vast concentration of income and of economic and political power. The result has been a rural population living at the margin of the economic and political system.

[1] These interrelationships are discussed in detail by Peter Dorner, The Influence of Land Tenure Institutions on the Development of Agriculture in Less Developed Countries, Land Tenure Center Paper No. 55 (Madison: University of Wisconsin, October 1968).

In Central America less than half on the farmers (44.8 percent) own their land; 48.8 percent are renters or de facto occupants and the remaining 6.4 percent are farmers with mixed forms of tenure arrangements. In come countries, renters or simple occupants constitute more than two-thirds of the farm population.[2] Over three-fourths (78.1 percent) of all farm units are subfamily, providing neither adequate income nor full employment.

Although subfamily farms represent 78 percent of all farms and employ 60 percent of the agricultural labor force, they hold only 11 percent of the farm land. (See Tables 3.1 and 3.2) At the other extreme, 6 percent of all farms are multifamily units controlling 72 percent of the land but employing only 28 percent of the labor force, including landless workers. Furthermore, 6 percent of the people in agriculture own or control over two-thirds of the land. A by-product of this highly skewed pattern is the relatively small proportion of land held in medium or family size farms.

Table 3.3 shows that there are no significant differences in the land holding patterns among the various Central American countries within each farm size category. However, there are great differences among land-man ratios between categories. Land per worker in the multifamily sector is over ten times greater than in the family farms and eighty-five times larger than in subfamily farms.

[2]See author's Appendix, "Agricultural Development and Economic Integration in Central America" (Ph.D. thesis, Department of Agricultural Economics, University of Wisconsin, Madison, 1971), Table A14.

Table 3.1 Central America: Number of Farms and Area in Farms by Size Categories

Percentages

Country	Subfamily		Family		Medium Multifamily		Large Multifamily			
							Less than 1000 mzs		More than 1000 mzs	
	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
Guatemala (1964)	87.4	18.7	10.4	18.8	1.9	26.5	0.2	10.0	0.1	26.0
El Salvador (1961)	91.4	21.9	6.7	20.6	1.5	19.8	0.4	21.9	0.1	15.8
Honduras (1965)	67.5	12.4	26.4	27.5	5.0	21.7	0.1	18.8	0.1	19.6
Nicaragua (1963)	50.9	3.5	27.4	11.2	16.8	26.5	4.3	28.3	0.6	30.5
Costa Rica (1963)	43.2	2.9	35.2	14.3	16.2	23.5	4.8	28.1	0.6	32.2
Central America	78.1	10.7	15.8	17.6	4.8	24.3	1.1	21.4	0.2	26.0

Source: Author's Appendix, Tables A15 and A16.

Table 3.2

Central America: Distribution of the Agricultural Labor Force by Size of Farm Category

Percentages

Country	Sub-family	Family	Multi-family	Landless Workers	Total
Guatemala (1950)	73.8	7.9	1.8	16.5	100.0
El Salvador (1961)	77.2	5.7	1.5	15.6	100.0
Honduras (1952)	49.9	19.5	4.5	26.1	100.0
Nicaragua (1963)	34.8	18.8	15.0	31.4	100.0
Costa Rica (1963)	25.0	20.5	12.5	42.0	100.0
Central America	59.8	12.3	5.2	22.7	100.0

Source: CIDA/CAIS. Características Generales de la Utilización y Distribución de la Tierra en Centroamerica. Preliminary Report. (Mexico, 1969), Table 18.

The extreme concentration of population on the limited land of the subfamily sector, together with these farms' low productivity, largely explains the low output per worker found in agriculture.

The distribution of income in agriculture shows a concentration correlative with the distribution of land. Estimates for three Central American countries show the following annual family income distribution by size of farm:[3]

Large multifamily farms:	$18,226 - $25,748
Medium multifamily farms:	$2,248 - $8,000
Family farms:	$713 - $1,300
Subfamily farms:	$302 - $980
Landless workers:	$220 - $727

[3] CIDA., Características Generales de la Utilización y Distribución de la Tierra en Centroamerica, Informe Preliminar (Mexico, 1969), Cuadro 19.

Table

Central America: Land Man Ratios by Size of Farm Category[a]
Manzanas per Agricultural Worker

Country	Subfamily[b]	Family	Multifamily[c]	
			Excl. Landless Workers	Incl. Landless Workers
Guatemala (1950)	1.6	13.9	324.5	32.2
El Salvador (1961)	1.5	17.0	165.6	15.6
Honduras (1952)	2.3	12.8	122.2	18.0
Nicaragua (1963)	1.9	11.7	111.2	35.9
Costa Rica (1963)	2.5	13.7	129.6	29.8
Central America	1.7	13.4	146.0	27.1

Source: Based on information contained in CIDA/CAIS, Características Generales de la Utilización y Distribución de la Tierra en Centroamerica. Preliminary Report (Mexico, 1969).

a: One manzana = 0.70 hectares

b: Includes microfarms

c: Includes medium and large multifamily farms

Thus, over eighty percent of agricultural families have incomes of $980 or less per year, while five percent have incomes ten or thirty times higher.

This pattern of land distribution--and its related distribution of income--is deeply imbedded. Its origins can be found in the colonial economy, although its present configuration results from the establishment and evolution of the agricultural export economies in Central America. Crop production reflects the interrelationships between tenure structure and internal or export market orientation.

Two-thirds of the area devoted to export production is held by multifamily farms producing 77.3 percent of the volume of output; family and subfamily farms produce only 22.7 percent of the output and hold one-fourth of the area. These proportions are almost exactly reversed in the case of basic grains produced for the domestic market. Family and subfamily farms produce 74.6 percent of the output in basic grains; multifamily farms account for the remaining one-fourth of the area and output of these commodities. Subfamily farms alone account for over half of the area and output of these staple crops.[4]

Table 3.4 shows that Central America devotes more than half of the land in agriculture to the production of agricultural commodities for export.[5] More significant, however, is the negative relationship

[4] See author's thesis, op. cit., Table 4.4, p. 150.

[5] This generalization is based on census data from El Salvador, Nicaragua and Costa Rica where 52.0 percent of the land in farms is used for the production of export crops. The actual figure from Central America is likely to be higher considering the rapid expansion of export production since the last census year. The expansion of the area in production of major export crops was mentioned in Chapter II.

Table 3.4

Distribution of Land Use for Export and Domestic Market Production by Size of Farm Category in Three Central American Countries, 1963[a]

Percentages

Size of Farm Category	Domestic Market Production	Export Production	Total
Subfamily	80.5	19.5	100.0
Family	58.7	41.3	100.0
Medium Multifamily	42.7	57.3	100.0
Large Multifamily	25.4	74.6	100.0
All Categories	48.1	51.9	100.0

Source: Author's thesis, "Agricultural Development and Economic Integration in Central America" (Department of Agricultural Economics, University of Wisconsin, Madison, 1971), Table A18.

a: Data for Costa Rica, Nicaragua and El Salvador.

which exists between size of farm and the amount of land used for internal consumption and the positive relationship between farm size and area used in export production.

Thus, on one hand, multifamily farms predominate in the export sector, but over half of these farms are subfamily farms which do not produce enough income nor full employment for the family. On the other hand, family and subfamily farms dominate domestic market production. Multifamily farms in the domestic market sector are mainly livestock enterprises which hold 85 percent of total pasture. (Beef is becoming an important export commodity--now the fourth major export product.)

The large number of subfamily and family farms (over three-fourths of total farms) is usually conceived of as the traditional sector. Their low output per capita results from having almost three-fourths of the active labor force on less than one-third of the land; their meager capital accumulation and low stage of technological advance, together with their only partial integration in the product, labor and capital markets, help to justify the appropriateness of the term traditional. It can be argued, however, that the interrelated systems of tenure structure, market orientation, and institutional ties are what is really traditional.

PART II: THE FUNCTIONAL ORGANIZATION OF AGRICULTURE

Functional aspects of agricultural organization are economic and institutional ties which in spite of the structural duality--or more appropriately because of it--enable the agricultural sector to function as a consistent whole with mutual interdependencies and interrelationships.

Economic, Institutional and Technical Interrelationships

In spite of dual tenure structures and market orientations, internal interdependencies occur in the labor market and in the product and financial markets.

Even within the traditional sector, many small farms are engaged in the production of an export crop, usually as a cash crop to supplement income.[6] For the export sector, where large scale operation

[6] On the aggregate, subfamily and family farms devote 19.5 and 41.3 percent of their landholdings to the production of export crops

frequently combines production with processing facilities, the output forthcoming from small farms can be an important source of raw material. For instance, 55 percent of all sugar cane milled in El Salvador is purchased from independent producers. In Costa Rica, only five percent of the existing coffee mills process exclusively their own crop. Thus, a product market relationship develops out of the mutual needs for markets and for raw materials between the export sector and in the partially integrated producers of the traditional small farm sector. Small producers, lacking an adequate volume of output, cannot build or oparate efficiently their own processing facilities, let alone get access to capital and financial markets, or even required management skills. Thus, they depend on large entrepreneurs.

Large scale enterprises also act as financial intermediaries for the small farm sector. Since many small farmers are not landowners or have no legalized claim to their land, their access to the institutional credit system is often barred by lack of adequate collateral. In other cases, risk and insecurity of a land mortgage motivate small farmers to prefer credit loans available from large scale producers and processors. Additionally, many credit institutions are not willing or able to absorb the costs of a great number of small operations. As a result, large scale enterprises act as financial intermediaries between small producers and the banking

(see Table 3.4). In long established production areas, it is not uncommon to find very small farms totally specialized in the production of an export crop.

system. In so doing, they not only guarantee a certain supply of raw materials, but also increase their operational earnings through commission fees or interest rate differentials. Although the existence of this function is well known, and on some cases legally sanctioned, research is so scant that it is impossible to quantify its importance.

Labor market interdependency is even more widespread. Historically the traditional sector has been a labor reservoir for permanent labor needs; in modern times its role in providing seasonal labor has predominated. Small farms depend on large farms for temporary employment to supplement family incomes. Large scale enterprises, plantations in particular, depend on the small farm sector to provide seasonal labor.

A recent study shows that seasonal laborers in Guatemala derive an average of 52 percent of their income from seasonal employment.[7] In the Usulután region of El Salvador, small farm owners derive 38 percent of their total annual income from seasonal work, colonos almost two-thirds.[8] In El Salvador 97 percent of the agricultural labor force is employed during the harvest of export crops, while

[7] Lester J. Schmid, "El Papel de la Mano de Obra Migratoria en el Desarrollo Económico de Guatemala" (Land Tenure Reprint No. 46-s, University of Wisconsin, Madison, 1968), pp. 74, 78.

[8] Sergio Maturana, Las Relaciones entre la Tenencia de la Tierra y el Uso de los Recursos Agrícolas de Centroamerica (Proyecto de Tenencia de la Tierra y las Condiciones del Trabajo Agrícola en Centroamerica. Unpublished report, San José, Costa Rica, 1962), p. 148.

only 32 percent is employed during the slack season.[9] In Nicaragua's Pacific Coastal region, small farm owners labor one-third of the time on large farms and plantations for one-fourth of their annual income. In Costa Rica's Central Plateau, small farmers devote one-fourth of their labor time and derive one-fourth of their annual income from seasonal employment.[10] Another study in the same area shows that small farms provide 59 percent of the total seasonal labor and large farms in turn utilize over 90 percent of this seasonal labor power.[11]

This labor market relationship arises from technological conditions of production. Existing land-man ratios compel small producers to seek seasonal employment on large plantations to supplement annual earnings. For large producers, seasonal labor allows savings on overhead and other costs while meeting labor needs at peak points. For coffee plantations, 60 percent of total annual labor need is concentrated between October and January; for cotton, 78 percent in December through February; and for sugar cane, 70 percent in November through April.[12] (Requirements for seasonal labor in bananas are

[9] Banco Hipotecario del El Salvador, El Crédito Agrícola en El Salvador, Vol. 1 (San Salvador, 1966), p. 18.

[10] Maturana, op. cit., pp. 64, 68, 72, 337, 352.

[11] Heraclio A. Lombardo, Análisis de una Economía Agrícola dentro de la Meseta Central de Costa Rica (Instituto Interamericano de Ciencias Agrícolas, Serie Planeamiento No. 4, San José, Costa Rica, 1965), Table XII, p. 62, p. 64.

[12] United Nations, Coffee in Latin America: Productivity Problems and Future Prospects; Colombia and El Salvador (58. II. G.S., 1968), p. 111. Data for the other crops are based on unpublished farm management data designed to estimate coefficients to be used in land use planning.

very low since harvesting is performed throughout the year.) The important seasonality aspect is very often overlooked in explanations of the economic rationality of the minifundia-latifundia, domestic-export market dualities. The following table shows labor seasonality in various operations for export and domestic crops.

Crop	Operation	Season	Percentage of total annual labor input needs
Coffee	arvest	Oct-Dec	49.5
Cotton	arvest	Dec-Feb	78.0
Sugar Cane	Harvest	Feb-April	60.0
Corn (1st crop)	Cycle	Apr/May-Jul/Aug	100.0
Beans (1st crop)	Cycle	May-Aug	100.0
Corn (2d crop)	Cycle	Aug/Sept-Nov/Dec	100.0
Beans (2d crop)	Cycle	Aug/Sept-Nov/Dec	100.0

As the above table shows, harvesting main export crops (except bananas) occurs in a sequential manner during a seven month period roughly corresponding to the dry season. These peak labor requirements of export crops do not coincide with the agricultural cycle of most domestic market crops.[13]

Agricultural Duality and the Orientation of Public Policy

Public policy in agriculture reflects both the undiminished importance of the agricultural export sector to the economy and the wealth-income-political power complex that has determined the traditional and contemporary orientation of public policy.

In an era when land reform is increasingly recognized as a necessary condition to ameliorate the production, income and

[13] The low availability of labor during the rainy season is one of the reasons why large scale production of rice, a recent phenomenon, is highly mechanized in Central America.

employment problems that thwart development efforts, reform of the existing Latin American tenure structures has received only token attention in public policy. In the 1963-1968 period land reform institutes have settled an average of 2,613 families per year in reform or colonization areas, and have affected less than 30,000 hectares annually. Bureaucratic entanglements and other inefficiencies, together with low volume of settlement, have elevated the cost of land reform to over $27,000 per family and almost $2,500 per hectare.[14] Land reform programs have affected less than five percent of potential beneficiaries and slightly over four percent of total land in farms.[15]

With the failure of public policies to redress inequalities, land distribution conditions have deteriorated. In the intercensal period (1950-1960/64), 72 percent of the total increase in the number of farms was in subfamily operations, which accounted for only 8 percent of the increase in the land in farms. In contrast, 73 percent of the increase of land in farms was concentrated in multifamily farms, which represented only a 9 percent increase in the number of farms.[16]

Public policy with respect to agricultural research, education, and extension shows a similar degree of neglect. The traditional

[14] Banco Interamericano de Desarrollo, Progresso Socioeconómico en Americana Latina, Octavo Informe Anual (Washington, D.C., 1969), country reports.

[15] The CIDA study in Central America (op. cit.), estimates that there are 1.8 million farm families of which 715.9 thousand are on subfamily farms and 267 thousand are landless workers. Total land in farms amounts to 13.9 million hectares.

[16] See author's thesis, op. cit., Table 4.7, p. 167.

sector, with its lower technology, political power, and economic capacity is most affected by the weakness of such services. In the 1968-69 period, there were only 355 extension agents and 332 agricultural researchers to service the needs of 1.8 million farm families. Extension experts state that, ideally, there should be one agent for each 150 farmers in order to be effective. Although significant advances have been made in agricultural education in recent years, there have been only 1.6 agricultural students in universities and vocational schools per thousand active people engaged in agriculture.

The allocation of agricultural credit reflects the oft-mentioned export orientation of agricultural policies in Central America. (See Table 3.5) Like credit, road and transport facilities--a crucial support of modern agriculture--are to this day designed to connect the main export crop production areas and principal cities with the main exit ports to international markets. Not until the creation of the Central American Common Market has this type of infrastructure been purposefully designed to integrate domestic markets of a given country with those of other member nations. Until the completion of the Interamerican Highway in the 1950's, the Central American nations did not have any interconnecting system of all-weather roads.

In summary, the fruits of technical and economic progress have accrued largely to the export sector. The unilateral emphasis on the development of export production has not only restricted resources that were or could have been available to the small farm sector in domestic market agriculture, but also has tended to aggravate its

Table 3.5

Central America: Volume or Amount of Agricultural Credit Allocated to Major Export Crops and Livestock, 1965/67

Percentages

Country	Export Crops[a]	Major Export Crops and Livestock[b]	Other Commodities
Guatemala	73.4	91.7	8.3
El Salvador	72.3	76.9	23.1
Honduras	52.4	76.2	23.8
Nicaragua	54.2	79.1	20.9
Costa Rica	70.0	91.8	8.2

Source: Author's Appendix, op. cit., Table A21.

a: Includes coffee, cotton and sugar cane for Guatemala, El Salvador, and Nicaragua; coffee and cotton for Honduras; and coffee, sugar cane, cocoa and bananas for Costa Rica.

b: Nine-tenths of livestock loans are allocated to beef cattle enterprises.

problems. Furthermore, the expansion of export agriculture and the nature of its technological process are largely responsible for the stagnation of traditional agriculture.

Resource Competition in Agricultural Duality: Some Case Studies

The growth of the export sector in Central America since the 1950's retraces the historical pattern of claiming resources, particularly land and labor, from the traditional sector.

Largely because of inadequacies in the national statistical base, the detection of the direct expansion of the export sector through direct resource claim is a difficult process, particularly

so, in the case of the coffee and banana enterprises which, being consolidated industries, expand largely on the basis of resources already under their command or sphere of influence. In other instances national statistics, even by political subdivisions, fail to record the process because of the lack of correspondence between political and agricultural regions. Moreover, field research in this area is lacking.

Despite these limitations, there is sufficient documentation on two particular cases to illustrate the nature of the direct expansion of the export sector and its effects on the traditional sector. A third case, concerning cotton production in El Salvador, will illustrate the reverse, a contraction in the export sector.

Banana production in Central America made a dynamic comeback after a period of virtual stagnation in the 1950's and early 1960's. Total exports averaged 981,200 tons in 1963-67, increased to 1.5 million tons in 1968 and surpassed the two million ton mark in 1969.[17] This expansion in banana production has been concentrated primarily in the Atlantic Lowlands of Costa Rica. Local entrepreneurs are responsible for 87 percent of the total increment in the area. As can be expected, the seizing of this export opportunity brought about significant changes for the local and national economy in demand and supply. Private foreign and local investment, credit policies designed to channel funds into banana production, and

[17]Unless otherwise indicated, information quoted in this section is from SIECA, Informe sobre el Banano en Centroamerica (unpublished report, 1969).

growing export receipts, have increased internal demand and the country's capacity to import.

More significant have been the changes in supply and allocation of resources. Since there is ample undeveloped land in the Atlantic Region, the expansion of banana production did not claim significant amounts of land from the traditional sector. Furthermore, the discovery of Panama Disease resistant banana varieties allowed the replanting of land previously used for this purpose until the 1940's and 1950's. Nevertheless, to the extent that banana production remained a relatively labor intensive enterprise, it did require ample labor, available only from the traditional sector. It is estimated that banana enterprises have almost duubled their labor force in the period 1967 to 1969. This implies that roughly 14,000 laborers have left small scale agriculture.[18] This labor drain has virtually caused the disappearance of small scale agriculture in the area. Larger farms, unable to enter banana production because they lack adequate physical or financial resources, have shifted to labor saving enterprises such as beef cattle production.[19]

This annihilation of small scale agriculture by the export sector can be explained by the conventional theory of opportunity cost

[18] These are the author's estimates based on the average and incremental land to labor ratios reported by producers in Costa Rica and Honduras. Total employment in banana plantations is estimated to have increased from 17,400 to over 30,500 laborers in the 1967-69 period.

[19] An initial investment of approximately $600 to $800 (U.S.) per acre may indeed be an effective barrier of entry into banana production.

of labor. Typical income figures in the traditional sector indicate family income levels of between $500 and $600 per year. In contrast, average annual income per worker in banana production ranges from $953.00 to $1,520.00.[20] Furthermore, in addition to possible fringe benefits as wage laborers, campesinos become eligible for the benefits of the Social Security System and other services and amenities.

A second case history, far more serious because of its welfare implications, also shows encroachment. Cotton production as a large-scale commercial operation is a post World War II phenomenon. Cotton exports increased from an annual average of 376,600 bales in 1954-59 to an average 1,045,200 in the 1964-68 period.[21]

Nicaragua is the region's largest producer with 46.2 percent of the exports and 44.0 of cotton area in 1965-68. El Salvador and Guatemela are second with 28.8 and 20.1 percent. Honduras and Costa Rica are minor producers (3.8 and 1.1 percent of cotton exports).

Cotton is a crop best adapted to the ecological conditions prevailing in the Pacific Coastal areas. Before its advent, these areas constituted one of the agricultural frontiers where immigrants, unable to find land or employment in the highlands, were largely absorbed by livestock haciendas as tenants or sharecroppers. Under

[20] Minimum wage rates of banana workers in 1969 were set at $2.51 per day. Average daily wages of $4.51 are reported for 'tarea' or contract work (v. La Nacion, 15 de 1969). Annual income figures are estimated based on these wage rates during 254 workdays per year.

[21] See author's Appendix, op. cit., Table A3. Area estimates are based on SIECA's official statistics which have appeared in their annual reports entitled "El Algodón en Centroamerica."

such tenure arrangements, haciendas became mixed enterprises producing both beef and cereal grains. Independent campesinos also combined both enterprises on their small farms.

The advent of cotton totally upset this stability. Tenure institutions made it simple to divest campesinos of land for large-scale production of cotton. The fact that most cotton producers are not landowners but investors simplified the severing of ties or claims which might have developed.[22] Many independent campesinos, lacking financial resources or technical know-how, had to rent their land or join the cotton expansion on a modest scale.

The result was massive displacemett of campesinos and a drastic decline in basic grain production. Displaced campesinos were forced to emigrate to other frontier areas, join the migrant labor force, or crowd into the minifundia sector.

In Nicaragua, labor displacement followed by emigration was of such magnitude that as early as 1964, as estimated five percent of the cotton crop was lost because of labor shortages. Mechanization soon followed.[23] Here, as in Costa Rica, there exists the seemingly paradoxical situation of (regional) labor shortages amidst widespread (national) unemployment and underemployment.

[22] Comision Nacional del Algodón, La Economía Nacional y el Algodón (Managua, Nicaragua, 1968), p. 11; Ministerio de Agricultura, Anuario Estadístico Agropecuario 1968-69 (San Salvador, 1969), p. 26.

[23] La Economía Nacional ..., op. cit., Part VI, pp. 2, 3.

Guatemala has relied on migratory workers to supply cotton's seasonal labor requirements. In heavily populated El Salvador, with no agricultural frontier, the traditional sector was forced to absorb a major proportion of displaced campesinos. Many campesinos had to migrate, mostly illegally, to neighboring Honduras.[24] Evidence of the strain on the traditional sector is shown by the 71.6 percent increase in the number of farms 10 hectares or less in cotton areas of El Salvador from 1950 to 1961, while average farm size declined 54.5 percent. Nicaragua's cotton departamentos showed an average decline of farm size of 38.5 and 19.6 percent in the intercensal period (1952-1964) for holdings in the 1-9.9 and 10-49.9 manzana categories.[25]

While Nicaraguan cotton acreage increased steadily from 13,600 to 61,100 manzanas from 1952-67, there was a corresponding decline in basic grains and sesame from 78,000 to 31,900 manzanas. Regression analysis of these data supports the assertion that cotton acreage expanded almost exclusively at the expense of the area in basic

[24] This recent influx of landless workers, largely generated by the cotton expansion, was perhaps the single most important underlying factor in the 1969 armed conflict between the two countries. Over the years, some 250,000 Salvadorenos came to reside in Honduras.

[25] Calculation based on the Agricultural Census of the respective countries. Comparable figures for the decline in the average size of farm are as follows: El Salvador, 15.6 percent decline in average size and 55.3 percent increase in number; Nicaragua, 11.6 percent decline in number and 1.3 percent in average size.

grain production.[26] This is because cotton and basic grains grow well under similar climatic conditions and on similar soils, but are not competitive ecologically with other crops.

These shifts in land use affected the output of sesame and basic grains. In 1952, the estimated output of cotton, basic grains, and sesame was 11,300, 83,700 and 14,900 metric tons. By 1963-67, cotton increased its yearly output to 90,400 metric tons while sesame declined to 3,500 tons. Due to increasing yields, basic grain production averaged 55,000 tons yearly, still one-third lower than in 1952.[27] The decline in basic grains was not compensated for at the national level, with consequent repercussions on its availability. In fact, Nicaragua changed its traditional position from a net exporter to a net importer of grains. Net exports of basic grains amounted to 39,700 metric tons in 1953-57. By 1958-62, net exports had declined 88 percent. From 1963 to 1967, Nicaragua's net imports of grains amounted to 70,300 metric tons.[28]

[26] (R = -.997) The corresponding equations were:
Acreage in Basic Grains = 89.27 - 1.05 Cotton + 0.36 Other Crops;
(R^2 = .998) (.019) (.009)
Acreage in All Other Crops = 128.01 - 0.61 Cotton; (R^2 = .091)
(.535)
Regression and correlation coefficients in the first equation were significant at the .001 level; in equation two they were not significant at the .05 level.

[27] Computed from the following sources: Dirección General de Estadística, Encuesta Agropecuaria de 1952, Boletin de Estadística, III Epoca No. 4 (Managua, 1952); Banco Nacional de Nicaragua, Estudio de la Economía del Algodón en Nicaragua (Managua, undated); Consejo Nacional de Economía. Oficina de Planificación, Estadísticas del Desarrollo Agropecuario de Nicaragua 1960-1967 (Managua, 1968).

[28] Computed from: Ministerio de Economía, Memoria de Recaudación General de Aduanas (Yearbooks 1953-1955); Dirección General de

These case studies of bananas in Costa Rica and of cotton in Nicaragua show ways in which the export sector has always expanded at the expense of the weaker traditional sector through claiming resources, particularly land and labor. The result of this expansive process is the virtual extinction or displacement of the traditional sector in regions where there are competitive enterprises. Institutional constraints faced by the traditional sector prevent it from compensating for the product which has been displaced. Thus an expansion of the export sector has frequently been accompanied by deficits in some food crops, inflation and increased food imports.

The impact of the growth of the export sector on other variables such as employment, income or general welfare depends greatly on the particular crop in question. Banana expansion may have effected a net gain because of the transfer of labor from a low productivity occupation to one of higher productivity and income. The cotton industry, however, prompted massive displacement of campesinos, migration, and additional overcrowding in remaining areas of peasant agriculture. Seasonal employment (at low wage rates) created by this industry does not compensate for this imbalance. Thus, employment and income have declined, and income distribution has deteriorated.

The impact of the growth of the export sector on trade and balance of payments may not be as great as indicated by a simple measurement of export proceeds. An accurate picture can only be

Estadística, Anuario de Comercio Exterior (Yearbooks 1956-1963); and SIECA, Anuario Estadística Centroamericano de Comercio Exterior (Yearbooks 1964-1967).

obtained if the increments in foriegn exchange earnings are weighed against the value of additional imports of displaced commodities and of inputs used in the production process as well as the value of repatriated profits if foreign firms are involved.

Available evidence from both historical and contemporary records indicates that the processes described above tend to be irreversible. In the case of permanent crops such as coffee and bananas, adverse technical or price conditions induce a reduction in total output, but tend to maintain the area under cultivation because of prior heavy investment. With a few exceptions--such as during the Great Depression--international commodity prices are seldom so low as to prevent export entrepreneurs from covering fixed and maintenance costs of their operations.[29] Moreover, in times of financial crises, public policy normally operates in such a way as to relax the rule governing credit, to grant fiscal exemptions or to freeze legal wages. Even if bankruptcies do occur, they generally result in the enlargement and consolidation of holdings rather than a redistribution of property. Only recently have land reform agencies taken over bankrupt plantations for the establishment of cooperative farms.[30]

Banana production represents a special case. Since the industry is dominated by corporations in various countries, depressed market

[29] For instance, in spite of wide fluctuations in world coffee prices, coffee acreage has steadily increased from 418,000 to 670,200 hectares in the 1960-1968 period.

[30] Among these are the Bataan and Pejibaye cooperatives in Costa Rica and the Fincas Nacionales in Guatemala.

conditions rarely lead to a significant decline of overall volume, although particular country operations may be considerably reduced or enlarged. A high degree of vertical integration acts as a buffer zone. When the international market is weak, however, such monopsonistic powers frequently result in reduced purchases from independent producers.

The recent horizontal diversification of the main banana corporations has caused a shift to alternative land uses. Since the formation of the Central American Common Market, the United Fruit Company has made major investments in the oils and fat industry, diversifying its commercial production with African palm, beef cattle, and basic grains for the regional market and pineapples for export.[31]

Thus, contraction in the export sector contributes to further concentration either through diversification within existing units or through special fiscal and monetary policy measures designed to protect the industry from external conditions. However, unemployment increases, depressed real wages and reduced seasonal employment may adversely affect labor income at such times.

A recent example of the contraction of the cotton industry in El Salvador illustrates this. Beginning in 1964, rising costs and declining cotton prices in international markets forced producers to

[31] An interesting study of changes in use patterns in ex-banana lands is Pierre A. Stouse, Jr., Cambios en el uso de la Tierra en Regiones Ex-bananeras de Costa Rica, Instituto Geográfico de Costa Rica (San José, 1967).

shift large amounts of land out of cotton production.[32] A total of 46.671 manzanas was taken out between the 1965-66 and 1966-67 agricultural years. Of this latter acreage, 47.3 percent was planted to corn, 33.7 percent was turned into pastureland, and 7.6 percent was planted to rice.[33] Of the 15,705 manzanas turned into pasture, only 1,470 were actually planted with improved pasture; most of this land was left idle. Rather than being returned to campesinos' hands under any given tenure arrangement, land was used for extensive livestock grazing in a country with a land-man ratio of 1.5 manzanas per worker in the small farm sector.

[32]The rapid rise in costs was mainly due to the expenditures required to combat the "white fly" (Bermisia tabaci), a pest that attacked the cotton plant. See: Ministerio de Agricultura, Estudio Económico del Cultivo del Algodón, Ciclo 1966-67 (San Salvador, 1968). This pest originated largely as a result of ecological imbalance caused by the rather indiscriminate use of chemical insecticides. Various institutional factors contributed to the existence of this phenomenon. On the one hand, research on pest control lagged far behind production; there were no scientifically determined "recommended" practices, only those of insecticide importers and agents whose main concern was to maximize sales. These interests coincided with those of agricultural pilots who are normally remunerated according to the total volume of chemicals sprayed during the various applications, which frequently exceeded thirty during a crop year. On the other hand, planters, being largely land renters and annual investors, were unconcerned with the long-run ecological effects of insectidides as long as production remained profitable. The ecological imbalances thus created affected not only wildlife and humans but also is reported to have exterminated the honeybee industry from these areas and significantly hampered the fish and shrimp trawling industry in the coastal areas of El Salvador.

[33]Ministerio de Agricultura, Dirección General de Economía Agropecuaria, Estudio Económico Agrícola del Cultivo del Algodón, Ciclo 1966-67 (San Salvador, Abril 1967), Quadro 1.

Nor did the cotton land planted to rice and corn revert to campesino hands. Rather, it was used mainly for large scale production of cereals under mechanized conditions and a technology not available to the small farmer. This would account for 58.3 percent of the increase in corn production for El Salvador between 1965-66 and 1966-67. The 4,056 metric tons of milled rice produced on this ex-cotton land would explain 44.6 percent of the total increase in output that same year.[34]

From 1965 to 1967, Salvadorian net exports (i.e.: exports minus imports) of rice to the Central American Common Market increased thirteen fold from 810 to 10,700 metric tons. Although the country still remained a deficit producer of corn, net imports from the rest of the world declined to zero between 1965 and 1967 and net imports from the common market declined 88 percent to a mere 6,200 tons.[35]

Thus, contraction of an annual crop (cotton) in the export sector does not result in a restructuring of opportunities for the traditional or small farm sector, but in the emergence of a large scale modern subsector commercially producing for the regional market. Furthermore, this case typifies a more general process: polarization of the production structure of basic grains caused by the emergence of large scale, technologically advanced firms in a market traditionally dominated by campesino producers.

[34] Computed from crop production estimates published by the Ministry of Agriculture of El Salvador in Estadísticas Agropecuarias Continuas.

[35] Figures computed from SIECA, Anuario Centroamericano de Comercio Exterior.

Various factors have contributed to the creation of this polarization. Rapid increase in domestic needs induced by high rates of population growth and urbanization has been accompanied by the development of the animal feed industry. Small farmers within the dual system have not been able to increase production at a rate or in the magnitudes required by domestic demand, thus creating incentives for large scale producers to enter the industry. Moreover, the Central American Common Market has opened the way to a larger deficit area which, in addition to enlarging demand, has reduced the risk of adverse price effects. High price supports for basic grains and depressed or declining prices for traditional export products have made relative prices more favorable for producing staples, an added inducement for large scale producers. Large scale production facilitates the adoption and use of advanced technology, further increasing profitability.

High support policies could also have sustained income levels for small producers, but since they have not been coordinated with credit, technical assistance and modern inputs and services, their impact is questionable. High price support policies are economically feasible so long as a given country or area remains in deficit or is self-sufficient; the alternative is to spend scarce foreign exchange on imports when the internal situation is one of less than full employment. Nevertheless, when the internal price structure makes it impossible to dispose of surpluses either internally or in international markets, the required export subsidies would increase the social costs of such policies. To the extent that permanent subsidies

for persistant surplus are difficult to sustain, support prices must decline. This, in turn, would have a differential impact particularly on small and inefficient producers whose incomes are likely to decline if price changes are not compensated by productivity increases.

Thus, the historical duality of the agricultural sector in Central America is being further polarized by the growth of this large scale, capital intensive domestic market sector.

Production Effects of the Development Pattern in Agriculture

Unequal resource competition between the domestic and export sectors and a policy emphasis on the new commercial domestic sector has led to a very one-sided patterm of growth, as seen in growth rate differentials of output and yields and in the evolution of food imports from outside the common market.

During the 1950-67 period, output growth rates of the major export crops averaged 4.7 percent annually. In contrast, corresponding growth rates for domestic market commodities was over 60 percent lower, averaging 2.9 percent annually during the same period. In the 1950-59 period, output of domestic commodities was virtually stagnant or declining. It increased considerably during the 1960-67 period, but remained below the corresponsing rate for export commodities.

This acceleration may have been greatly influenced by the emergence of a large scale technologically modern segment in the production of basic grains. In the 1960-67 period, the aggregate annual growth rates in yields for corn and rice are considerably higher than those for beans and sorghum, which are produced largely in the traditional sector. Prior to the development of large scale enterprises (1950-59),

declining rates in average yields of basic grains (-0.2) coincided with the most rapid gains in yields of the major export crops (3.8).[36]

In general, these statistics present additional supporting evidence that the fruits of technical and economic progress have been concentrated in the export sector and its recent expansion as an ancilliary modern sector of the domestic market economy. For this and other reasons already stated, the Central American countries have faced increasing difficulties in meeting the growing demand for food, a situation which has led to an increase in the import of food staples.

After being net exporters of all four basic grains, the Central American countries became net importers of corn and rice (1955-59) and then of beans and sorghum (1960-64). (Table 3.6) With the exception of beans (1965-68), net imports of all basic grains have been increasing. With the advent of large scale rice production in 1968, the Central American countries have become self-sufficient in rice and accumulated considerable surpluses.[37]

[36] Growth rate figures computed from unpublished SIECA and GAFICA series compiled from official statistics of the Central American countries.

[37] Since all countries except Honduras accumulated rice surpluses, free trade of this commodity has been suspended between Nicaragua and Costa Rica and the remaining countries, as a protective measure against market disorganization caused by more economic imports from El Salvador and Guatemala. This violation of the integration treaties was motivated by the inability of Nicaragua and Costa Rica to yield to common market pressures to lower their support prices to a level more compatible with the one existing in the other three countries. Since internal prices in the area, and in these two countries in particular, are considerably higher than international market prices, the disposal of surpluses had to be heavily subsidized.

Table 3.6

Central America: Net Imports of Basic Grains from the Rest of the World, 1950-1968

Metric Tons

Period	Corn	Rice	Beans	Sorghum	Total
1950-54	-60,630[a]	-45,568	-18,649	-4,305	129,152
1955-59	44,003	45,243	-17,687	-5,034	66,525
1960-64	53,045	35,567	7,548	12	96,172
1965-68	101,458	51,409	388	6,377	159,632
		Annual Averages			
1950-54	-12,126	-9,114	-3,730	-711	-25,711
1955-59	8,001	9,049	-3,537	-1,007	12,506
1960-64	10,609	7,133	1,510	2	19,234
1965-68	25,365	12,852	97	1,594	39,908

Source: International Trade Yearbooks of Individual Countries, and SIECA, Anuario Centroamericano de Canercio Exterior (1966-1968).

a: Negative signs represent net exports.

During the 1960-64 and 1965-68 periods, the value of imports of unprocessed agricultural commodities rose from $8.5 to $14.2 million annually. Imported processed agricultural commodities went from $25.2 to $30.0 million per year. As a proportion of agricultural GNP, food imports have increased from 0.8 to 1.2 percent in this time period.[38]

Although food imports are not a major problem for Central America, their growth reflects the inability of the agricultural sector to meet the growing demand for food. Furthermore, food imports can be

[38] See author's thesis, op. cit., Tables 6.10 and A26.

deemed undesirable, considering balance of payments problems and widespread unemployment.

Thus, an additional goal for agricultural development should be increased output of commodities for the domestic market and self-sufficiency in food and fiber production. Due consideration must be given to agricultural distribution and expansion of employment opportunities. However, technical progress in the production of export crops has been so capital intensive that it often results in a direct reduction, or a qualitative change, in its labor requirements.

Income, Employment, and the Nature of Technological Progress in Export Agriculture

Historically, the agricultural export sector has played an important role in providing employment for a growing population. In the contemporary period, in spite of rapid industrialization and urbanization, the non-agricultural sectors in general, and industry in particular, are not absorbing labor at a rate commensurate with the growth in the labor force. Thus, agriculture has been compelled to employ almost half of the total increment in the active population of Central America in the 14-year intercensal period.

Changing land/man ratios, however, indicate the traditional sector has absorbed the major share of the growing population; the agricultural export sector is no longer performing its historical role as major employer because of the increasing use of capital intensive, labor saving technology. Given rapid expansion, total employment in the sector has increased, but at a decreasing rate. Direct

quantitative evidence on relative capitalization in export production at various times is not readily available but cross-sectional data illustrates the general phenomenon.

The coffee industry in Central America has experienced unprecedented progress. Aggregate yields registered an average annual increase of 2.5 percent between 1950 and 1967, due to a series of complementary technological developments and cultural practices. However, there has been a less than proportionate increase in labor and a decline in labor per unit of output. In some cases there has been absolute displacement of labor. Sometimes the displacement and the subsequent movement out of the area created labor shortages during the harvest and caused considerable losses and declines in the total crop marketed.[39]

Permanent labor input requirements per unit of land in coffee are 76.5 percent lower with chemical weeding methods than with the traditional hand-tool ones, with a corresponding 33.8 percent decline in average cost.[40] A shift from traditional to modern techniques represents a 17-fold increase in capital costs, with only a 52.5 percent increase in labor costs per unit of land. Due to a 122.2 percent increase in average yields, labor input requirements per

[39] For instance, it is estimated that more than 20 percent of the 1969-70 coffee crop in the Central Plateau of Costa Rica was lost because of labor shortages. This, in spite of governmental efforts to remedy the situation through labor recruiting in other areas of the country and the early closing of schools to allow students to participate in the harvest.

[40] See author's Appendix, op. cit., Table A23.

unit of output under modern technology is almost cut in half, while capital input costs are over seven times higher than under the traditional methods.[41]

Although average variable costs per unit of output declined 3.0 percent under modern technology, costs per unit of land increased 115.6 percent. Without considering economies of scale, increased total investments and cash outlays may effectively prohibit small producers from adopting the new technology. Labor and management represent 78.3 percent of the cost per unit of output under traditional methods, but only 52.5 percent under improved technology.[42]

The same relationship exists between productivity and labor in coffee production in Guatemala. Average yields are inversely related to the amount of labor required per unit of output. Plantations that averaged 11.0 man-days for each 100 pounds of coffee produced had average yields per hectare that were from 27 to 55 percent higher than those utilizing more labor to produce this same amount. Labor costs per unit of output on the most capital intensive farms were less than half those on the most labor intensive ones.[43]

Further information on Guatemala shows that between 1950 and 1960, while total coffee acreage and output increased 81 and 128 percent respectively, the number of laborers employed increased by

[41] Ibid.

[42] Ibid.

[43] Based on data in: Lester Schmid, "The Productivity of Labor in Export Crops of Guatemala: Its Relation to Wages and Living Conditions," Interamerican Economic Affairs (Vol. 22, No. 2, Autumn 1968), pp. 37-38.

only 27 percent. Between 1950 and 1964, while coffee acreage and output increased by 85 and 157 percent respectively, total employment increased only 6.6 percent, only about 8 percent of the increment added to the agricultural labor force during this period.[44] Technical coefficients imply that the coffee industry in Costa Rica, despite rapid expansion, provided permanent employment for less than 17 percent of the 1950-64 increment in the agricultural labor force. These deductions illustrate the magnitude of the problem in two countries where coffee production constitutes the biggest industry and produces almost one-third of the agricultural GDP.[45]

Coffee mills also have expanded through adoption of capital intensive, highly mechanized techniques, thus reducing employment. Higher volumes of investment and operating capital required to remain competitive in the industry have caused a decline in the number of firms. The number of coffee mills in Costa Rica declined from 128 to 119 between 1951 and 1968, a period in which total production quadrupled. In Guatemala, the number of coffee mills declined from

[44] Compiled from: Dirección General de Estadística, Censo Cafetalero 1950 (Guatemala, C.A. Agosto-Octubre 1953); Banco de Guatemala, Official statistics (unpublished); 1960 employment estimates, from Asociación Nacional del Café; El Problema Agrario en los Paises Centroamericanos, Statistical Annex, paper presented at the Extraordinary Meeting of Executive Officers of Land Reform Institutes of the Central American Isthmus (Panama, May 1969).

[45] Increased labor efficiency would be welcomed if alternatives of equal or higher productivity were available for those not being absorbed. In their absence, however, as the evidence indicates, the inequities within the system increase.

200 to 111 between 1951 and 1962, even though coffee production almost trebled during the period.[46]

In Costa Rica, the reduced number of mills and their high capital requirements brought about a rapid growth in the formation of cooperative facilities, virtually non-existent in 1950. In 1968, 18 of the 119 coffee mills operating were small farmers' cooperatives.[47]

This trend toward capital intensive methods of production also is found in cotton, sugar cane and bananas. The establishment of the cotton industry in Nicaragua resulted in massive displacement of campesinos, subsequent labor shortages and rising wages by 1963. From 1963 to 1967, the number of mechanical cotton pickers rose from 13 to 200. In 1967, over 20 percent of the cotton crop was harvested mechanically, with average cost per unit 45 percent lower than that picked by hand: another case of the hidden social costs of the ongoing development process.[48]

[46] Oficina del Café (Costa Rica, unpublished statistics); Dirección General de Estadística, op. cit.; ANACAFE, Informe Anual del Departamento de Asuntos Agrícolas (Guatemala, Abril de 1965), p. 6.

[47] Oficina del Café, Noticiero del Café (Boletin No. 56, Enero de 1969). This development is of considerable significance in a country where family and subfamily coffee farms comprise 30.6 and 54.2 percent of all growers and produce 41.2 and 12.0 percent of the total volume of production, respectively. Oficina del Café, Informe de Labores: 1969, op. cit.

[48] Justin Gutknecht, "El Proceso de Desmote del Algodon en Nicaragua," (Managua, 1966), cited in La Economía Nacional y el Algodón, op. cit., Part IV, p. 5. Between 1966 and 1967, wages rose 33 percent. Information from Comisión Nacional del Algodón, Estudio sobre Costos de Producción en las Explotaciones Algodoneras de Nicaragua, 1966-1967 (unpublished study).

In Central America, cotton utilizes 10 percent of the cropland and produces almost 10 percent of the agricultural GDP, but provides permanent employment to less than .6 percent of the labor force in this sector. Total employment in the cotton industry is less than 3 percent of the labor available in the agricultural labor force.[49]

An inverse relationship exists between the scale of production and the use of labor on sugar cane plantations with mills in El Salvador. The smaller plantations utilize two or three times as much labor per unit of land as their larger counterparts. Labor-land ratios consistently decline within a range of 0.77 and 0.30 agricultural workers per manzana from the smaller to the larger plantations. Larger plantations employ almost five times less permanent labor and two or three times less seasonal labor per unit of land than the smaller ones. Only 11.4 percent of the total labor force in all these plantations are permanent employees; 88.6 percent are seasonal laborers.[50]

Like coffee mills, sugar cane processing plants are increasingly relying on purchases from independent producers to utilize their existing capacity efficiently. In El Salvador in 1968, 44.6 percent of the cane processed into sugar was purchased from independent producers.[51]

[49] This estimate is based on Nicaraguan estimated total annual labor requirement of 18.5 man-years per one hundred manzanas. Seasonal labor requirements represent 81.5 percent of the total annual labor requirement, Ibid.

[50] Calculated from statistics contained in: Ministerio de Agricultura y Ganadería, Anuario de Estadísticas Agropecuarias Continuas 1967-68 (San Salvador, El Salvador, Octubre de 1968).

[51] Ibid.

Previous labor-land ratios permit estimates of total employment by the sugar cane industry, which is providing permanent employment to roughly 22,000 workers out of an agricultural labor force of 2.3 million people in 1964. Sugar cane production represents about five percent of the agricultural GDP.

Even though banana production utilizes considerable amounts of labor--mostly on a permanent basis--it has not escaped the labor-saving trend. Aerial application of fertilizers and insecticides and the use of cable and belt conveyers have reduced labor requirements. Labor-land ratios have declined from 3.0 to 0.8 laborers per hectare from the 1930's to the present.[52] However, existing marketing and financial analyses do not warrant many inferences on this particular issue.[53]

The coefficients presented in the previous cases make it possible to derive estimates of the employment in export agriculture in the Central American countries. (See Table 3.7)

Coffee remains the largest employer in the agricultural sector with over 85 percent of permanent employment and almost 70 percent of total employment. Sugar and coffee together account for over

Based on information from Charles M. Wilson, Empire in Green and Gold (New York: Henry Holt and Co., 1947), p. 126, and SIECA, Informe sobre el Banana ..., op. cit. Contemporary labor-land relationships are modal ratios reported by banana companies for the 1967-69 periods. Incremental ratios of 2.2 workers per hectare are reported in expanding plantations.

[53] Henry B. Arthur, et al., Tropical Agribusiness Structures and Adjustment: Bananas, Graduate School of Business Administration, Harvard University (Boston, 1968), pp. 67-72.

Table 3.7

Central America: Estimates of Labor Employment in Export Agriculture, c. 1968

Thousand People

Main Crops	Permanent	Seasonal	Total
Coffee	590.0	114.2	704.2
Cotton	13.9	62.7	76.6
Sugar Cane	21.4	174.0	195.4
Bananas	46.5	n.a.	46.5
Total	671.8	340.9	1,022.7

Source: Extrapolation of the technical coefficients in tables 4.15 - 4.19, author's thesis, op. cit.

four-fifths of the seasonal employment and are the two major overall employers in this sector.

Thus, it can be inferred that while export agriculture utilizes over one-third of the cultivable land in farms (over half in some countries) and produces more than one-half of the agricultural GDP, it provides permanent occupation to less than one-third (28 percent) of the labor force in agriculture. This figure rises to 43 percent when seasonal labor is included, although this may be an overestimation since seasonal labor often includes people who are not regularly in the labor force (i.e., women and minors). The above figures illustrate the present imbalances between resource use, output and employment and serve to emphasize the great discrepancies that exist in output per worker between the export and domestic market sectors.

While the average output per worker in domestic agriculture averages $455, in export agriculture the corresponding value is $896 per permanent worker.

We can infer from the preceding case studies that the development of export agriculture along capital intensive lines has reduced the capacity of the export sector to absorb labor. Frequently, it has also resulted in an absolute decline in employment for particular industries. Due to the economic preponderance of this export agriculture and the existing conditions in the domestic market counterpart (including the emerging large scale commercial sector of domestic agriculture), this reduced employment capacity has serious consequences for the entire agricultural economy.

A second repercussion of this pattern of development has been a change in the nature and functioning of the labor market within agriculture. While capital intensity has diminished the relative need for permanent labor, the correlative increase in yields and the as yet limited mechanization of most harvesting operations has intensified the need for seasonal labor. This change decreases employment security for large numbers in the rural labor force. Moreover, since capital intensity constitutes both a barrier to entry and a competitive requirement, firms lacking resources to innovate and increase the scale of operations are likely to disappear or be forced to accept lower income levels. Thus, further concentration and polarization may be one of the outcomes of this process.

Causal factors for capital intensive development in export agriculture are essentially the same as those inducing similar

developments in the other sectors of the economy with one significant difference--imported technology is well suited for the large scale of operation typical in export sectors and in the commercial sectors of domestic agriculture. Thus, it is not surprising to find a direct relationship between plantation size and capital intensity and an inverse relationship between it and labor use.

Given the scale of operations, capital intensive techniques do result in considerable productivity gains which help the industry to be more competitive in world markets. By reducing the permanent labor requirements and increasing land productivity, capital intensive techniques reduce either directly or indirectly the cost per unit of output.

The lack of symmetry between relative capital and labor costs in terms of relative resource endowments is another factor. Furthermore, labor and wage policies--and frequently, incongruencies in labor legislation--tend to overvalue the price of labor. Incongruencies of existing legislation set high levels of severance pay and make it difficult to terminate employment contracts. These latter factors have led to the diffusion of indirect labor contractual practices such as subcontracting.

Finally, it should be mentioned that regional labor shortages resulting from land concentration or the erosion of traditional small farm agriculture also induces the adoption of labor saving techniques. In crops such as cotton and certain basic grains, almost the entire production process can be mechanized.

In short, economic and institutional factors combine to increase the relative profitability of labor-saving techniques despite their depressing effects on employment opportunities, the likelihood of further polarization of production and a deterioration in the existing patterns of income distribution.

PART III: IMPLICATIONS FOR AGRICULTURAL DEVELOPMENT POLICY

Within the present economic organization of agriculture, economic and institutional forces combine to induce a pattern of growth in which the market mechanism functions to intensify and enhance existing dualities and to concentrate further claims for resources, income, and market opportunities. This in turn contributes to economic isolation and proletarization of the majority of the farm population. In this economic and social setting, serious doubts arise about the net benefits of export-led economic growth in agriculture when its total benefits are weighed against the less obvious but more pervasive social costs. While conventional equilibrium analysis is useful in determining the specific performance goals of public policy, the procedural aspects and objectives of policy should conform to the structural and functional features of the existing economic organization.

The more salient goals of public policy appear to be increasing productivity and production of agricultural commodities in order:

1) To expand the volume of traditional export crops to the maximum compatible with the growth and conditions of external demand;

2) To increase the volume of exports of non-traditional products and to reduce the external vulnerability caused by overspecialization;

3) To supply the needs of a growing population and to improve nutritional levels; and

4) To substitute agricultural imports and achieve a high degree of self sufficiency in agricultural production.

In the period studied, the Central American agricultural economies have had considerable success in achieving these policy goals. However, they have failed to create sufficient employment opportunities or to improve income levels for the majority of the rural population, thus accentuating rural-urban income differentials as well as those within the agricultural sector. These aspects indicate that the following additional goals for public policy are needed:

1) Modernization of the traditional sector of agriculture and its progressive integration into the monetary market economy;

2) Creation of gainful employment opportunities for the growing labor force;

3) Improvement of income and consumption levels for the rural population, particularly the traditional sector.

Most development programs implemented in the past, and the majority currently being undertaken, emphasize short-run achievement of the specific performance goals mentioned first. This means that the last set of policy objectives will fall, de facto, into oblivion. It is suggested that the Central American countries take advantage of the historical coincidence of favorable external demand and price

conditions for their major export products and a highly competitive and technologically advancing large scale export sector, and shift the relative emphasis of development policy to the achievement of the latter objectives. This substantive change in the orientation of agricultural development policy will make it more compatible with policies for industrial and general economic growth, whose success depends on expansion of the internal market through higher levels of employment and income for a rapidly growing labor force.

Conceptually, this policy requires implementation of institutional and economic changes to affect the existing distribution of wealth and income within the private sectors of the agricultural economy. In addition, it requires a redistribution of public expenditures and investments within agriculture and between agriculture and the larger economy.

It is suggested that the assignment of performance and production goals, with a minimum critical participation of public resources, should be the general orientation of public policy for the large scale sector of agriculture. This is required to liberate resources to be used in the more needy small farm sector. The needs of the former can increasingly be served through the private sector or by utilizing its superior organization to generate its own services. Agricultural credit and discount policies appear to be the more appropriate instruments to achieve these purposes.

In the small farm sector, technological retardation and fragmentation of the land base are major development bottlenecks. Consequently, it is suggested that public programs concentrate on diffusion

of applied research and technical assistance that conforms to the institutional and economic needs of this sector. Marketing programs to make available key inputs locally and allow small farmers to participate more effectively in product markets are a necessary complement.

Land reform and relatively low cost colonization are a necessary condition if the existing system of income and political power distribution is to be changed. Public policy should also aim at organization of small farmers and wage laborers into effective economic and political forces. Economically, they must be organized to participate more effectively in the market as producers, purchasers, and consumers. Politically, they must be organized to participate as pressure groups in the decision making process.

Public policy concerning intersectoral market relationships in agriculture should concentrate on regulatory measures designed to increase the income share accruing to the small farm sector. Foremost among such measures is adoption of a wage policy for seasonal and permanent workers that follows productivity gains. Since incentives for mechanization and for adoption of capital intensive techniques appear to be influenced by a variety of factors, many of them more important than relative labor cost, it is unlikely that this policy would result in additional unemployment.

In the product market, regulatory measures should be aimed at reducing the margin between prices received by large scale producers and processors in international markets and those paid to small independent producers. These and other measures, such as controls over

weights and measures or price-quality differentials, would increase the relative participation of small producers in income derived from export production. A similar case can be made for regulations concerning the financial interconnections between the two sectors in agriculture. Whatever the particular development strategies or mechanisms used, the final test of agricultural development policy for Central America lies in the integration of the traditional sector into the economic and political life of these nations.