

THE COFFEE INDUSTRY OF GUATEMALA:  
A GEOGRAPHIC ANALYSIS

Thesis for the Degree of Ph. D.  
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MICHAEL J. BIECHLER  
1970

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## ABSTRACT

### THE COFFEE INDUSTRY OF GUATEMALA: A GEOGRAPHIC ANALYSIS

by Michael J. Biechler

Although coffee has constituted the principal export and the mainstay of the Guatemalan economy for almost a century, there exists little geographic information on the coffee industry of that nation. This study alleviates the paucity by (1) analyzing and mapping the distribution of coffee production, commerce, and movement; (2) delimiting regions amenable to research, analysis, and planning; and (3) examining the historical and current role of coffee in the national economy.

The primary sources of information for the study were field investigations and interviews, topographic maps and air photos, and statistical data from the National Coffee Growers Association of Guatemala. Published and unpublished sources were utilized where possible, particularly with regard to historical, institutional, and macro-economic considerations.

Coffee was introduced to Guatemala about the middle of the eighteenth century by Jesuit missionaries. Commercial cultivation did not occur before about 1800, however, and expanded very gradually at first. After 1850, coffee culture spread more quickly from its center of introduction and early growth in the vicinity of Antigua and Guatemala City. Foreigners, particularly German immigrants, came to control much



of the coffee production and trade. This situation culminated in the expropriation of German holdings during World War II. Market disruptions, competition from other nations, nationalization of German holdings, and investor caution dampened the rate of growth in the post-War years. Nevertheless, coffee remained the economic basis of the nation, its importance virtually unabated until the 1960's. Despite the recent decline in the relative importance of coffee, that commodity continues to dominate the economy. Guatemala is the world's third largest exporter of "milds" coffees and the eighth ranking supplier of all coffees.

Guatemalan coffee is grown between elevations of 1,500 and 5,000 feet, in areas with mean annual temperatures of 60° to 70° F. and 70 to 150 inches of precipitation annually. Three major regions and a number of subregions and outlying areas are identified on the basis of temperature, precipitation, soil, altitude, production, acreage, yields, farm size, and percentage of total area in coffee. Climate is the principal factor responsible for regional differences, while altitude is the most important determinant of intra-regional variation. In order of importance, the major producing zones are the West, Central-East, and Cobán Regions.

From the main producing regions coffee is transported by truck or rail to four ports: Puerto Barrios, Matías de Gálvez, San José, and Champerico, listed in order of the volume of coffee consignments handled annually. The major movement of coffee is from the West and Central-Eastern Regions to the Atlantic ports, via Guatemala City and the

transoceanic highway-railway system. The choice of ports is determined primarily on the basis of foreign destination, most Guatemalan coffee going to the east coast of the United States and to Europe. Ten exporting firms ship some 80 percent of all coffee leaving Guatemala, but smaller exporters and some producers also ship to foreign markets.

Major conclusions of this study are as follows:

(1) Coffee is the most recent in a series of export crops which have dominated the economy of Guatemala since before the conquest.

(2) Over the past century coffee culture has contributed much to the development of the nation, while also being responsible to a significant degree for many economic and social ills.

(3) A rather static spatial distribution of coffee production has been determined more by physical than by economic factors, although the latter are increasing in relative importance.

(4) Many aspects of coffee culture, especially climate and altitude, vary considerably through space and accentuate the need for regional as well as national level research and planning.

(5) Coffee growers tend to sell coffee in cherry form in producing zones characterized by relatively good roads, small farms, and seasonal water difficiencies. Even more evident is a trend toward the sale of coffee in pergamino rather than oro. Thus, processing is increasingly becoming a mandate of exporters, rather than producers who have traditionally processed their own coffee. Furthermore, the coffee export business appears to be gradually concentrating in fewer and larger firms.

Michael J. Biechler

(6) Although definitely a part of the private sector, the coffee business is increasingly the focus of government attention. This trend is not likely to abate in the near future.

(7) Despite a relative decline of coffee dominance in the national economy, which is likely to continue, the rank of Guatemala among world coffee exporters is not apt to change significantly within the foreseeable future.

THE COFFEE INDUSTRY OF GUATEMALA: A GEOGRAPHIC ANALYSIS

by

Michael J. Biechler

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## PREFACE

Considering the preponderance of coffee in the economy of many developing nations, it is curious that more effort has not been devoted to research on coffee at the national level. In 1965, for example, nine countries of the world depended upon coffee for at least 50 percent of their total export earnings, a greater number than relied upon any other crop to such an extent.

For the author, an interest in coffee as an agricultural commodity is concomitant with a regional interest in Latin America. There are eighteen Latin American member countries of the International Coffee Agreement, any one of which has a coffee industry worthy of study. A review of the literature, however, suggests that Guatemala is the country in which coffee is most important, as a percent of total exports and in contribution to world supply, relative to the extent of research that has been conducted on a national scale.

The scope of the analysis is broad. No major aspect of the industry is neglected, but certain features are emphasized while others are alluded to only briefly. Hence, the following chapters deal with the entire coffee industry of Guatemala, but primarily with the geographic and economic factors.

My indebtedness and appreciation for aiding this work extend to many people, of whom only a few can be mentioned here. Gratitude is felt particularly to Dr. Clarence W. Minkel, friend, academic advisor

and chairman of the guidance committee, for his unceasing help, advice, and encouragement, and for the many hours spent helping to prepare the manuscript. The guidance and assistance of professors Robert N. Thomas, Ian M. Matley and the late Paul Cross Morrison, all of Michigan State University, are also thankfully acknowledged. Transportation and living expenses during the one-year period of residence in Guatemala were covered by a research grant from the Midwest Universities Consortium for International Activities.

Within Guatemala many coffee growers, exporters, transporters, laborers, and government employees contributed to the study. The support and cooperation of the National Coffee Growers Association (ANACAFE) was essential to all phases of the research, and special thanks are due to a number of its employees. Sr. Eduardo Aguirre Muñoz, head of the Department of Inspectors and an authority on both Guatemala and the coffee industry, provided transportation to many otherwise inaccessible coffee areas, plus useful advice and information. Sr. Frederico Fuentes Jirón, of the same department, contributed invaluable first-hand data and explanations in the field. Ing. J. Francisco Menchú E., head of the Department of Agricultural Affairs, provided office space, use of equipment, information and insight concerning beneficios del café, the services of regional agents from his department, and other assistance personally and from his staff. Sr. Jorge Arturo Garcia, head of the Department of Statistics, also contributed valuable data and advice. Sr. Aldo Cabello Stich, coffee taster and head of the Testing Department, supplied information and opinions based upon a thorough knowledge of the national and international coffee situation.

The Instituto Geográfico Nacional also merits special acknowledgment. My sincere thanks go to Ing. Manuel Angel Castillo Barajas, Director of the IGN, who made available topographic and other maps, use of a computer, and personal consultation. Sr. Luís A. Ferraté Felice contributed a great deal of personal help with maps and air photographs during various stages of the research.

To my parents, Laura and Joe, who over the years have given so much and asked so little, I have a deep sense of gratitude which cannot be adequately expressed. And, finally, I am especially aware and appreciative of the patience, sacrifice, and constant encouragement of my wife, Marilyn, and family throughout the course of the study.

MJB

## TABLE OF CONTENTS

	Page
PREFACE . . . . .	ii
LIST OF TABLES . . . . .	viii
LIST OF FIGURES . . . . .	xi
LIST OF MAPS . . . . .	xii
CHAPTER	
I. INTRODUCTION . . . . .	1
The Current World Coffee Situation . . . . .	2
The Guatemalan Coffee Situation . . . . .	4
Objectives . . . . .	7
Procedures . . . . .	7
Limitations of the Data . . . . .	8
II. THE EVOLUTION OF A CUP OF COFFEE . . . . .	11
Cultivation . . . . .	12
Processing . . . . .	14
Storage and Transportation . . . . .	17
Destination . . . . .	18
Roasting and Blending . . . . .	19
Distribution and Consumption . . . . .	20
III. THE HISTORICAL DEVELOPMENT OF COFFEE IN GUATEMALA . . . . .	21
The Introduction of Coffee . . . . .	23
Coffee Cultivation: 1800-1850 . . . . .	25
Rudiments of a Coffee Industry: 1850-1880 . . . . .	27
Involvement by Extra-Nationals . . . . .	28
Government Sponsorship . . . . .	29
Predominance of Coffee in a Mono-Export Economy . . . . .	30
Areal Patterns of Production . . . . .	31
The Volume of Exports . . . . .	34



# Table of Contents (Continued)

CHAPTER	Page
Era of German Influence: 1880-1944 . . . . .	35
Increased Foreign Involvement . . . . .	35
Government Attitude . . . . .	40
Coffee Production . . . . .	42
The Movement of Coffee . . . . .	42
Export Volume and Foreign Markets . . . . .	47
The Post-War Period: 1945-1960 . . . . .	49
The Fincas Nacionales . . . . .	49
Coffee Production and Significance to the Economy . . . . .	52
Internal Movement and Coffee Exports . . . . .	54
IV. SOCIAL AND INSTITUTIONAL ASPECTS OF THE COFFEE INDUSTRY . . . . .	58
Social Aspects . . . . .	58
Effects upon the Indigenous Population . . . . .	59
Rural Labor . . . . .	61
Agrarian Reform . . . . .	69
Institutional Aspects . . . . .	76
Asociación Nacional del Café (ANACAFE) . . . . .	78
The ANACAFE-FAO Diversification Project . . . . .	84
The Ministry of Agriculture . . . . .	87
The Central American Common Market . . . . .	87
V. THE LOCATION OF COFFEE PRODUCTION . . . . .	89
Physical Factors of Location . . . . .	89
Economic Factors of Location . . . . .	97
The Spatial Distribution of Production . . . . .	100
Finca Size . . . . .	100
Spatial Variation of Finca Size . . . . .	112
Yields . . . . .	116
The Harvest Timetable . . . . .	118
Statistical Analysis . . . . .	118
VI. THE COFFEE REGIONS OF GUATEMALA . . . . .	123
The Western Region . . . . .	126
The Central-Eastern Region . . . . .	139
The Cobán Region . . . . .	145
Subregions within the Major Regions . . . . .	153
Outlying Areas . . . . .	155

# Table of Contents (Continued)

CHAPTER	Page
VII. COFFEE COMMERCE WITHIN GUATEMALA . . . . .	158
From Producer to Exporter or Domestic Consumer . . . . .	158
Problems of Coffee Commerce in Guatemala . . . . .	164
Credit and Finance . . . . .	164
The Export Quota System . . . . .	165
Taxation . . . . .	170
Processing and Storage . . . . .	171
The Central Problem of Internal Coffee Commerce . . . . .	176
VIII. COFFEE TRANSPORT . . . . .	179
Principal Modes of Transportation . . . . .	179
From Finca to Beneficio Seco . . . . .	181
From Beneficio Seco to Seaport . . . . .	188
Historical Development . . . . .	188
Geographic Movement . . . . .	193
IX. COFFEE EXPORT . . . . .	202
The Exporters . . . . .	202
Producer-Exporters . . . . .	203
Coffee Exporting Firms . . . . .	205
INCASA . . . . .	213
ANACAFE . . . . .	214
Ports of Shipment . . . . .	215
Volume of Coffee Exports . . . . .	220
Destinations of Coffee Exports . . . . .	224
X. GUATEMALAN COFFEE IN THE NATIONAL AND WORLD ECONOMIES . . . . .	232
Coffee in the Guatemalan Economy . . . . .	232
Guatemala's Role in the World Coffee Economy . . . . .	240
XI. SUMMARY AND CONCLUSIONS . . . . .	250
Summary . . . . .	250
Conclusions . . . . .	259
APPENDICES . . . . .	264
BIBLIOGRAPHY . . . . .	271

# LIST OF TABLES

TABLE	Page
1. Guatemalan Coffee Exports by Nationality of Exporter, 1936/37 . . . . .	37
2. Percent of Guatemalan Coffee Production Accounted for by Leading Departments . . . . .	43
3. Percent of Guatemalan Coffee Exports, by Volume, Handled by Various Ports for Selected Years, 1893-1939 . . . . .	47
4. Percent of Guatemalan Coffee Production, by Volume, Accounted for by Each Department, 1945-1960 . . . . .	52
5. Position of Guatemala Among Latin American and World Coffee Producers, 1944/45-1960/61 . . . . .	53
6. Coffee as a Percentage of Total Exports, by Value, from Guatemala, 1947-1967 . . . . .	54
7. Percentage of Guatemalan Coffee Exports, by Volume, Handled by Various Ports . . . . .	55
8. Position of Guatemala among Latin American and World Coffee Exporters, 1945-1959 . . . . .	56
9. The United States and Germany as Markets for Guatemalan Coffee, 1950-1960 . . . . .	57
10. Coffee Cooperatives of ANACAFE as of June, 1969 . . . . .	72
11. Coffee Production on Fincas Nacionales: 1963/64-1967/68 Five Year Average . . . . .	76
12. Commercial Coffee Types in Guatemala According to Altitude . . . . .	95
13. Area and Production of Coffee According to Farm Size . . . . .	109
14. The Guatemalan Coffee Harvest Timetable . . . . .	119
15. Simple Correlations among Coffee Variables . . . . .	120



List of Tables (Continued)

TABLE	Page
16. Coffee Area and Production by Region in Guatemala, 1962/63-1966/67 Average . . . . .	126
17. Coffee Area and Production by Department in Guatemala, 1962/63-1966/67 Average . . . . .	127
18. Number of Coffee Farms In Guatemala Producing at Least Fifty Quintales Oro, by Elevation and Major Region . . . .	129
19. Percent of Coffee Types by Department in Guatemala, 1962/63-1966/67 Average . . . . .	130
20. Coffee Varieties by Major Region in Guatemala . . . . .	132
21. Simple Correlations among Coffee Variables: The West . . .	135
22. Simple Correlations among Coffee Variables: The Central-East . . . . .	143
23. Simple Correlations among Coffee Variables: The Cobán Region . . . . .	152
24. Guatemalan Export Coffee Moved by IRCA, 1945-1963 . . . .	190
25. Volume of Coffee Exported by Producer-Exporters, 1963/64-1967/68 . . . . .	204
26. Number of Names and Actual Firms by which Coffee is Exported . . . . .	208
27. Coffee Exports in 1967/68, by Exporting Firms and by Names . . . . .	210
28. Percentage of Total Coffee Exports by the Ten Largest Exporting Firms in Guatemala, 1963/64-1967/68 . .	211
29. Percentage of Guatemalan Coffee Export Volume by Ports of Shipment, 1950-1967/68 . . . . .	218
30. Monthly Coffee Exports from Guatemala, 1963/64-1966/67 . . .	223
31. Destination of Guatemalan Coffee Exports, 1963/64-1967/68 .	226
32. Destination of Guatemalan Coffee Exports, by Type, 1963/64-1966/67 . . . . .	229

# List of Tables (Continued)

TABLE	Page
33. Guatemalan Coffee Exports, by Major Ports and by Country of Destination, 1963/64-1966/67 . . . . .	230
34. Coffee Exports as a Percent of Total Guatemalan Exports, by Value, 1947-1968 . . . . .	234
35. Coffee Production in Guatemala Relative to the Gross National Product and to Total Agricultural Output (at 1958 Market Prices) . . . . .	236
36. Coffee Export Taxes as a Source of Government Revenue in Guatemala . . . . .	239
37. Guatemala as a Coffee Producer by Rank and Percent of World Total, by Volume, 1929/30-1968/69 . . . . .	241
38. Guatemala as a Coffee Exporter by Rank and Percent of World Total, by Volume, 1929-1968 . . . . .	245
39. Coffee Exports from "Other Milds" Countries . . . . .	246

## LIST OF FIGURES

FIGURE	Page
1. Wet and Dry Methods of Processing Coffee . . . . .	15
2. Frequency Distribution of Coffee Farm Sizes in Guatemala .	111
3. Commercial Movement of Coffee in Guatemala . . . . .	159
4. Percent of Total Coffee Exports from Guatemalan Ports, 1950-1967/68 . . . . .	219
5. Guatemalan Coffee Production and Exports . . . . .	221
6. Monthly Volume of Coffee Exports, by Port of Shipment, as a Percent of the Annual Total for East Port . . . . .	225

## LIST OF MAPS

MAP	Page
1. Guatemala: Location . . . . .	5
2. Guatemala: Political . . . . .	26
3. Southern Guatemala: Railroads: Historical Development . .	45
4. Southern Guatemala: Coffee Cooperatives . . . . .	74
5. Southern Guatemala: Coffee-Producing National Fincas . . .	77
6. Southern Guatemala: Regional Agencies of ANACAFE . . . . .	82
7. Southern Guatemala: Climate . . . . .	90
8. Southern Guatemala: Parent Materials of Coffee Soils . . .	92
9. Southern Guatemala: Altitude of Coffee Fincas . . . . .	94
10. Southern Guatemala: Coffee Acreage . . . . .	101
11. Southern Guatemala: Minor Civil Divisions . . . . .	102
12. Southern Guatemala: Coffee Production . . . . .	107
13. Southern Guatemala: Coffee Fincas . . . . .	113
14. Southern Guatemala: Large Coffee Fincas . . . . .	114
15. Southern Guatemala: Small Coffee Fincas . . . . .	115
16. Southern Guatemala: Coffee Yields . . . . .	117
17. Southern Guatemala: Coffee Regions and Outlying Areas . . .	124
18. Southern Guatemala: Beneficios Secos . . . . .	182
19. Southern Guatemala: The Movement of Green Coffee by Rail to Puerto Barrios . . . . .	195



Lists of Maps (Continued)

MAP	Page
20. Southern Guatemala: The Movement of Green Coffee by Rail to Champerico . . . . .	196
21. Southern Guatemala: The Movement of Green Coffee by Rail to San José . . . . .	197



## CHAPTER I

### INTRODUCTION

Coffee is a unique commodity in the world economy. Although it is surpassed in total value of production by a number of other crops, it is the most traded agricultural commodity in the world and is second only to petroleum among all commodities entering international trade. Coffee is easily the single most important agricultural export of both Latin America and Africa.

Virtually all coffee is produced in the tropics, but most of it is consumed in mid-latitude countries. The average world production for the three-year period 1965/66-1967/68 was 70,216,000 bags of sixty kilograms each. The total exportable production for the same period was 54,240,000 bags.<sup>1</sup> Thus an average of 77 percent of all coffee produced entered world trade in these years. The United States and Europe account for approximately 90 percent of total imports.

Since its introduction to the Western Hemisphere some time prior to 1725, coffee has increasingly participated in molding the political, social, and economic structure of a number of Latin American nations. The commodity continues to dominate the economies of these countries to

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<sup>1</sup>Exportable production is the total volume harvested, minus domestic consumption. Foreign Agriculture Circular: Coffee, Washington, D. C.: USDA-FAS (January, 1969), 2-3.

varying degrees, affording large coffee interests a powerful political voice. In proportion to total export value (1963-67 five-year average), coffee accounts for 67 percent in Colombia, 50 percent in El Salvador, 48 percent in Brazil, 46 percent in Guatemala and Haiti, and 42 percent in Costa Rica.<sup>2</sup> On the same basis, the coffee bean comprises nearly 20 percent of all Latin American exports.

The social ramifications of the coffee trade are clearly significant, if not well defined. More than 11 million Latin Americans earn a livelihood from the cultivation, processing, transportation, and export of coffee.<sup>3</sup> The overall importance of coffee to these 11 millions and the countries in which they live is well illustrated by Dr. Carlos Lleras Restrepo, ex-president of Colombia:

We [Latin Americans] have increased our volume of coffee exports by 12 percent since 1954 but our foreign exchange earnings from coffee have decreased by 42 percent. A drop of one cent per pound in the price of coffee represents a loss of \$8.7 million to Colombia, \$8 million to Central America, and \$24 million to Brazil. This is the brutal fact. When people in this country [United States] wonder about the attitudes and sentiments of Latin America, it is necessary to recall these dramatic figures.<sup>4</sup>

#### The Current World Coffee Situation

The world coffee economy is traditionally described as a perpetual cycle of boom and collapse. Prices rise in periods of short supply.

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<sup>2</sup>Ibid., 8.

<sup>3</sup>El Imparcial (Guatemala), June 25, 1968, 1.

<sup>4</sup>Carlos Lleras Restrepo, A speech to the National Press Club partially quoted in Alliance for Progress Weekly Newsletter, Vol. VII, No. 25 (June 23, 1969), 2.

Producers commonly over-respond to the higher prices, which results in surpluses. In turn, the disequilibrium of excess supply triggers price depression.

Expanding production, declining stocks, increased demand, and high prices characterized the period 1950-55. Prices climbed to an all-time peak in 1954. World supplies have exceeded demand since 1955 and prices have generally declined, except for brief upward trends in 1964 and 1965.

The 1965/66 world exportable production of coffee was large, over 66 million bags of sixty kilograms, while subsequent years have yielded around 50 million bags or less. A relatively small crop of approximately 45 million bags (exportable production) is expected for 1968/69.<sup>5</sup> However, stocks in producing countries equal to world consumption for one year, plus a large inventory in the United States, will prevent the small crop from effecting a general upswing in prices.

The International Coffee Agreement, renewed in 1968, will remain operative until 1973. It will continue to stabilize prices by fostering a demand-supply equilibrium through export quotas, promotion of consumption, and programs of diversification. Although coffee acreage has been reduced in many countries as a result of diversification schemes, yields have increased through crop intensification, improved fertilizers, insecticides, and other technological advances. Thus, supply persists in excess of demand, and stocks mount except for occasional reductions due to small crops. This situation has, however,

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<sup>5</sup>Foreign Agriculture Circular: Coffee, (January, 1969), 2-3.

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been at least temporarily altered as a result of severe frosts in southern Brazil during July, 1969.

World coffee consumption, conversely, cannot be expected to expand rapidly, due to (1) a relatively low income-elasticity of demand, (2) a growing competition from substitute beverages, and (3) a downward trend of per capita consumption within the United States. Significantly, the negative trend in consumption is most pronounced among younger people.<sup>6</sup>

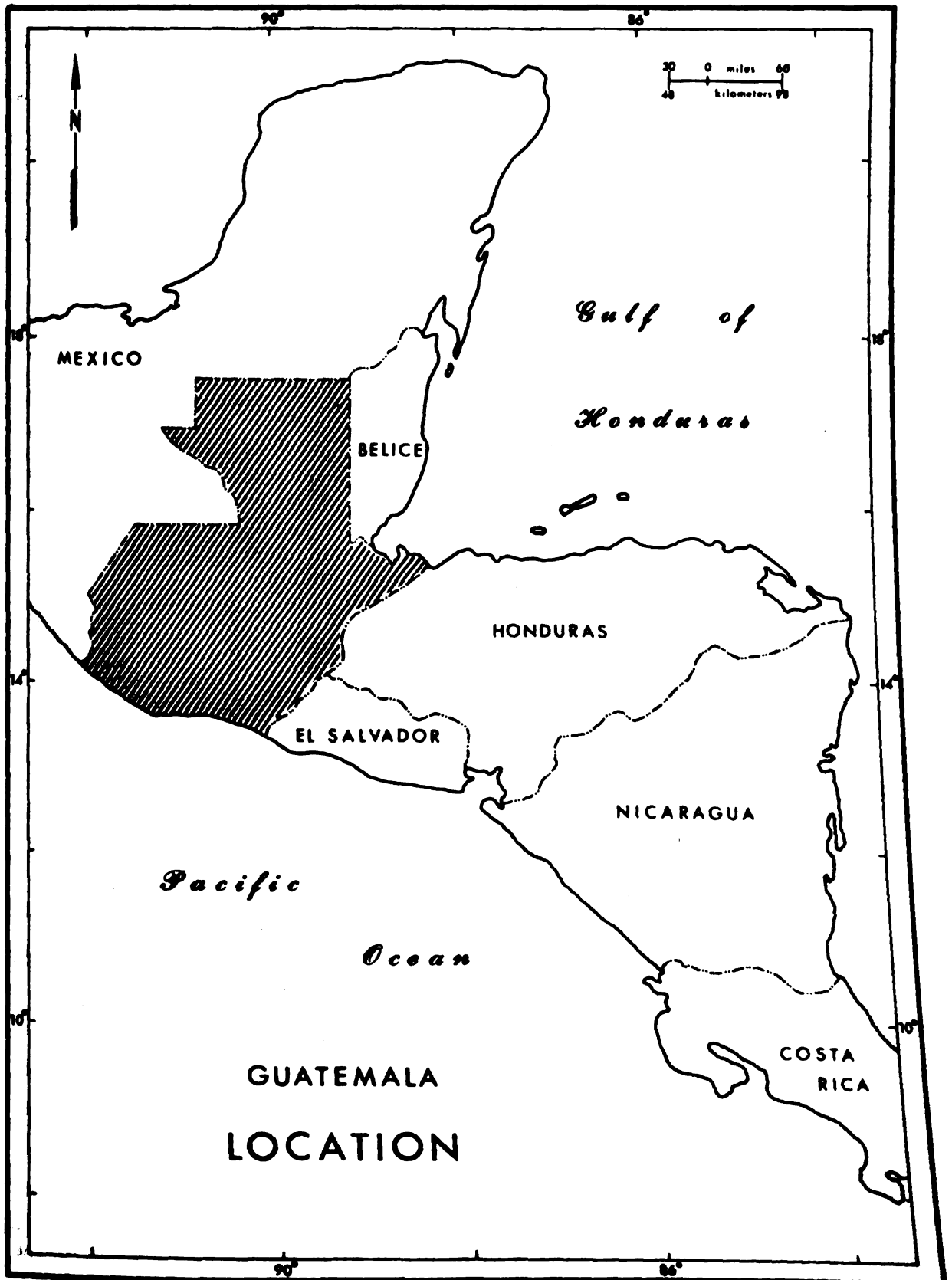
Another characteristic of the international coffee situation is the relative growth in Africa's share of the market. The proportion of total world production derived from the Western Hemisphere has consequently declined from 90 percent in the late 1920's, to 82 percent in 1959, and 66 percent in 1968. The recent shift in production is largely attributable to an increased demand for soluble coffees, for which African robustas are found suitable. However, the beginnings of the shift resulted from valorization schemes in Brazil and an economic depression, both in the 1930's, and were later abetted by European colonial ties with Africa. Lower production costs for robustas and, in some cases other African coffees, have also been a factor.

#### The Guatemalan Coffee Situation

Coffee has been the major export of Guatemala for nearly a century and it has, at times, comprised over 80 percent of the total value of exports. A paucity of basic geographic information on the leading industry exists, despite the obvious utility of such knowledge for

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<sup>6</sup>Coffee Drinking in the United States, (New York: Pan American Union, 1968), 7.



Map 1



national and regional planning. A considerable amount of coffee research actually has been conducted in Guatemala, but with a primary focus on diseases, pests, and techniques of cultivation.

The impact of international-level coffee activities on the Guatemalan people is profound and immediate, yet complex and ill-defined. It is estimated that over 225,000 workers and their families, or a total of one million Guatemalans are directly affected by changes in world market conditions for coffee.<sup>7</sup> This is one-fifth of the country's total population. The number of people indirectly affected, such as producers of the corn which is sold to coffee laborers, cannot be estimated with any degree of accuracy.

In addition to providing employment to a major segment of the population, the coffee industry accounted for an average of 46 percent of Guatemala's total exports, by value, during the five years 1963-67. Only a few years earlier coffee occupied an even more dominant position. In the five-year period 1960-64, for example, it registered 55 percent of all exports.

Unfortunately, the profits from coffee have neither resolved the problem of national economic development, nor have they significantly improved the standard of living for the laborers. Coffee should play a role in economic development commensurate with its position in the economy. Yet, it can either contribute to, or interfere with, such development. Enlightened legislation and prudent planning require

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<sup>7</sup>El problema nacional del café, (Guatemala: Asociación Nacional del Café, 1967), ii. This is a very conservative estimate and apparently does not take into account the full extent of seasonal migratory labor.

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comprehensive and accurate data on this segment of the economy. Good relations, astute diplomacy, and United States-Guatemalan cooperation likewise demand a basic understanding of exigencies in the producing country.

### Objectives

The goals of this study are fivefold: (1) to accurately analyze and map the distribution of coffee production, commerce, and flow; (2) to identify regions amenable to individual and comparative analysis; (3) to evaluate the role of coffee in Guatemala's past and present, as well as prospects for the future; (4) to ascertain problems worthy of future research; and (5) to provide data useful for national and regional planning.

### Procedures

An extensive bibliography on coffee and coffee producing countries was developed during the two years prior to the initiation of field research. Correspondence was also maintained and personal interviews held with knowledgeable people in the United States. A preliminary trip to Guatemala was made in March, 1967, to conduct a field test of anticipated research methods, to discover what information was available in Guatemala, and to solicit the cooperation and assistance of appropriate individuals and agencies. As a part of the Ph. D. program in Geography at Michigan State University, the author also conducted a one-week field study in Mexico in January, 1968, on the coffee industry of that country. The experience gained was invaluable in relation to subsequent work in Guatemala.



Research in Guatemala was begun in June, 1968. Interviews were held with ANACAFE personnel and businessmen, and contacts previously made were reestablished. A search for statistical and general data on coffee was also conducted. A substantial volume of information, much of it dated, was obtained from publications of the National Coffee Growers Association, the Guatemalan Government, the United States Department of Agriculture, the University of San Carlos (Guatemala), and the Pan American Union.

Field investigation included travel to all major coffee zones of the country, and interviews were held in Guatemala City with each of the exporters who handle more than one percent of the nation's coffee exports. All large beneficios secos, and many smaller ones, were visited, and in each case the manager or owner was interviewed. An attempt was made to obtain information on each beneficio seco in the country. Since time did not permit a personal visit to each, the assistance of regional agents of ANACAFE was utilized in conducting some of the interviews. Both large and small producers from the various coffee areas were sought out for information and opinions.

#### Limitations of the Data

Developing nations typically lack detailed and organized statistical data, and Guatemala is not an exception. The National Coffee Growers Association, however, has collected and maintained a wealth of coffee statistics, particularly since 1960. Unfortunately, inadequate methods of collection and accounting render much of the data unreliable. Each

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registered coffee grower is required to file an annual harvest report with ANACAFE. These reports are IBM tabulated and form the basis for almost all coffee statistics in Guatemala.

In many cases, growers do not have the information requested in the harvest report and are indifferent toward cooperation in general. In addition, there are other factors leading to inaccuracies in the data. The reports serve as the basis for quotas issued to growers, and over-reporting has been used to support arguments for quota increases. Some producers fear that the reports may be used for tax purposes or for implementation of the idle lands law. Coffee quality and prices, and consequently the value of the farm itself, vary with altitude; the kind, number, and age of trees; and other factors normally included in the harvest report. Although the information is held in confidence by the Association, fear of its disclosure is not entirely quelled.

There is little incentive for producers to render complete and reliable data. No penalties exist, de facto, for submitting erroneous information. Moreover, no good method has been developed for checking the accuracy of the data reported. ANACAFE's Department of Inspectors investigates claims for higher quotas, but progress is slow and production units too numerous and dispersed to be inspected regularly, given the available resources.

Another possibility for error exists in the absence of precisely delimited and accurately mapped municipio boundaries. Instances of farmers reporting data in a municipio adjacent to that in which they are actually located continue to occur. The boundaries are frequently

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without official status, owing to disputes, yet an accurate municipio map is essential to the collection of data at that level.

A final category of likely errors exists as a result of conflicts of interest. Some of the directors of ANACAFE are also producers of coffee, as to a lesser extent are government officials. Such persons obviously have reason to withhold pressure which should be brought to bear on exporters, for example, because the exporters purchase their coffee. Thus, these growers may not insist on the close examination of data supplied by exporters. Likewise, as producers, they may hesitate to initiate audits of their own businesses.

This statement on the limitations of data is not to suggest that the statistical information reported is hopelessly false, nor that devious practices occur in a majority of cases. It is, however, evident that caution must be exercised in the use of such data, and that the statistics are better employed in a grouped or generalized form to minimize the chance and seriousness of error.

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## CHAPTER II

### THE EVOLUTION OF A CUP OF COFFEE

Coffee ranks among the most complicated of agricultural products in terms of preparation for ultimate use. Moreover, cultivation and processing techniques vary widely from country to country. Only a brief outline of the various stages through which coffee passes, from nursery to beverage, is presented here. A comprehensive examination of the divers cultivation and processing methods pursued in the different coffee producing areas of the world would warrant a multi-volume study.

An understanding of the various stages of coffee production is facilitated by a consideration of three facts. First, the on-farm segment of the industry is labor intensive. Labor may account for more than 50 percent of a producer's operating costs. Thus, labor inputs play an important part in the selection from among the various alternative cultivation and harvesting methods. Second, it is impossible to improve the quality of the bean after it has been harvested. There is no "curing" process. Consequently, the care and techniques employed prior to processing determine the upper limits of crop quality. Finally, quality can be severely impaired by improper processing or storage. In sum, all of the stages are critical to a high quality product, which ultimately determines the price received.

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### Cultivation

The coffee tree, more precisely a shrub, is adaptable to a relatively wide range of physical conditions. It thrives best, however, in areas of volcanic soil and a climate characterized by an extended warm, wet season followed by a short, cool dry period. In Guatemala, these optimum conditions occur at elevations between 1,500 and 5,000 feet, where most of the commercial coffee is grown. The maximum limits are from about 800 to slightly over 6,000 feet.

Field preparation for the planting of coffee is usually minimal. If forested or previously tree-cropped, the land must first be cleared. In some cases, trees may be left for shade, while in others they are planted to assure adequate cover for the young coffee trees. Occasionally, coffee will be sun-grown, but most Guatemalan coffee is shaded. Grass cover and, depending upon the degree of slope, some undergrowth may be left to counter erosion.

The merits of shade are widely contested, but it appears that shaded coffee is (1) more tolerant of careless management, (2) less subject to erosion and helps to maintain organic matter in the soil, and (3) adaptable to a wider range of climatic conditions. On the other hand, it does not respond as well to fertilizers, requires pruning of the canopy to control shade density, and offers little advantage in terms of quality. While greater yields are realized from sun-grown coffee, shaded trees have a longer productive-life expectancy.

The seeds, or beans, of select trees may be planted directly in the field, as is the custom in Brazil. More commonly, however, small

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carefully prepared nursery beds are thickly broadcast with the coffee seeds. Following germination, at about the two-leaf stage, the hardiest seedlings are placed in larger seed beds or individual containers. After a height of from one to two feet is attained, they are again transplanted or placed directly in the field.

Seedlings are field planted in rows from five to twelve feet apart. Close spacing reduces yields per tree, but labor costs are likewise reduced because the need for weeding and pruning is diminished. Without pruning, the trees grow so dense as to appear unmanaged. Pruning generally takes place during the dry season after the harvest, when the opportunity cost of permanent farm labor is relatively low. The application of artificial fertilizers is not common, but coffee pulp, mulch, and other natural fertilizers are used extensively. From time to time, and in some regions more than others, a significant increase in operating costs may be incurred in the combat of pests and diseases. Much research has been directed to the maintenance of healthy coffee trees by the National Coffee Growers Association and the Ministry of Agriculture.

The coffee tree develops into a mature producer in five to eight years, the time requirement being greatest at the higher altitudes. It may remain in production from fifteen to more than fifty years, depending upon the variety of tree and the environmental conditions. Peak production capacity is usually reached in twelve to fifteen years. The coffee fruit is shaped like a cherry and changes color from green to a dark red as it ripens, except for the yellow bourbon variety which becomes yellow.

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The Guatemalan coffee harvest commences in late July or during August in the lower zones and terminates in March or April at higher elevations. The main harvest, however, is concentrated from October through January. All harvesting is accomplished manually by permanent farm employees and seasonal or migratory labor. Men, women, and children take part, with payment usually on a task basis. Because the coffee cherries, or berries, do not ripen simultaneously even on the same branch, and because in Guatemala only the ripe fruit is picked, several passes must be made over the same area. The number of pickings is held to a minimum to reduce labor costs.

#### Processing

The processing of coffee involves a markedly complicated series of techniques, due to the composition of the fruit and the ease in which quality may be impaired. The coffee cherry usually contains two small greenish- or bluish-grey beans. These oval-shaped beans lie with their flat sides adjacent to each other, similar to the two halves of a peanut. They are each covered by a thin membrane called the "silver-skin," over which is found a tough hull or cover known as the "parchment." The beans are surrounded by a thick, sticky substance, "mucilage," and by the pulp and outer skin of the cherry (Figure 1). In order of processing, the outer skin and pulp, the mucilage, parchment, and silverskin are removed.

Either of two processing methods may be used: dry or wet. The dry method, common to Brazil, is used by some small producers in Guatemala but is unimportant commercially. In this method the cherry



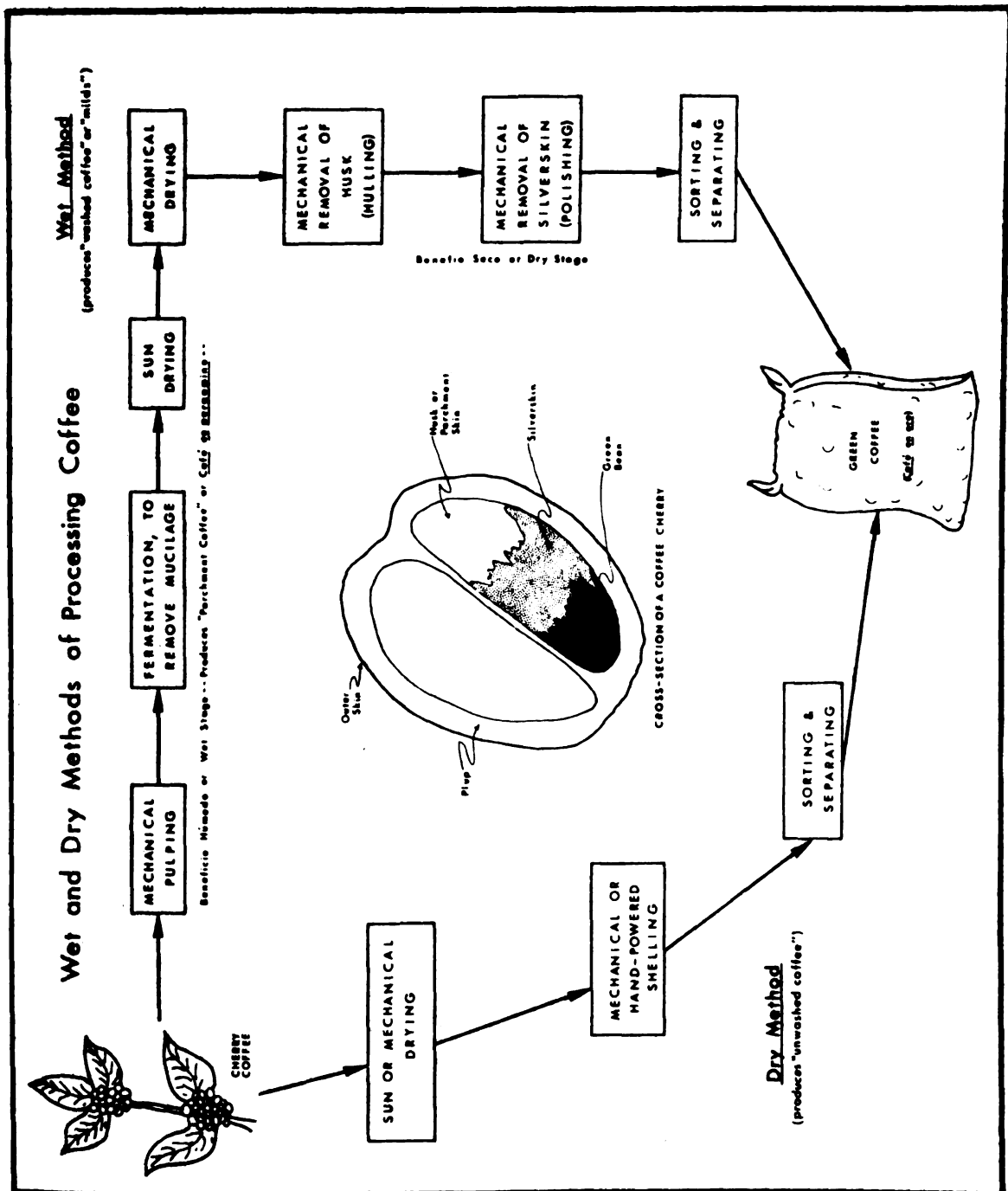


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is sun dried and the beans liberated either mechanically or by a mortar and pestle system (a small log in a barrel or similar container) employing manual power. The result is a decidedly inferior product referred to as "unwashed coffee." The wet method, by comparison, is more complicated but results in a superior quality coffee known as "washed coffee" or "milds." In very general terms, Brazil produces unwashed coffees, while other Western Hemisphere countries supply chiefly milds.

The wet method is divided into two stages, also known as wet and dry. The machinery or mill used in the wet stage is called a beneficio húmedo, or wet mill, while that employed in the dry stage is the beneficio seco, or dry mill. In the wet stage the pulp and skin are removed mechanically with pulpers, which may be simple hand-driven contrivances used by small producers or large powered machines in modern mills. Depulped coffee is placed in tanks for from twelve to twenty-four hours to remove the mucilage by fermentation. The beans are then washed and spread out to dry in the sun. Small producers who process their own coffee often place it on low table-like platforms for drying, while larger operators use extensive concrete floors, or patios. Mechanical dryers usually complete the drying. In times of unfavorable weather or bumper crops, the sun-drying stage may be foregone, despite the fact that it is believed to yield a higher quality product. In any event, the depulped coffee, with the mucilage removed, is known as parchment coffee or café en pergamino.

The remainder of the wet method of processing, the dry stage, is completed in the beneficio seco and consists of eliminating the

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parchment by hulling and the silverskin by polishing. Both removals are accomplished mechanically. As a continuation of the dry stage, the beans are mechanically separated and sorted by size, then manually or electronically screened for diseased or damaged beans. The coffee beans, having passed through the beneficio seco, are ready for export as "green coffee," or café en oro.

#### Storage and Transportation

Cherry coffee cannot be stored. In fact, to avoid fermentation and resultant deterioration of the bean, the fruit is processed as soon as possible after picking, almost always within twenty-four hours. Nor does green coffee preserve well for longer periods. Therefore, the beans are not normally processed into green coffee until two or three weeks before actual exportation. Coffee is best stored for long periods, several months or more, in parchment form.

Optimum storage conditions are found in zones where cool temperatures and low humidity prevail. Ideally, temperatures and humidity should be controlled. However, only since the International Coffee Organization (ICO) quota system necessitated the storage of coffee for longer periods has an interest developed in improved storage in Guatemala. Some large operators are now considering the installation of dehumidifiers in warehouses, which would lengthen the storage period to two years or more without serious loss of quality. Always, however, molds develop and ultimately limit the time that coffee can be stored even under the most favorable conditions.

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Human, animal, or mechanical means are employed to transport coffee from the fields to farm headquarters, depending largely upon terrain, road development, and scale of operations. If the farm includes a beneficio, it may be processed there. Not infrequently a large farmer will process the coffee of smaller neighbors. Otherwise, the coffee is sold in cherry and trucked to a beneficio designated by the buyer. Assuming the coffee is processed into parchment on the farm, it may be sold in this form or further processed into café en oro. Parchment, like café en oro, moves chiefly by truck or rail, but may be transported by mule, for example, in remote areas. Café en oro is delivered to the ship F.O.B., the foreign buyer designating the port of shipment, time of delivery, and shipping line.

#### Destination

The United States is easily the largest importer of coffee in the world, taking approximately 50 percent of all coffee entering international trade. In turn, coffee constitutes the largest single agricultural import of the United States, accounting for 22 percent of such imports in 1968. A prodigious variety of coffees is purchased from some forty different countries, including Guatemala. Each kind of coffee is classified by source or area of production, by grade, and by quality. The principal coffee receiving ports, by volume, are New York, New Orleans, Houston, and San Francisco. Most coffee entering the United States is purchased by importer-jobbers or large roasters and their agents. The coffee usually arrives in bags of sixty kilograms (132 lbs.), and most U. S. Government or United Nations statistics are

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either converted to this measure or expressed in tonages. The Central American countries, however, export in bags of seventy kilograms (154 lbs.). Unless specified to the contrary, the term bags as used in the present study refer to units of sixty kilograms.

### Roasting and Blending

Roasting to produce regular coffee is done in large revolving cylinders, and it is at this stage that coffee first exhibits its familiar brown color, flavor, and aroma. Both a weight loss and a volume-gain occur during roasting. Immediate vacuum packing of roasted beans, whole or ground, is essential to prevent the loss of flavor and aroma. Coffee beans of several countries and/or regions are blended to create a brand. Above all else, a brand must maintain a consistent flavor and aroma. Blending is essential not only to acquire the desired qualities but also to compensate for variations in coffee supplies. No two crops, even on the same farm, are identical in flavor and aroma.

In the preparation of soluble coffees, the beans are first roasted, blended, and ground as in the case of regular coffees. A beverage is then brewed and dehydrated, leaving the tiny crystals common to instant coffees. Soluble coffee may be produced from imported green coffee or imported directly in soluble form. In 1967, France displaced Guatemala as the second largest supplier of imported instant coffees to the United States. Brazil remains the leading supplier.

Freeze-drying, the latest improvement in soluble coffee, yields a higher quality product. After years of experimentation, it has achieved nation-wide distribution.

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### Distribution and Consumption

Packaged coffee, usually ground but sometimes whole, is distributed to restaurants, supermarkets, stores, and other retail outlets throughout the United States. In the distribution, or wholesale-retail process, coffee may change hands several times. Or, a large food chain may function as importer, roaster, wholesaler, and retailer combined. Coffee for household use tends increasingly to be purchased in large-size vacuum-packed cans, while eating places buy coffee in a variety of forms. A very small percentage of restaurants still grind their own coffee.

More than 75 percent of all coffee consumed in the United States is served in the home. Most of the balance is used at "place of work" and in eating establishments. Soluble coffee has increased in popularity to the extent that more than 20 percent of all coffee now consumed in the United States is instant coffee. Currently, freeze-dried coffee is making an impact on the market. The new product could expand the soluble share of the market at the expense of regular coffee, or it may simply absorb a share of the other-solubles market. Less likely, it may prompt a general increase in coffee consumption. In any event, the development of freeze-dried coffee indicates that at the consumption end of the business, as at the production level, experimentation and research continue. Another fact worth noting is that coffee processing at all stages is becoming increasingly complicated by new techniques.

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## CHAPTER III

### THE HISTORICAL DEVELOPMENT OF COFFEE IN GUATEMALA

Over-reliance upon a single export crop did not begin in Guatemala with coffee. In fact, the origins of many social and economic ills associated with coffee must be sought in earlier periods. Some problems have persisted throughout both the early history and during the past eighty years, when the crop has tended to dominate the Guatemalan economy.

One of the leading pre-conquest exports from Guatemala was cacao. Its production in early colonial times was taken over by the Spaniards, in some cases, or simply collected as tribute by the encomenderos.<sup>1</sup> The pre-conquest and early colonial market was present-day Mexico, and in particular Mexico City. Only later did the European market emerge. The demise of cacao as a major export crop was spurred by diseases of the tree, export taxes, colonial trade regulations, and competition from northwestern South America during the early 1600's.

Indigo became preeminent among exports and served as the mainstay of the economy in the later colonial period. Referring to indigo at that time, and not to coffee in the present century, Jones lamented:

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<sup>1</sup>Holders of lands given in trust by the Spanish Crown. Included was the right of tribute from the indigenous population.

"Unhappy the land which depended on a single crop in its foreign exchanges, and that a luxury article."<sup>2</sup> Indigo exports decreased in the closing years of the eighteenth century, due largely to foreign competition and wartime interference with shipping.

Another colonial dyestuff, cochineal, replaced indigo as Guatemala's principal export. After experiencing a period of decline near the end of the eighteenth century, the cochineal industry revived and rose to account for more than 80 percent of all exports in the early 1850's.<sup>3</sup> Like cacao and indigo, cochineal ceased to dominate the economy after a period of ephemeral supremacy. The discovery of chemical dyes in the 1850's, combined with insect plagues, resulted in a frantic search for an export crop to replace cochineal.

The hunt for a new export commodity led ultimately to the development of the coffee industry. But in the meantime cotton production was stimulated by British and Guatemalan promotion, government subsidies, and expanding European markets owing to the wane of cotton exports from the United States during the Civil War. Guatemalan cotton exports reached a peak in 1865, when they comprised 19 percent of the nation's total exports by value.<sup>4</sup> Insects and post-war competition from the United States effected the quietus of cotton as a major export, but

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<sup>2</sup>Chester Lloyd Jones, Guatemala, Past and Present (Minneapolis: The University of Minnesota Press, 1940), 200.

<sup>3</sup>Ralph Lee Woodward Jr., "Guatemalan Cotton and the American Civil War," Inter-American Economic Affairs, Vol. 18, No. 3 (Winter, 1964), 87.

<sup>4</sup>Ibid., 93.



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"the cotton market created by the American Civil War offered a valuable transition crop for Guatemalan farmers during the years when cochineal declined and coffee production expanded."<sup>5</sup>

### The Introduction of Coffee

The exact date and manner of the introduction of coffee culture to Guatemala are unknown. There is, however, no exiguity of opinion and controversy on the subject. A few writers have conjectured, contrary to generally accepted evidence, that coffee is indigenous to Guatemala and southern Mexico. Likewise, a local dispute evolved from an error in the Spanish translation of a book by Thomas Gage, in which coffee was supposedly listed among the major crops of the Alta Verapaz zone in 1672.<sup>6</sup> The first recorded and reliable incidence of coffee in Guatemala is a reference to its consumption at a banquet celebrating the completion of a cathedral in Antigua Guatemala, in 1743.<sup>7</sup> It is likely, however, that the beans were imported.

Jesuit priests are usually credited with the introduction of coffee cultivation to Guatemala, as well as to several other countries. It is known that they at least aided the propagation of coffee, and,

<sup>5</sup>Ibid., 94.

<sup>6</sup>See, e. g., J. A. Alvarado, "Desde cuándo se cultiva café en Guatemala?", Revista Agrícola, Vol. XIII, No. 6 (August, 1935), 371-75.

<sup>7</sup>Luces del cielo de la Iglesia (Mexico: Imprenta Real de Superior Gobierno, 1747), 35, cited by Manuel Rubio Sánchez in "Breve historia del desarrollo del cultivo del café en Guatemala," Anales de la Sociedad de Geografía e Historia, Vol. XXVII, Nos. 1-4 (March, 1953-December, 1954), 188.

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since they were expelled in 1767, it is certain that the bean was grown locally before that date. Father José Navarro, a Jesuit, wrote that according to tradition the Guatemalan plant was transported from Yemen, implying a direct journey. However, inasmuch as Jesuit monasteries in Jamaica, Cuba, and Belice cultivated coffee by this time, it is more reasonable to assume that the original Guatemalan tree was the descendant of a plant from one of these colonies. Some supporters of a later date of introduction maintain that coffee was first brought to the country via El Salvador and Puerto Rico.

Locations mentioned by reliable sources as being among the earliest sites of coffee cultivation within Guatemala include the Jesuit lands and gardens near Antigua Guatemala; the holdings of Jesuits and several individual proprietors in the vicinity of Ciudad Vieja; the hacienda El Soyate in the Department of Jutiapa; the Hacienda de Parga in Villa Canales; in Cuajiniquilapa, near Cuilapa, Santa Rosa; and the convent patios in Santiago de los Caballeros, near Antigua Guatemala. In all probability, the Antigua area was the first of these to witness the planting of a coffee tree. Although any causal relationship seems doubtful, it is interesting to note that the Republic's choicest coffee beans still come from near Antigua.

Thus, it appears relatively certain that coffee was introduced to Guatemala about the middle of the eighteenth century, by Jesuits who cultivated it in or near Antigua Guatemala. The bean was not cultivated on a commercial scale before 1800. Early plants served as items of curiosity, or for ornamentation, and were probably restricted to Jesuit gardens and the haciendas of a few interested individuals.

Coffee Cultivation: 1800-1850

The earthquake that destroyed Antigua Guatemala in 1773 resulted in the movement of the capital to Guatemala City, and with it the cultivation of coffee. Around 1800 an attempt was made to grow coffee on an expanded scale near the new capital. This venture may have been the first "systematic cultivation of coffee in the country."<sup>8</sup> Some writers, however, feel that the year 1835 more accurately marks the beginning of commercial coffee production in Guatemala.<sup>9</sup> In this year a decree issued to promote coffee cultivation authorized an award of 200 pesos to the first farmer to harvest 100 quintales of coffee, and 100 pesos each to the second, third, and fourth to do so.<sup>10</sup> New plantings of cacao, sugar, and coffee, were later exonerated from the alcabala (a tax on commercial transactions) and export duties for a period of ten years.<sup>11</sup> These and other promotional efforts apparently had the desired effect, since new coffee farms appeared in various sections of the country. Most of the coffee was still cultivated in the central zone, however.

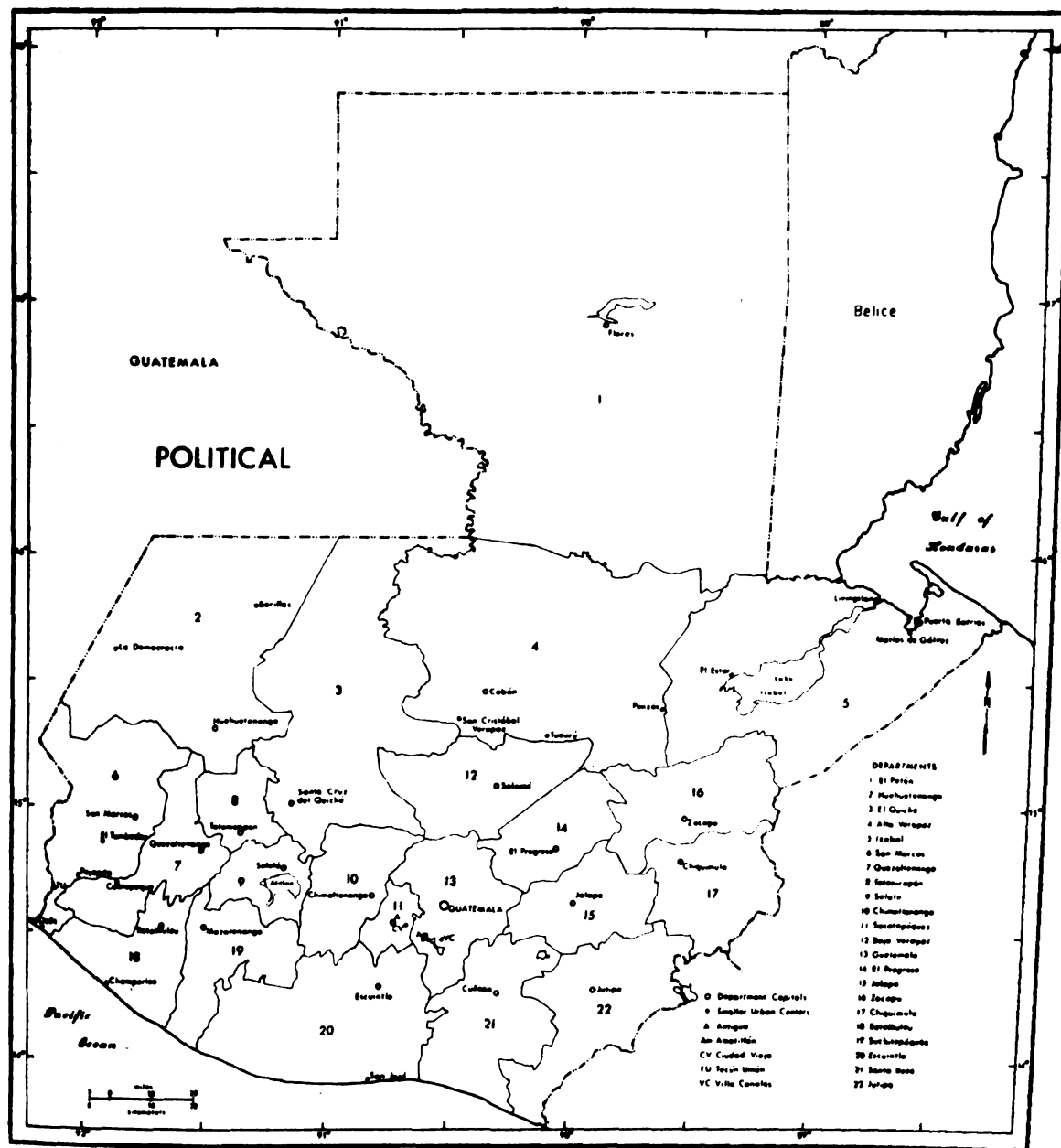
By 1845, coffee was receiving a great deal of attention. Farmers were urged to consider the situation in Costa Rica, where the industry

<sup>8</sup> Manuel Rubio Sánchez, "Breve historia del desarrollo del cultivo del café en Guatemala," Anales de la Sociedad de Geografía e Historia, Vol. XXVII, Nos. 1-4 (March, 1953-December 1954), 190.

<sup>9</sup> See, e. g., Juan Antonio Alvarado, Tratado de caficultura practica (Guatemala: Tipografía Nacional, 1936), 539.

<sup>10</sup> Manuel Pineda de Mont, Recopilación de leyes de Guatemala, Tomo I (Guatemala: Imprenta La Paz en el Palacio, 1869), 745, cited in Rubio Sánchez, 193. One quintal equals approximately one hundredweight.

<sup>11</sup> Al. 23, Legado 1542, Folio 215, Archivo General del Gobierno, cited in Rubio Sánchez, 191.



**Map 2**

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had developed more rapidly and was already providing a major share of that nation's exports. Reports and booklets designed to encourage improved coffee cultivation techniques were made available. Prizes, tax exemptions, and subsidies for coffee continued to be offered. The Sociedad Económica de Amigos del Estado, which did much to promote coffee culture, imported a processing machine from Costa Rica in 1845. At about the same time, the government created a committee with the sole function of encouraging coffee production. Thus, while the export of indigo waned, and cochineal was continually threatened by insects and foreign competition, Guatemalan authorities issued urgent decrees, resolutions, and regulations in the quest of substitute export crops.

Also characteristic of the period was the development of a domestic market. Local coffee consumption expanded to include people of modest income, whereas only the wealthier citizens had initially enjoyed the beverage. Most likely, the growth in popularity was both a cause and a result of extended cultivation. Since part of the demand for coffee was met, at first, by imports from Cuba, its cost may have proved prohibitive to lower income groups. On the other hand, the small local market could not stimulate production much beyond the earliest attempts at commercial plantings. It appears reasonably certain that, at least until 1850, local demand exceeded domestic supply.

#### Rudiments of a Coffee Industry: 1850-1880

Despite impressive gains in the volume of exports, certain factors militated against the rapid development of the coffee industry. Even in



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the early 1850's cochineal was an attractive agricultural pursuit. Harvest volumes of the dyestuff plunged in 1850 and 1852, but a strong foreign market persisted, inhibiting producers' switch to coffee. Moreover, a period of several years precedes the first coffee harvest after planting, and long-term credit was virtually nonexistent. Inadequate transportation facilities and limited knowledge of cultivation, processing, and marketing techniques also impeded development. Prior to 1880, there were no railroads, no ports where ships could dock, and only the rudiments of a road system. Coffee was transported by mule and by wagon to coastal sites, loaded on rafts or barges, and lightered to ships anchored in deep water. The strong surf of Guatemala's Pacific coast claimed many a bag of coffee in the loading process.

The emerging coffee industry was characterized by features conveniently grouped into five categories: (1) involvement by extra-nationals, (2) government sponsorship, (3) the establishment of coffee as the leading commodity in a mono-export economy, (4) the genesis of areal patterns of coffee cultivation still visible today, and (5) a growing volume of exports.

#### Involvement by Extra-nationals

Although involved since the beginning of coffee culture in Guatemala, foreign entrepreneurs, particularly West Europeans and Americans, were increasingly among the leading investors in coffee during the period 1850-1880. In fact, it was largely "a small group of foreign planters . . . aided by outside capital and agricultural acumen,

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who gave impetus to the Guatemalan coffee industry."<sup>12</sup> One author, observing the importance of foreigners in the industry, hypothesized that Guatemalans were not inclined to make investments other than in commerce or cattle, perhaps owing to the many losses incurred as a result of domestic turmoil.<sup>13</sup> The instability of prices for other export crops, combined with a scarcity of capital and a dearth of long-term credit, were no doubt equally significant considerations.

#### Government Sponsorship

Encouragement to coffee growers by the government continued. In 1856, ten pulping machines were imported and distributed to the producing areas. To demonstrate the advantages of pulpers, the coffee of small producers was processed gratis. Additional government investments for processing machinery were made in subsequent years.

Legal and economic incentives provided by the government and by the Sociedad Económica, were further expanded after the Liberal Revolution of 1871. Beneficios were established on a cooperative basis. Large areas of land distributed by the government stimulated production on the south coast. President Justo Rufino Barrios (1873-85) exempted newly planted coffee from export taxes. Nurseries were also established during his administration to distribute seedlings free of charge to

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<sup>12</sup>Robert C. West and John P. Augelli, Middle America, Its Lands and Peoples (Englewood Cliffs: Prentice-Hall, 1966), 396.

<sup>13</sup>Valentin Solorzano F., Evolución económica de Guatemala (2d ed.; Seminario de Integración Social Guatemalteca Publicacion 11; Guatemala: Seminario de Integración Social, 1963), 317.

small operators and other farmers in areas such as Antigua and Amatitlán, which were left economically depressed following the collapse of Guatemala's cochineal industry.

The newly created (1871) Ministerio de Fomento included the development of coffee production as one of its principal objectives. The Sección de Estadística, presently the Dirección General de Estadística, was established in 1879. Thus began the maintenance of regular, if not always accurate, coffee statistics.<sup>14</sup>

#### Predominance of Coffee in a Mono-export Economy

The change to coffee was gradual, at first, but in the 1870's coffee became the bulwark of the national economy. "By 1880 coffee was securely established in the Guatemalan economy, and Guatemala was well on the way to becoming a mono-economy with coffee as the center of its commercial production."<sup>15</sup> In that year, coffee constituted 92 percent of the country's total exports by value.<sup>16</sup>

The preemption of resources by the coffee industry severely limited the production of some other crops. Cacao, for example, was destroyed and coffee planted in its place on the coastal lands of Suchitepéquez and Escuintla.<sup>17</sup> Wheat production virtually ceased due to

<sup>14</sup>Ibid., 315.

<sup>15</sup>Sanford A. Mosk, "The Coffee Economy of Guatemala, 1850-1918: Development and Signs of Instability," Inter-American Economic Affairs, Vol. 9, No. 3 (Winter, 1955), 10.

<sup>16</sup>Ibid., 12.

<sup>17</sup>Rubio Sánchez, 209.

competition with coffee for labor. Flour prices soared, and the importation of wheat from the United States commenced.<sup>18</sup> Thus, coffee absorbed the capital, labor, land, and other resources that might otherwise have been employed to diversify the rural economy. On the other hand, coffee attracted foreign investment, which aided in the overall development of the nation.

#### Areal Patterns of Production

Existing data do not permit a detailed assessment of the spatial distribution of coffee production during the 1850-1880 period. It can be inferred, however, that production diffused westward from an Amatitlán-Antigua-Guatemala City core area, where it was first introduced. By the early 1860's coffee was relatively widely cultivated in the core area and around Cobán, Sololá, and Jutiapa. There was also an elongated zone between Escuintla and Retalhuleu which, during the 1860's and 1870's, expanded westward to include the departments of Quezaltenango and San Marcos. Because of the general path of coffee propagation, it can be assumed that the Department of Huehuetenango first witnessed the cultivation of coffee toward the end of the period.

The manner in which coffee cultivation advanced westward is elucidated by two historical sketches. They also demonstrate the phenomenal profits made at this time and lend an appreciation of the

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<sup>18</sup>Solorzano, 365 and Rubio Sánchez, 223.



dynamic role of coffee in the development of Guatemala. The first account concerns the early development of the Costa Cuca area, northwest of Retalhuleu, while the second describes the founding of the coffee finca, Las Mercedes.<sup>19</sup>

The famous Costa Cuca region was opened to coffee production during the 1860's. Legal title to most of the land, some 15,000 caballerías or 1,665,000 acres, belonged to the Indian community of San Martín Chile Verde and could not legally be transferred. However, a Sr. Robles managed to purchase 5,550 acres for 150 dollars, a transaction recognized by the legal authorities. Two other men, observing Robles' successful coffee plantings, later acquired 2,331 acres from him for \$500. Five years later, Robles sold an adjacent lot for about \$54 per acre. The remainder of Robles' land was eventually transferred to his children and converted into fincas, some of which produced great fortunes. One such finca was that of General Manuel Lisandro Barillas, a later president of Guatemala who had married into the Robles family.

The finca Mercedes is located between Quezaltenango and Retalhuleu, about 20 miles from the village of San Martín. Goods were transported from Quezaltenango to the finca by Indians, the roads being "scarcely practicable" for mules. Coffee-processing machines, ordered for the finca from England, arrived at Puerto San José and were taken seventy-five miles to Guatemala City by ox-cart. From there the equipment was carted another 120 miles to Quezaltenango and then carried on the backs

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<sup>19</sup>W. W. Rasor and William Everall, "El café en Guatemala," Centro América, Vol. IV, No. 1 (January, February, and March, 1912), 148-51.



of Indian laborers to the finca. Yet, the finca was located only thirty-five miles from the coast! The transportation of this equipment, parts of which weighed almost one ton, occupied over 200 men for nearly two months. Because one piece was broken en route, and could not easily be replaced, the first harvest was processed manually. The green coffee was transported to Retalhuleu by mule, and then by ox-cart to Champerico. The proprietors of the finca requested and obtained permission from the government to open a road. All producers of the Costa Cuca area were permitted to use the road, but some landowners along the way caused additional expense and delay by refusing permission to cross their property. The entire cost of the road was borne by the finca Mercedes. In the 1870's, the original owners sold the farm to a Costa Rican for \$150,000, the largest amount paid for a single finca to that date. Eighteen months later, the finca was resold for \$200,000. "All things considered," including the return from coffee harvested, an estimated profit of \$275,000 was made in 1.5 years!

The production of coffee also began to expand rapidly in the Cobán region in the 1860's, and prospects for additional planting in this zone were considered excellent. It was thought that the area "could produce as much coffee as Costa Rica," and that it possessed the advantage of relatively rapid and economical transportation to the Atlantic, via the Río Polochic and Lake Izabal. Other assets of the Verapaz zone were that Cobán coffee soon became well-known in Europe, the local plant appeared to be of a hardy nature, and a quick first harvest, if desired, could be realized in the eastern part of the area

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along the Polochic.<sup>20</sup> During this decade also, the first German owned coffee fincas were developed in the Cobán area.

### The Volume of Exports

Exports of coffee from Guatemala began before mid-century. The earliest reference to such exports indicated that coffee valued at 3,000 pesos left the country in 1825.<sup>21</sup> The volume of coffee was, of course, minimal. Even in 1853 only four bags of coffee were exported from Puerto de Izabal and forty-six from Iztapa.<sup>22</sup> Regular records of coffee exports began with the crop year 1854/55, a fact which has apparently led Rubio Sánchez, Alvarado, the Food and Agriculture Organization,<sup>23</sup> and others to cite this year or the previous one as the date of the first coffee exports.

The decade of 1860-69 was one of tremendous expansion for the incipient coffee industry. Exports jumped from 1,177 bags in the crop year 1859/60 to 100,587 in 1870/71. Coffee culture continued to distend in the 1870's, as evidenced by exports which climbed to 222,132 bags in 1879/80.<sup>24</sup>

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<sup>20</sup>Julio Rosignon, Porvenir de la Verapaz en la República de Guatemala (Guatemala: Imprenta de la Luna, 1881), 15, cited in Rubio Sánchez, 205.

<sup>21</sup>G. A. Thompson, Narrative of an Official Visit to Guatemala from Mexico (London: John Murray, 1829), 485, cited in Jones, 203.

<sup>22</sup>Gaceta de Guatemala, June 23, 1854, 8.

<sup>23</sup>United Nations, Food and Agriculture Organization, The World's Coffee, No. 9, Studies of the Principal Agricultural Products on the World Market (Rome, 1947), 134.

<sup>24</sup>See Appendix B for coffee exports 1854/55 to 1968/69.

Era of German Influence: 1880-1944

Marked change was exhibited in major aspects of the coffee industry during the period 1880-1944. The transformation was particularly evident in foreign involvement, government attitude, production, transportation, and exports. The factor which typifies this period, however, is the influence exerted on the coffee industry by German nationals. This influence permeated beyond the production and trade of coffee into the general commerce of the nation.

Increased Foreign Involvement

Like many newly independent Latin American states, Guatemala endeavored to attract immigrant settlers by means of land concessions and economic incentives. Numerous foreign nationals arrived individually and in groups from about 1830 onward, enticed by a variety of colonization schemes. By 1893, there were in Guatemala some 11,331 foreigners, including 1,303 Americans, 532 Spaniards, 432 Italians, 399 Germans, 349 English, and 272 French.<sup>25</sup> Although Germans were not the most numerous,

. . . they made their influence felt out of all proportion to their numbers. By 1900 Germans owned and operated nearly half of the general merchandise and importing firms in Guatemala City, and more than two-thirds of the ones in the Pacific highlands, and they controlled the production, export, and marketing of coffee, which had become Guatemala's leading export crop. German economic penetration, however, was more spectacularly achieved in the Alta Vera Paz, where by 1900 they completely dominated the economic life of the department.<sup>26</sup>

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<sup>25</sup>Guillermo Nájuez Falcón, "German Contributions to the Economic Development of the Alta Vera Paz of Guatemala, 1865-1900" (unpublished Master's thesis, Department of History, Tulane University, 1961), 86.

<sup>26</sup>Ibid., v.

By 1914 nearly half of the coffee crop was produced by foreigners, and 170 German proprietors accounted for over one-third of the total. The average size of foreign coffee plantations, moreover, exceeded the average Guatemalan coffee holding by three times.<sup>27</sup> In 1935 German growers produced 64 percent of the coffee crop and operated 25 percent of the plantations.<sup>28</sup> To a significant extent, coffee ceased to be a national activity. Indeed, "about 48 percent of the large properties of the country before the beginning of World War II were owned by foreigners, mostly Germans, and from these properties came nearly two-thirds of the total coffee production of Guatemala."<sup>29</sup>

Coffee trade became even less a national affair than production. In 1896 German ships transported, to Germany, 63 percent of the total coffee exports. The growers, in turn, imported their farm machinery and equipment from Germany.<sup>30</sup> Table 1 illustrates the amount of coffee exports handled by foreigners and the degree to which coffee trade was a Guatemalan undertaking in 1936/37.

<sup>27</sup>Jones, 207.

<sup>28</sup>Alfonso Rochac, Diccionario del café (Mexico: Oficina Panamericana del Café, 1964), 268.

<sup>29</sup>Preston E. James, Latin America (4th ed. rev.; New York: The Odyssey Press, 1969), 138.

<sup>30</sup>Náñez, 86.

Jan	1
Feb	2
Mar	3
Apr	4
May	5
Jun	6
Jul	7
Aug	8
Sep	9
Oct	10
Nov	11
Dec	12
Total	13

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TABLE 1

## GUATEMALAN COFFEE EXPORTS BY NATIONALITY OF EXPORTER, 1936/37

Nationality of Exporter	Volume <sup>1/</sup>	Percent Total Exports
German	684,009	68
American	156,849	16
Dutch	78,071	7
English	41,002	4
Guatemalan	40,372	4
Italian	5,503	} 1
Nicaraguan	1,760	
Swiss	765	
Norwegian	600	
Spanish	316	
Belgian	198	
French	170	
Chinese	1	
Total	1,009,622	100

<sup>1/</sup> Quintales of green coffee, all fractions deleted. One quintal equals approximately one hundredweight.

Source: Revista Agrícola (March, 1938), 184.

The preponderant share of German investment in the Guatemalan coffee industry did not evolve rapidly. Actually, Germans were at first involved primarily with import firms and other businesses and only later with coffee production. Minor German investments in coffee culture were made in the 1850's and 1860's. The rate of investment increased during the 1870's, but dwindled after a crisis in 1882 and 1883 when prices plummeted. By 1888 prices soared, fortunes were made, and large amounts of German capital were invested in coffee.<sup>31</sup>

Ill feelings, accusations, and German nationalism to the contrary, German farmers did not conspire to "take-over" the Guatemalan coffee industry. The reasons for German hegemony are quite clear, at least in

<sup>31</sup>Rasor and Everall, 146.

retrospect: (1) German nationals enjoyed a source of capital and credit not available to Guatemalans. The remarkable expansion of German industry and commerce, linked with a concurrent demand for raw materials and favorable investment opportunities, reinforced the availability of German capital in Guatemala, as elsewhere. This access to credit permitted German farmers to outbid others for prime coffee lands. Viewed differently, because a scarcity of capital existed in Guatemala, German businessmen traded capital in a veritable "sellers' market" for land and coffee enterprises. (2) German capital, some of which was generated from coffee production, was invested in other activities which aided the farmers. For example, "By 1900 Germans in the Alta Vera Paz had gained a monopoly over transportation facilities out of the department," as well as considerable control over international shipment of coffee.<sup>32</sup>

(3) Guatemalans lacked the commercial connections and marketing skills of German producers and traders. Consequently, Guatemalan growers, when able to secure credit, paid a higher rate of interest. Market crises, therefore, weighed more heavily on native producers. Guatemalan fincas were often forfeited to Germans through mortgage foreclosures in times of economic depression or low coffee prices. (4) German science and technology was employed to resolve problems of yields and disease. Scientists, financed by commercial interests, were sometimes brought in to render technical assistance to German growers. Moreover, the

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<sup>32</sup>Náñez, 78.



perseverance and ingenuity of German pioneer farmers prevailed here, as in other parts of the New World, where others sometimes failed or did poorly.<sup>33</sup>

Foreign capital, skills, entrepreneurship, marketing connections, and implements contributed much to the economic development of Guatemala. German contributions to coffee farming were especially notable in Alta Verapaz, but were also significant in the Guatemala City, Antigua, and Costa Cuca areas. German farmers experimented successfully with quality and yields, production techniques such as pruning, new tree varieties, the control and prevention of pests and diseases, artificial fertilizers, and processing machines. German investment in roads, railroads, cattle, and crops other than coffee also helped to advance overall development.

It has been debated long and heatedly that Germans employed exorbitant interest rates, mortgage foreclosures, and other commercial levers afforded by their economic power to acquire land and business holdings.<sup>34</sup> These arguments contain some truth but are in any event exaggerated and unlikely to be resolved. Guatemalan resentment was abetted by the attitudes and activities of Germans living in Guatemala. German families participated almost exclusively in German social

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<sup>33</sup>See, e. g., Richard H. Shryock, "British Versus German Traditions in Colonial Agriculture," The Mississippi Valley Historical Review, Vol. XXVI (1939), 39-54.

<sup>34</sup>See, e. g., Mario Monteforte Toledo, "Bean of Contention," The Inter-American, Vol. II (March, 1943), 22-24+; and "Government Custodianship of Coffee Plantations in Guatemala," Bulletin of the Pan American Union, Vol. 77, No. 9 (September, 1943), 488-92.

functions and clubs. German children attended the Colegio Alemán. Business was conducted through German banking houses, and commercial, political, and social attention was focused more upon Berlin than upon Guatemala City.

Even as early as World War I, the Guatemalan government assumed temporary control of German properties. Therefore, when Nazi propaganda reached Guatemala during World War II and was taken up by the local German population, particularly the racial superiority aspects, it did not take much pressure from the United States to effect the expropriation of German properties. Between 1941 and 1945, most German lands were expropriated, apparently with the aid of blacklists supplied by the United States. Bank accounts were frozen and government personnel placed in charge of German fincas. The Banco Central managed crop sales and other commercial activities for the farms, while Germans thought to be Nazi sympathizers were sent to the United States and Canada for internment.

#### Government Attitude

Obviously, the attitude of the Guatemalan government toward foreign, especially German, immigration and settlement was significantly modified during the period 1880-1944. In 1897, President Justo Rufino Barrios signed a far-reaching immigration law which attempted to regulate, encourage, and promote immigration. Agents were authorized to pay the travel expenses of suitable immigrants, and public lands were made available for settlement. But, by World War I, and increasingly afterward, the government became first disillusioned and then resentful of

what it considered to be the foreign exploitation of Guatemalan resources without benefit to the country.

A shift in governmental attitude with regard to coffee production, per se, is also observed. Concern for the encouragement of coffee culture gradually changed to a realization of over-dependence upon a single-export commodity. As early as 1885 a decree was implemented to promote the production of rubber, cacao, quinine, sarsaparilla, indigo, cotton, henequen, wheat, and cattle, although it met with only limited success. Several laws in the 1890's encouraging cotton production, specifically, also had little effect.

Low world coffee prices prompted a crisis in the Guatemalan industry in 1897. Many producers could not meet financial obligations, having optimistically over-extended investments in previous years. The national economy suffered, and attention fixed anxiously upon crop and export diversification measures. "The re-appraisal of Guatemala's agriculture which started with the coffee crisis of 1897 was not simply a development of the moment, but remained as a continuing theme in subsequent years."<sup>35</sup> Farmers were exhorted to produce basic foodstuffs, for example, because wheat, rice, beans, and corn were being imported. Official interest in diversification has endured to the present time. Unfortunately, during periods of high coffee prices or adequate markets all sense of urgency for diversification tends to fade.

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<sup>35</sup>Mosk, 17.

### Coffee production

Statistics on the production of coffee are neither available on a yearly basis, nor without major discrepancies, for the period before about 1930. Conflicting figures are reported, and data in many cases exist for only parts of the country. Thus, national totals for some years are deflated because data was not forthcoming from all areas. A general idea of the increasing production can, however, be gained from export data.

The spatial distribution of coffee production during the period 1880-1944 approaches present day patterns. The western departments of Quezaltenango, San Marcos, and Suchitepéquez, for example, began to produce the greater portion of Guatemala's coffee. Already in 1884, the departments ranked as follows: Quezaltenango, Suchitepéquez, Amatitlán, San Marcos, Escuintla, and Alta Verapaz. Compared with the period 1850-1880, production in the early 1900's had shifted westward, while relative to the current situation the departments of Amatitlán, Sacatepéquez, Chimaltenango, and Escuintla still accounted for a relatively large share of national production. By the 1930's, as evidenced in Table 2, San Marcos had become the leading coffee-producing department in Guatemala, and present day distributional patterns were established.

### The Movement of Coffee

The road system expanded during the period 1880-1944 to accommodate existing coffee districts and, by providing access, encouraged the development of new areas. Yet, the extension of roads was only of

secondary importance. This period also witnessed the construction of virtually the entire railroad system of Guatemala, revolutionizing coffee transportation and altering internal movement decisively.

TABLE 2  
PERCENT OF GUATEMALAN COFFEE PRODUCTION ACCOUNTED FOR  
BY LEADING DEPARTMENTS

Department	1930/31- 1933/34- 1934/35	1945/46- 1947/48	1964/65- 1966/67
San Marcos	24.9	23.5	23.6
Quezaltenango	17.9	16.0	14.7
Suchitepéquez	16.8	14.1	13.0
Santa Rosa	7.3	9.5	9.7
Chimaltenango	6.5	6.7	8.2
Escuintla	6.2	6.0	6.1
Alta Verapaz	7.3	7.5	5.2
Amatitlán <sup>1/</sup>	2.8	-	-
Guatemala	-	4.0	5.0
Retalhuleu	2.5	4.5	3.9
Sacatepequez	2.5	2.2	2.2
Heuhuetenango	-	-	2.2
Sololá	1.2	1.2	0.9

<sup>1/</sup> Amatitlán ceased to be a department in 1935. Four coffee-producing municipios (Amatitlán, Villa Canales, Villa Nueva, and Petapa) were incorporated into the Department of Guatemala, and two (San Vicente Pacaya and Palín) into the Department of Escuintla.

Source: Calculated from data in World's Coffee (FAO, 1947); Revista Cafetalera de Guatemala Vols. IV & V (Jan.-Mar. & Apr.-Dec., 1948); and data provided by ANACAFE.

With great effort, German coffee growers of the Alta Verapaz constructed a road from Cobán to Panzós, on the Río Polochic, where coffee could be transported by water to the port of Livingston. The road was completed in 1881. It was difficult to traverse but provided a welcome improvement over the previous transport system, in which Indians carried the coffee to Panzós. A more desirable mode was sought. Capital from



sources in Germany, and from local Germans, provided the impetus for a Tukurú-Panzós railroad project. A concession was obtained in 1895 but, due to the coffee crisis of 1897, the line was completed only from Panzós to Pancajché. Despite optimism, the line incurred a financial loss during the first years of service. Later, the same German interests gained control of the Panzós-Livingston steamship line and, ultimately, completed the monopoly by acquiring shipping lines to Europe.<sup>36</sup>

Both the establishment of the Pacific Coast ports and the early rail development in southern Guatemala mirrored the westward progression of coffee production from the Amatitlán-Antigua-Guatemala City area. The port of San José was founded in 1852, Champerico in 1872, and Ocós at a still later date. Many of the railroad lines were built specifically to transport coffee.<sup>37</sup> The first railroad outside of Alta Verapaz, the San José-Escuintla line, was extended to Guatemala City in 1884. In the same year, the Champerico-Mululá line was constructed to move coffee from the San Felipe area. Four years later, the Ocós-Técun Umán line, which handled coffee from San Marcos, was completed. By 1915, lines were extended from Escuintla to Mululá and Tecún Umán, with coffee providing a major share of the freight (Map 3).

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<sup>36</sup>Náñez, 65-78.

<sup>37</sup>Information on the railroads obtained largely through personal interview with Mr. J. C. Leslie, of the former International Railways of Central America (IRCA).







A dream of coffee businessmen was realized in 1908, when the interoceanic railroad was inaugurated.<sup>38</sup> Despite the fact that Guatemala's coffee was marketed chiefly in Europe and eastern United States, it had previously left the country from Pacific ports. The only significant exception was coffee from the Cobán area, which departed from Livingston on the Atlantic side. Coffee loaded at Pacific ports usually crossed the Isthmus of Panama, and some even made the long voyage around South America. Thus, the interoceanic rail route reduced transport costs, stimulated production, and altered the basic internal flow of coffee in Guatemala.

Changes in the internal flow of coffee during the years 1880-1944 are illustrated by the percent of total coffee exports handled by the various ports (Table 3). Champerico gained in importance from 1912 to 1926, due probably to the destruction of the port of Ocós by earthquake in 1902 and the construction of a line in 1915 which linked Tecún Umán and Las Cruces, facilitating the shipment of San Marcos coffee to Champerico. Most significant, Puerto Barrios assumed dominance among the ports shortly after completion of the interoceanic railway. A slight trend in the 1930's from Atlantic to Pacific ports may have reflected an expanding market on the West Coast of the United States. Unfortunately, the lack of data for coffee exports by ports prevents a more detailed analysis for the period. Averages of successive years, for example, are needed to "balance out" year-to-year regional

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<sup>38</sup>The government built a line from Puerto Barrios to El Rancho in 1904, but was unable to complete it to Guatemala City. In return for the Puerto Barrios line and other concessions, Minor Keith constructed the difficult El Rancho-Guatemala City segment.

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variations in volume resulting from weather, disease, pests, and the natural yearly fluctuations in yields.

TABLE 3

PERCENT OF GUATEMALAN COFFEE EXPORTS, BY VOLUME, HANDLED BY  
VARIOUS PORTS FOR SELECTED YEARS, 1893-1939 <sup>1/</sup>

Port	1893	1896	1912	1925/26	1930	1932/33	1934/35	1939
Puerto Barrios	--	--	35.9	43.4	64.5	58.6	55.2	51.7
Champerico	50.2	47.9	21.7	35.2	22.8	22.5	26.8	25.0
San José	28.3	29.7	18.4	13.8	4.3	9.7	10.7	19.1
Livingston	6.8	6.5	4.7	7.6	8.5	9.1	7.2	4.1
Océbs	14.1	16.0	19.3	--	--	--	--	--

<sup>1/</sup> The national export totals, in absolute terms are not in agreement among the various sources. However, the percentages for the ports add to approximately 100, with small deviations due to rounding numbers.

Source: Jones, 387; Alvarado, 555; Memoria de la Secretaría de Hacienda y Crédito Público, 1896 (Guatemala: Tipografía Nacional, 1897), 97; and Sección de Estadística de Aduanas, Guatemala, 1894 (personal notes of Rubio Sánchez).

#### Export Volume and Foreign Markets

The Guatemalan coffee economy after 1880 became increasingly tied to the world coffee economy, and the disadvantages of a single-export crop were becoming apparent.

By the end of the First World War, coffee production in Guatemala had gone through more than a half a century of active expansion. Development had not been continuous, for there had been over ten years of instability and uncertainty in coffee markets following the coffee crisis of 1897. But the memory of those years had faded under the influence of the more benign market conditions prevailing from 1909 to 1913, and the expansion of American consumption of mild coffees had eased the pains of adjustment to war-time conditions. Nevertheless, the period of instability had generated sharp reactions, and had given Guatemala a taste of what was to appear

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in a much more acute form in the dislocated international economy of the inter-war period, and especially during the depression decade of the thirties.<sup>39</sup>

Overall, the period 1880-1944 was one of discontinuous, but remarkable growth for the Guatemalan coffee industry. The best available measures of this increase, export statistics, portray a rise from 1881/82 to 1944/45 of 259 percent.<sup>40</sup> The growth in exports from 1881/82 to 1929/30 was even greater, 295 percent, but was subsequently reversed as a result of the Great Depression.

Prior to World War I, a large proportion of Guatemalan coffee was marketed, not surprisingly, in Germany.<sup>41</sup> This coffee came largely from German-owned fincas and from producers of other nationalities indebted to German commercial interests. Much of the remaining Guatemalan coffee was exported to other European countries. Europe continued to be the primary destination of Guatemala's coffee until about 1920, when due to constraints imposed by the War, 83 percent of the shipments entered the United States.<sup>42</sup> After the War, the United States remained Guatemala's leading coffee market, taking 53 percent of the total coffee exports during 1936-38, while Germany accounted for 23 percent in the same period.<sup>43</sup> The balance of coffee exports entered other European markets

<sup>39</sup>Mosk, 20.

<sup>40</sup>Revista Agrícola de Guatemala, Vol. XVI, Nos. 9-10 (October-November, 1939), 222-23.

<sup>41</sup>Náñez, 86.

<sup>42</sup>Jones, 211.

<sup>43</sup>United Nations Food and Agriculture Organization, The World Coffee Economy, Commodity Bulletin Series, 33 (Rome 1961), 67.

and Canada. Trade with Germany ceased during World War II, and not until the 1960's did coffee exports to that nation attain pre-War levels.

#### The Post-War Period: 1945-1960

By the standards set in earlier years, the period 1945-60 was one of much slower growth for the Guatemalan coffee industry. The effect of World War II and the expropriation of German-owned fincas cannot be calculated precisely, since the data are lacking, but the distribution of production was relatively stable and similar to present patterns. Internally, the most significant events included completion of the Atlantic Highway and the construction of a port facility at Matías de Gálvez. Trucking now provided competition for the railroad, which had for a period of more than thirty years dominated coffee transport.

#### The Fincas Nacionales

Having expropriated some 120 German-owned fincas, the Guatemalan government found itself to be a major element in the coffee business following World War II. It was, in fact, the nation's largest producer of coffee in 1947.<sup>44</sup> The farms became known as the Fincas Nacionales, or National Farms.

Under government control, the output of the Fincas declined both absolutely and relatively. Data to measure the decrease are not available, but it is noted that in the early 1940's the Fincas accounted for

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<sup>44</sup>E. C. Higbee, "The Agricultural Regions of Guatemala," The Geographical Review, Vol. 37, No. 2 (April, 1947), 194.

about one-third of national production, while they provided only 22 per cent in 1948/49.<sup>45</sup> The belief that a drop in coffee production occurred on the Fincas is supported by widespread criticisms of inefficient management and corruption. "It is charged that many of the administrators have been political appointments, who know little about farming but are interested mostly in quick personal gain."<sup>46</sup> It is said that on certain of the large Fincas, coffee production has never surpassed one-half of the output that was realized under private German management.

The Fincas Nacionales have been a political football since their inception. Under the liberal regimes of Juan José Arevalo Bermejo (1945-51) and Jacobo Arbenz Guzmán (1951-54), workers on the Fincas were issued parcels of the land in usufruct. On some farms cooperatives were formed among the laborers. The move was socially and politically congruous, but economically impractical, except in some cases in which campesino incomes did rise significantly.<sup>47</sup> President Carlos Castillo Armas (1954-57) reversed the liberal trend, liquidating the cooperatives

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<sup>45</sup>Franklin D. Parker, The Central American Republics (London: Oxford University Press, 1964), 116; and the United Nations Economic and Social Council, Economic Commission to Latin America, Legal and Economic Conditions Affecting Foreign Investments in Selected Countries of Latin America: Policies Affecting Foreign Investments in Guatemala (Montevideo: Economic Commission to Latin America, March 29, 1950), 14.

<sup>46</sup>Nathan L. Whetten, Guatemala, The land and The People (New Haven: Yale University Press, 1961), 128.

<sup>47</sup>José Luis Paredes Moreira, Reforma agraria, una experiencia en Guatemala (Guatemala: University of San Carlos, 1963), 20.



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and placing the usufruct lands under state control once again. He then legalized the rental and sale of the Fincas.

A policy apparently geared to eventual elimination of the National Fincas has been followed in greater or lesser degree since 1954. Many of the Fincas were transferred, honestly or perfidiously, to individuals.<sup>48</sup> Subsequent governments sometimes reversed former transactions, repossessing the finca or fincas in question. Thus, of the original 120 there were only 44 Fincas remaining in 1953, but by 1961 the total was 74.<sup>49</sup> In 1967 the number had dwindled to 24. In some cases, Fincas have been transferred to national banks in payment of government debts. As late as 1968, five Fincas were scheduled to be transformed into cooperatives, but the move was canceled several days before it was to take effect.<sup>50</sup> The net result of these transactions and reversals of policy is (1) a complicated and scantily recorded history of the National Fincas, (2) inefficient management and uncertainty concerning the future, (3) a difficult, tenuous existence for workers on the Fincas, and (4) less than optimum production levels.

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<sup>48</sup>Clarence W. Minkel, "Programs of Agricultural Colonization and Settlement in Central America," Revista Geográfica, No. 66 (June, 1967), 21.

<sup>49</sup>Paredes Moreira, 84 and 87.

<sup>50</sup>La Prensa Libre, October 10, 1968, 4. It was subsequently reported that the five Fincas in the Cobán region were turned over to "peasant-farmers" on January 16, 1969. La Prensa Libre, January 17, 1969.



Coffee Production and Significance to the Economy

The distribution of production by departments remained virtually the same throughout the period 1945-1960, and to the present time (Table 4). Perhaps the most significant change is represented by the fact that the department of Alta Verapaz slipped from the fourth position (7.5%) in the late 1940's to fifth or sixth position in the 1950's, and to sixth or seventh place in the 1960's. However, even this decline represents so small a difference in actual percentage of total production as to be of minor significance nationally.

TABLE 4

PERCENT OF GUATEMALAN COFFEE PRODUCTION, BY VOLUME, ACCOUNTED FOR BY EACH DEPARTMENT, 1945-1960

Department	3-Year Av. 1945/46- 1947/48	1955/56	1956/57	1957/58	1958/59	1959/60
San Marcos	23.5	22.4	23.5	23.2	23.4	22.0
Quezaltenango	16.0	14.3	12.9	16.9	14.7	15.3
Suchitepéquez	14.1	15.0	14.9	15.4	13.3	13.5
Santa Rosa	9.5	8.5	12.8	8.4	9.3	9.7
Chimaltenango	6.7	5.3	6.5	7.1	7.1	7.8
Guatemala	4.0	3.7	3.5	3.7	4.4	6.1
Escuintla	6.0	5.3	6.9	5.8	5.4	5.8
Alta Verapaz	7.5	9.8	5.6	5.8	7.4	5.7
Retalhuleu	4.5	5.1	4.9	4.8	4.7	4.5
Sacatepéquez	2.2	2.9	2.6	2.7	3.1	3.4
Sololá	1.2	2.3	2.5	2.4	2.1	2.2
Huehuetenango	0.7	1.3	1.1	1.2	1.7	1.5
Jutiapa	0.3	0.4	0.6	0.3	0.5	0.6
Zacapa	0.8	1.0	0.3	0.5	0.6	0.4
El Quiché	0.7	0.8	0.3	0.5	0.6	0.4
Baja Verapaz	0.8	0.9	0.6	0.7	0.9	0.4
Jalapa	0.2	0.3	0.2	0.3	0.2	0.3
Chiquimula	---	0.4	0.1	0.2	0.1	0.2
El Progreso	---	0.1	0.1	0.1	0.1	0.1
Izabal	---	0.2	0.1	0.1	0.2	0.1

Source: Revista Cafetalera de Guatemala, Vols. IV and V (January-March and April-December, 1948), 18-28 and 19-34 respectively; and Boletín Estadístico (ANACAFE), No. 2 (July, 1961), 9.

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Guatemala's total production of coffee increased from 891,667 bags in 1945/46 to 1,525,000 bags in 1960/61, an increase of 71 percent (Appendix A). The country thus maintained a position of fourth or fifth among Latin American and world coffee producers until about 1953/54, when African nations gained a larger share of world production (Table 5). Among Latin American countries Guatemala continued to hold fifth place, after Brazil, Colombia, El Salvador, and Mexico. Prior to the mid-1930's, it had ranked fourth in Latin America.

TABLE 5

POSITION OF GUATEMALA AMONG LATIN AMERICAN AND WORLD  
COFFEE PRODUCERS, 1944/45-1960/61

Year	Position in Latin America	Position in World	Percent of Total Latin America	Percent of Total World
1944/45	4	4	4.3	3.7
1945/46	5	5	3.5	3.0
1946/47	4	4	3.4	2.9
1947/48	4	4	3.1	2.6
1948/49	5	5	3.1	2.6
1949/50	5	5	3.0	2.6
1950/51	5	5	3.0	2.5
1951/52	4	4	3.3	2.7
1952/53	5	5	2.9	2.4
1953/54	4	6	3.1	2.5
1954/55	5	6	3.4	2.7
1955/56	5	7	3.0	2.3
1956/57	5	7	3.9	2.9
1957/58	5	6	3.3	2.6
1958/59	5	8	2.9	2.3
1959/60	5	8	2.5	2.1
1960/61	5	8	3.1	2.4

Source: The World Coffee Economy (FAO), 1961, 45-6.

The role of coffee in the Guatemalan economy, as measured by the percent of total exports, has gradually decreased since 1956 (Table 6).



The downward trend is due largely to two factors: (1) coffee prices on the world market, which peaked in 1954, have since generally declined, and (2) diversification efforts have been partially successful. Other crops, such as cotton and bananas, have constituted a greater share of the total exports. Coffee averaged 78 percent of total exports for the decade 1950-59, and 52 percent for the years 1960-67.

TABLE 6

COFFEE AS A PERCENTAGE OF TOTAL EXPORTS, BY VALUE,  
FROM GUATEMALA, 1947-1967

Year	Percent	Year	Percent
1947	61.2	1958	76.6
1948	61.2	1959	78.7
1949	71.5	1960	62.9
1950	78.0	1961	58.1
1951	76.8	1962	67.9
1952	81.8	1963	49.5
1953	76.7	1964	46.5
1954	77.5	1965	46.0
1955	76.5	1966	55.5
1956	82.4	1967	31.2
1957	75.6		

Source: 1947-52, Banco de Guatemala; 1953-62, Annual Coffee Statistics, Vols. 17-28; and 1963-67, Foreign Agriculture Circular: Coffee (January 1969), 8.

#### Internal Movement and Coffee Exports

Concerning the internal transport of coffee, the period 1945-1960 could be entitled the "era of the railroad." Puerto Barrios became increasingly the leading port for coffee shipments (Table 7). Almost all coffee shipped from Puerto Barrios, three-fourths of the national total, arrived there by rail. The Atlantic Highway, from Guatemala City to Puerto Barrios, was completed in 1959 and thereafter facilitated a great



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change in the movement of coffee. Matías de Gálvez, adjacent to Puerto Barrios, was constructed as a government port in 1955 to provide competition with the railroad which, along with the port facilities at Puerto Barrios, was owned by a private American company.

TABLE 7  
PERCENTAGE OF GUATEMALAN COFFEE EXPORTS, BY VOLUME,  
HANDLED BY VARIOUS PORTS

Port	3-Year Av. 1946/47- 1948/49	3-Year Av. 1951-53	3-Year Av. 1955-57
Puerto Barrios	75.7	73.5	78.3
San José	12.7	16.0	15.1
Champerico	11.3	10.5	6.7

Source: Revista Cafetalera de Guatemala, Vols. 3, 5, and 6 (Sept.-Dec., 1947, April-Dec., 1948, and Aug.-Oct., 1949), 48, 12, and 52-3, respectively; and Banco de Guatemala, unpublished data.

Another significant change in this period was the fact that San José surpassed Champerico in the export of coffee (compare Tables 3 and 7). The reason for this has not been discerned. It may, however, reflect the railroad company's ownership of the port facilities at San José.

Coffee exports relative to earlier periods, increased steadily if less spectacularly. In 1944/45, 855,018 bags of coffee left Guatemala. By 1959/60, the peak year for the period, the volume of exports had risen to 1,485,536 bags, or about 42 percent (Appendix B). World coffee prices reached all-time highs in 1954 but declined in the later 1950's. Consequently, the value of coffee exports was greater in 1956/57 and 1957/58 than in 1959/60.



During the period 1945-1960, Guatemala's rank among Latin American coffee exporting nations changed from fourth to fifth, and among world exporters from fourth to ninth (Table 8). This decline was due chiefly to increases by Mexico and several African nations in the 1950's. For the period, Guatemala averaged 3.7 percent of Latin American coffee exports and 2.9 percent of world coffee exports. It appears that Guatemala has been gaining an increased share of Latin American coffee exports since the late fifties, but this depends largely upon the size of the Brazilian crop in any given year.

TABLE 8  
POSITION OF GUATEMALA AMONG LATIN AMERICAN AND  
WORLD COFFEE EXPORTERS, 1945-1959

Year	Position in Latin America	Position in World	Percent of Total Latin America	Percent of Total World
1945	4	4	3.6	3.1
1946	3	3	3.3	2.8
1947	4	4	3.8	3.3
1948	4	6	2.9	2.5
1949	4	5	3.1	2.7
1950	4	5	3.8	3.1
1951	5	7	3.3	2.7
1952	4	5	3.8	3.1
1953	5	6	3.3	2.7
1954	5	6	3.9	3.0
1955	5	7	3.7	2.9
1956	5	8	3.7	2.7
1957	5	9	3.9	2.9
1958	5	8	4.6	3.3
1959	5	9	4.4	3.3

Source: The World Coffee Economy (FAO), 1961, 56.

After World War II, the United States continued to be Guatemala's chief coffee market. Germany received very little Guatemalan coffee

before the mid-1950's, and other European countries and Canada comprised the secondary markets. During the mid-1950's, however, Germany began to import an increasing share of Guatemalan coffee, a trend which has continued into the 1960's (Table 9).

TABLE 9  
THE UNITED STATES AND GERMANY AS MARKETS FOR  
GUATEMALAN COFFEE 1950-1960

Year	Percent to U. S.	Percent to Germany
1950	91	---
1951	92	---
1952	87	1
1953	84	5
1954	79	6
1955	82	---
1956	78	5
1957	77	11
1958	72	16
1959	68	14
1960	63	23

Source: Guatemala, Ministerio de Agricultura, Diagnóstico del desarrollo económico del sector agrícola de Guatemala, 1950-1960, Guatemala, 1962.

Germany has been the second most important market for Guatemalan coffee since 1957 and by 1960 accounted for 23 percent of Guatemala's coffee exports. Reliance on the United States market had declined, but almost two-thirds of Guatemala's coffee was still shipped to the United States in 1960.



## CHAPTER IV

### SOCIAL AND INSTITUTIONAL ASPECTS OF THE COFFEE INDUSTRY

Certain social and institutional aspects of the coffee industry have a direct relationship to the Guatemalan economy, and particularly to the agricultural sector. Those considered here are largely of an infrastructural nature. That the social aspects have developed over a long period of time is of paramount importance for understanding and dealing with related issues. On the institutional side, research and policy-implementing agencies are vital to current overall development, to the general health and growth of the coffee industry, and to the maintenance by Guatemala of a competitive position among the world's coffee-exporting nations.

#### Social Aspects

In Guatemala, the effects of more than one hundred years of coffee culture upon the indigenous peoples, their agriculture, and land tenure patterns are unequalled by any other form of commercial agriculture. In large part, problems concerning rural labor and agrarian reform have been brought about by coffee culture and are, in turn, reflected in the present industry. Logically, the coffee industry, whether or not its members find the relationship palatable, must be involved in finding solutions to both the social and economic ills that plague many rural areas.





### Effects upon the Indigenous Population

The establishment of coffee fincas in Guatemala led to a redistribution of the Indian population and indirectly initiated seasonal migrations. The acquisition of many Indian lands, combined with increased population pressure on the remaining holdings, has actually compelled some Indians to live on coffee fincas and others to migrate seasonally to augment their inadequate income from agriculture. The pressure of the Indian population upon the decreased land area is, of course, the product of centuries of exploitation and is not due solely to coffee. The production of coffee did, however, provide the incentive for "opening up" large areas such as the western piedmont, and coffee farmers influenced the government to provide land and labor for coffee plantings. Jones writes that in the late 1870's "the Liberals at times ruthlessly drove them [Indians] from their holdings, thus making them more dependent on such employment as planters and others might offer."<sup>1</sup> Dessaint observes that:

There may have been cacao and maize plots in the Pacific Piedmont cultivated by pre-Columbian Highland Indians, but there were surely fewer of them than modern coffee fincas, and they were probably at higher altitudes. Indians from the nearby Highlands were, soon after the Conquest, forced into Piedmont haciendas, where they remain today (whether they call themselves Ladinos or Indians), as colonos.<sup>2</sup>

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<sup>1</sup>Jones, 150.

<sup>2</sup>Alain Y. Dessaint, "Effects of the Hacienda and Plantation Systems on Guatemala's Indians," América Indígena, Vol. 22, No. 4 (October, 1962), 337. Colonos are workers residing permanently on the fincas.

Historically, coffee culture has been an important factor in the integration of the Guatemalan Indian population into national economic life. La Farge notes that:

This happy isolation was shattered in the last half of the nineteenth century when the development of the coffee fincas on the Pacific slopes of the Sierra Madre produced a demand for labor which could be filled only by drawing upon the population reservoirs of the highlands. First by force, later by the elaborate system of debts known as habilitación, these reservoirs were tapped. The Indians began to lose their economic independence, and the profits of the habilitador's unpleasant trade drew increasing numbers of Ladinos into their fastnesses. Experiences on the coast and en route taught the natives new tastes and desires; contacts with more sophisticated people weakened their faith in native ways and in all religion. Through the finca system the Machine age began to invade even this remote part of the highlands [Santa Eulalia], despite the continuing barriers of mountains and bad trails.<sup>3</sup>

Colono workers on coffee farms are in much closer contact with Western concepts and, consequently, they have become "ladinoized" much more readily than the seasonal migrant. In most cases, the colono is definitely within the national economy, earning wages and buying transistor radios and other commodities. Less obvious is the relationship between the national economy and the seasonal migrant from a highland Indian village commonly described as being "isolated," or "outside of national economic life." Village economies are, in fact appreciably affected by the amount of money brought back by migratory workers from employment on coffee and other types of fincas. Thus, it is not unreasonable to expect that a policy decision by the International

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<sup>3</sup>Oliver La Farge, Santa Eulalia, the Religion of a Cuchumatán Indian Town (Chicago: The University of Chicago Press, 1947), xii.

Coffee Council, in London, or a drop in the price of coffee on the New York exchange, may eventually affect the economy of a highland village.

One main connection with the national economy is found in the seasonal labor which Highland Indians perform in the coffee fincas at lower elevations. This practice of working outside the region during part of the year is more typical of some communities than of others, but it is common throughout the whole area. Although some individuals and communities have other sources of income outside the region, there is little doubt that work in the coffee fincas is the principal means by which money comes into the Highland region as a whole. This link with the national economy, it should be observed, is also a link with the international economy, since most of the Guatemalan coffee is produced for export.<sup>4</sup>

#### Rural Labor

During and after the conquest of Guatemala, the Spaniards faced three primary problems: control of the land, procurement of an adequate food supply, and the realization of a profit from agriculture and mining. Resolution of these problems was impeded primarily by the conqueror's aversion for manual labor and, later, by a dwindling labor force. An Old World institution, the encomienda, was therefore introduced. Lands were given in trust to individuals as rewards by the Crown, and included was the right to exact tribute from the Indian population. In return, encomenderos were to provide religious training and adhere to specific regulations regarding treatment of the Indians. The rules were easily circumvented or ignored, however, and the ensuing relationship between Spaniard and Indian was in many cases not unlike that of master and slave.

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<sup>4</sup>Sanford A. Mosk, "Indigenous Economy in Latin America," Inter-American Economic Affairs, Vol. 8, No. 3 (Winter, 1954), 19.



The encomienda was abolished by the Crown in 1720. But, by this time the encomenderos held a grip on the land and Indians so strong as to relegate the indigenous peoples to virtual serfdom. Despite royal decrees to the contrary, the colonists gradually evolved a method of coercion known as the mandamiento, by which the Indians, although paid, were forced to work for certain periods of time for landholders. A system of debt peonage thus developed whereby Indians were extended payment for work owed to the landlord. It kept the Indian permanently in debt, forcing him to labor, and provided land owners with a legal means to recover what was owed to them.

Slavery was abolished in Guatemala in 1824, an act of near insignificance to the Indian. A law prohibiting forced labor was enacted in 1837 but, since it did not apply to anyone in debt, labor coercion continued. The mandamiento was abrogated about 1894. In reality, the position of the Indian had changed little in three and one-half centuries, since new methods of labor control had been devised to supplant it. Debt peonage was common, but a more rigorous hold on labor was desired by some. This was perhaps due to continuous labor shortages. During the early 1900's the government grew concerned with the concurrent emigration of Indians to neighboring countries and the increased demand for labor with the rapid expansion of the coffee industry. Coffee interests acquired an important voice in politics, since taxes on coffee exports constituted a rising percentage of government earnings. Nevertheless, a series of laws were passed culminating in the abolition of debt peonage in 1934.



To assure an adequate labor supply, especially that engaged by coffee plantations, debt peonage was replaced by vagrancy laws. These laws required that the rural Indian must work at least 150 days per year and that he must carry a card to be checked by employers according to the number of days worked. Failure to meet the labor requirement was punishable by a minimum jail term of one month. Needless to say, the status of the rural Indian was not bettered; the method of enforcement was merely changed.

After some 400 years of labor coercion, the Constitution of 1945, following the overthrow of President Ubico, brought about the termination of forced labor. Coffee interests, however, insisted that they could not function without some control over labor. Although ostensibly outlawed, a covert control of labor has persisted to the present day in the guise of the colono system.

Under Presidents Arevalo (1945-51) and Arbenz (1951-54), rural labor unions developed rapidly. However, peasant illiteracy, values, animosity, and distrust, in addition to the resistance of landed interests, rendered effective union organization difficult. After initial organization, moreover, many local unions were left in the hands of inexperienced personnel. Union leaders concentrated first on government-controlled fincas and on a few selected private farms. By 1949 there were forty-six agricultural unions, with a combined membership of from 10,000 to 12,000 workers.<sup>5</sup> Yet, demands for higher wages often met

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<sup>5</sup>Archer C. Bush, Organized Labor in Guatemala, 1944-1949 (Hamilton, New York: Colgate University, 1950), 43.

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with failure, or only partial fulfillment, due largely to the resistance of the finquero. More success was achieved through pressure on the Congress to expropriate portions of unused land for settlement and to pass the Labor Code of 1947. The Code limited the power of landowners over the agricultural laborer and legalized unions on small fincas which previously could not legally be unionized.

In 1954 Carlos Castillo Armas led a revolt which overthrew the Arbenz regime and the rural union leaders. He revoked the Agrarian Law of 1952 and returned land expropriated under it to the former owners. Labor suffered a severe setback, because nearly all union leaders were suspected of communist leanings.

Whereas in 1954 there were some 330 unions with a membership of 107,000, a year later the number dropped to 27 with a mere 27,000 members. Labor leaders -- those allowed to operate -- clamored for the abolition of the NDCAC [National Defense Committee Against Communism], classifying it as a union-breaking device that served the interests of the United Fruit Company and the Association of Guatemalan Agriculturalists. But their protests fell on deaf ears. Finally, in May 1957 labor leaders threatened to withdraw support from the government if it persisted with its antilabor measures. It was undoubtedly pressure from the Regional Inter-American Workers Organization that forced the dictator to comply. In mid-1957 he accepted such measures as the minimum wage law and the right of agricultural workers to form unions.<sup>6</sup>

Political turmoil followed the assassination of Castillo Armas in 1957. The recent history of rural unionism in Guatemala remains to be analyzed, but it seems safe to assume that little significant progress has been made toward improving the life of the rural worker.

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<sup>6</sup>Mario Rodríguez, Central America (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), 28.

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Workers on coffee fincas today can be classified into two general categories, the colono, or permanent worker, and the seasonal or migratory laborer. The colono resides on the finca year-round, providing a minimum labor supply. A small plot of land for subsistence crops is usually reserved for the colono. He is part of the finca and in numerous instances, having been born on the same finca as his parents, knows no other life. The migratory laborer, on the other hand, commonly lives in highland Indian villages and resides on the finca only during the coffee harvest. The off-season of highland Indian agriculture more or less coincides with the coffee harvest, thus fitting into the economic schemes of both the Indian laborer and the finca manager.

From September through November and part of December each year, there is a brief intermission in the local agricultural activities and at this time many Chimaltecos begin their long eight day trek to the Pacific coast to work as harvest hands on the large coffee plantations.<sup>7</sup>

The extended coffee harvest season gives the migratory laborer flexibility in terms of his own agricultural pursuits and also provides an opportunity to work for longer periods of time, often on more than one finca. Housing for seasonal workers tends to be poorer than that provided for colonos. Families, for example, may or may not be housed in separate units. Sanitary conditions are frequently poor or non-existent. The migrant, however, often receives a higher wage than the colono because of the more urgent demand for labor at harvest time and because the facilities provided to him are inferior to those of the colono. Occasionally, migratory workers also secure plots of land for

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<sup>7</sup>Charles Wagley, "Economics of a Guatemalan Village," Memoirs of The American Anthropological Association, Vol. 43, No. 58 (1941), 30.

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private use on the promise that they will return for the harvest each year. Such plots are not necessarily part of the finca proper and may, in fact, be located in the highlands where the finquero has obtained them specifically for that purpose.

Despite the crucial importance of labor to the coffee producers, and thus indirectly to the national economy, the subject is little studied. In Guatemala, labor may account for 50 percent of a grower's operating costs, and in 1959 it was reported that labor costs "generally constitute over 70 percent of all current operating costs in Latin American coffee growing."<sup>8</sup> Wages, nevertheless, are extremely low. In 1967, for example, the wages of migratory workers on the Guatemalan coffee farms examined by Schmid averaged seventy-five cents per day.<sup>9</sup> The apparent discrepancy of high labor costs and low wages is explained by low labor productivity.

It is frequently suggested that labor productivity is low because wages or real incomes are low, and vice versa. If so, how did the cycle begin? Schmid states that historically "there was no need to pay high wages, since non-economic forces [encomienda, mandamiento, vagrancy laws, etc.] were used to persuade workers to engage in work on the fincas. . . ." And, "even where economic forces did operate, most

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<sup>8</sup>Onno Van Teutem, "Coffee in Latin America: The Producers' Problem," Economic Bulletin for Latin America, Vol. 4, No. 1 (March, 1959), 37.

<sup>9</sup>Lester Schmid, "The Productivity of Agricultural Labor in the Export Crops of Guatemala: Its Relation to Wages and Living Conditions," Inter-American Economic Affairs, Vol. 22, No. 2 (Autumn, 1968), 34.

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employers believed that higher wages would tend to reduce the length of time the Indians would work, since they could then pay their debts or make necessary purchases with less work."<sup>10</sup>

The backward-bending supply curve for labor, if one actually exists, can be countered by education and a ready supply of (and real incentives to purchase) manufactured items and foods. Schmid cited one finquero, for example, who provided items such as radios, cameras, and flashlights at cost to laborers, thus encouraging them to work more diligently through the desire to purchase these goods.<sup>11</sup>

Wages, will probably be increased only if accompanied by a rise in general agricultural production, by increases in worker productivity, and by the competition of alternate sources of employment. Minimum wage laws are another means of raising wages, but to legislate and effect such laws is not at present politically feasible. Real wages, moreover, are not likely to increase significantly without gains in labor productivity.

Labor productivity varies from farm to farm. Schmid found that it took from 11 to 28.6 man-days to produce 100 pounds of coffee en oro in Guatemala and, further, that yields per unit area varied directly with the productivity of labor.<sup>12</sup> Van Teutem, speaking of Colombia, likewise reported a "close connection between yields and labor productivity."<sup>13</sup>

<sup>10</sup>Ibid., 35.

<sup>11</sup>Ibid., 43.

<sup>12</sup>Ibid., 37.

<sup>13</sup>Van Teutem, 37.





He noted a differential of labor productivity 2.5 times as great for high yielding farms as for low yielding farms and suggested that:

The magnitudes of these differences in productivity between important sections of existing coffee plantings, in a country of relatively homogeneous production methods, show that the productivity structure of coffee growing is more varied, and may well be more flexible, than is sometimes supposed.<sup>14</sup>

Since the productivity of rural labor is vital to the coffee industry, and to the economic development of Guatemala, it constitutes a topic in great need of investigation. Better food, improved housing, and transportation are among factors held by Guatemalan farmers to be useful in increasing labor productivity.<sup>15</sup> For example, increased labor productivity on coffee fincas will probably increase yields. Due to the quota imposed upon each coffee farm, and idle land taxes, the increased yields will release land for other crops. Simultaneously, productivity will with campaigns and legal incentives boost wages, thereby creating a market for food and manufactured items. This new demand, in turn, might stimulate agricultural production and help to improve productivity. Increased agricultural productivity will spur farm incomes and, a la the Lewis model, overall wages. Thus, acknowledging over-simplification and untried assumptions, it appears likely that a stimulation of productivity and wages on coffee fincas could have far-reaching benefits for the economy in general.

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<sup>14</sup>Ibid., 37.

<sup>15</sup>Schmid, 39-40.

Page 1

Page 2

Page 3

Page 4

Page 5

Page 6

Page 7

Page 8

Page 9

Page 10

Page 11

Page 12

Page 13

Page 14

Page 15

### Agrarian Reform

Except with regard to labor and to the National Fincas, the coffee industry in Guatemala has not been greatly affected by agrarian reform. In fact, little widespread or permanent change resulted from the numerous reform laws enacted from 1825 onward. Since 1956, moreover, agrarian reform has focused almost exclusively upon the colonization of land acquired by the government, the formation of rural cooperatives, and the erratic programs of the Fincas Nacionales.

Colonization projects, generally, are not located in the coffee producing zones. In a few instances coffee trees were eradicated and other crops substituted by squatters who subsequently became legal settlers. Only small, commercially insignificant amounts of coffee are grown in some of the so-called "zones of agricultural development." Moreover, due to capital requirements, the length of time prior to financial returns, relatively extensive land-use, and a national policy of not planting new lands to coffee, production of the beverage crop does not lend itself to colonization projects.

There are about 200 active agricultural cooperatives in Guatemala. The exact number fluctuates as new cooperatives are formed, others become defunct, and still others lapse into inactivity. Most of the cooperatives are encharged to the Departamento de Cooperativas Agrícolas of the Ministry of Agriculture. About ten, however, are under the jurisdiction of the Instituto de Transformación Agraria (INTA), and some thirty-four in the Petén are under the Fomento y Desarrollo Económico del Petén (FYDEP).

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

Cooperatives for which coffee is the chief crop are administered by ANACAFE. The program of the Association has grown from three cooperatives in 1964 to thirty-three in 1969. One man, trained in cooperative concept and function, is employed by ANACAFE to work directly with these cooperatives. Other technicians are involved in the dissemination of information, cultivation practices, pest and disease prevention, and the planning and construction of small *beneficios húmedos* for individual cooperatives. The cooperatives are designed principally for the sale of coffee, although the purchase of fertilizer and the extension of credit are also important functions of some cooperatives. The small coffee producer is in an unenviable position for selling. Since the cherries must be processed soon after picking, the small grower, having neither *beneficio* nor means of transport, must sell quickly to a local buyer or transporter. Obviously, this allows little opportunity for bargaining. A cooperative can greatly improve the situation by constructing a small *beneficio húmedo* so that the coffee can be processed and then stored or transported for a more advantageous sale. The cooperative can also help by purchasing a truck for the rapid transport of cherry coffee.

Each cooperative, rather than each producer, receives an annual quota. Some coffee interests, in collusion with cooperative directors, use the group quota as a political and/or economic device. Since individual cooperative members do not receive individual quotas, they are not registered with ANACAFE. This situation permits the cooperative director to inflate falsely the number of members and amount of



production, thereby obtaining a larger quota than the cooperative members require. This enables the director to sell the "extra quota" to coffee buyer-exporters, who use the quota to export what is otherwise non-quota coffee purchased at relatively low prices. Another problem is that a cooperative director may "sell" the political votes of the members, and it is felt by some that these malpractices undermine faith in cooperatives. Those concerned are attempting to have cooperative members registered and assigned quotas individually, while still retaining the cooperative as a functional entity.

Coffee cooperatives, their locations, effective quotas, and beneficio facilities are listed in Table 10. None of the coffee cooperatives have a beneficio seco, and one, in La Unión, Zacapa, prepares coffee by the dry method and consequently markets unwashed coffee. Map 4 shows the locations of coffee cooperatives administered by ANACAFE as of June, 1969. It is evident from the map that coffee cooperatives are found in all of the major coffee zones except Cobán. A number of National Fincas have been established as cooperatives, particularly in the Cobán district. These, however, are not under the jurisdiction of ANACAFE and, because of their uncertain future, are treated in this study as National Fincas. Also apparent from Map 4 is the fact that those cooperatives without beneficios húmedos tend to be located in the east, an aspect typical of this area.

TABLE 10

## COFFEE COOPERATIVES OF ANACAFE AS OF JUNE, 1969

	Cooperative	Year Founded	Municipio	Department	No. of Members	Effective Quota 1/ Hémedo	Beneficio Hémedo
1.	San Jose El Obrero	1964	La Libertad	Huehuetenango	79	984	+
2.	San Pedro Necta	1964	San Pedro Necta	Huehuetenango	718	6,532	+
3.	San Antonio	1966	San Antonio Huista	Huehuetenango	358	2,387	+
4.	Rfo Azul	1968	Jacaltenango	Huehuetenango	40	303	+
5.	Nuestro Futuro	1969	La Democracia	Huehuetenango	24	296	+
6.	Hoja Blanca	1969	Cuilco	Huehuetenango	29	500	+
7.	Nuevo Progreso	1965	Nuevo Progreso	Huehuetenango	252	11,843	+
8.	San Pablo	1966	San Pablo	San Marcos	63	3,964	+
9.	El Tumbador	1967	El Tumbador	San Marcos	34	1,646	+
10.	La Reforma	1967	La Reforma	San Marcos	41	2,476	+
11.	Grano de Oro	1968	Catarina	San Marcos	24	734	+
12.	El Quetzal	1969	El Quetzal	San Marcos	20	1,013	+
13.	Las Cabezas	1966	Oratorio	Santa Rosa	185	125	+
14.	La Abundancia	1968	Nueva Santa Rosa	Santa Rosa	45	790	+
15.	El Naranjo	1968	Santa Cruz Naranjo	Santa Rosa	45	2,184	+
16.	La Fé	1969	Nueva Santa Rosa	Santa Rosa	30	1,200	+
17.	San Lucas	1964	San Lucas Tolimán	Sololá	75	3,591	+
18.	Nahulá	1965	Nahulá	Sololá	64	514	+
19.	Santa Catarina	1965	Santa Catarina Ixt.	Sololá	56	1,369	+
20.	Pasacul	1966	Santa Catarina Ixt.	Sololá	38	1,082	+
21.	Acatenango	1966	Acatenango	Chimaltenango	70	3,355	+
22.	La San Pedrana	1967	San Pedro Yepocapa	Chimaltenango	122	4,072	+
23.	David Snyder	1965	San Vicente Pacaya	Escuintla	50	1,313	+
24.	La Ceiba	1967	Palín	Escuintla	77	1,582	+
25.	Taltut	1966	Génova	Quezaltenango	150	8,390	+
26.	Morazán	1969	Génova	Quezaltenango	35	1,200	+
27.	El Asintal	1967	El Asintal	Retalhuleu	66	1,365	+
28.	El Triunfo	1968	San Sebastián	Retalhuleu	47	271	+
29.	La Libertad Canaleña	1968	Villa Canales	Guatemala	22	314	+





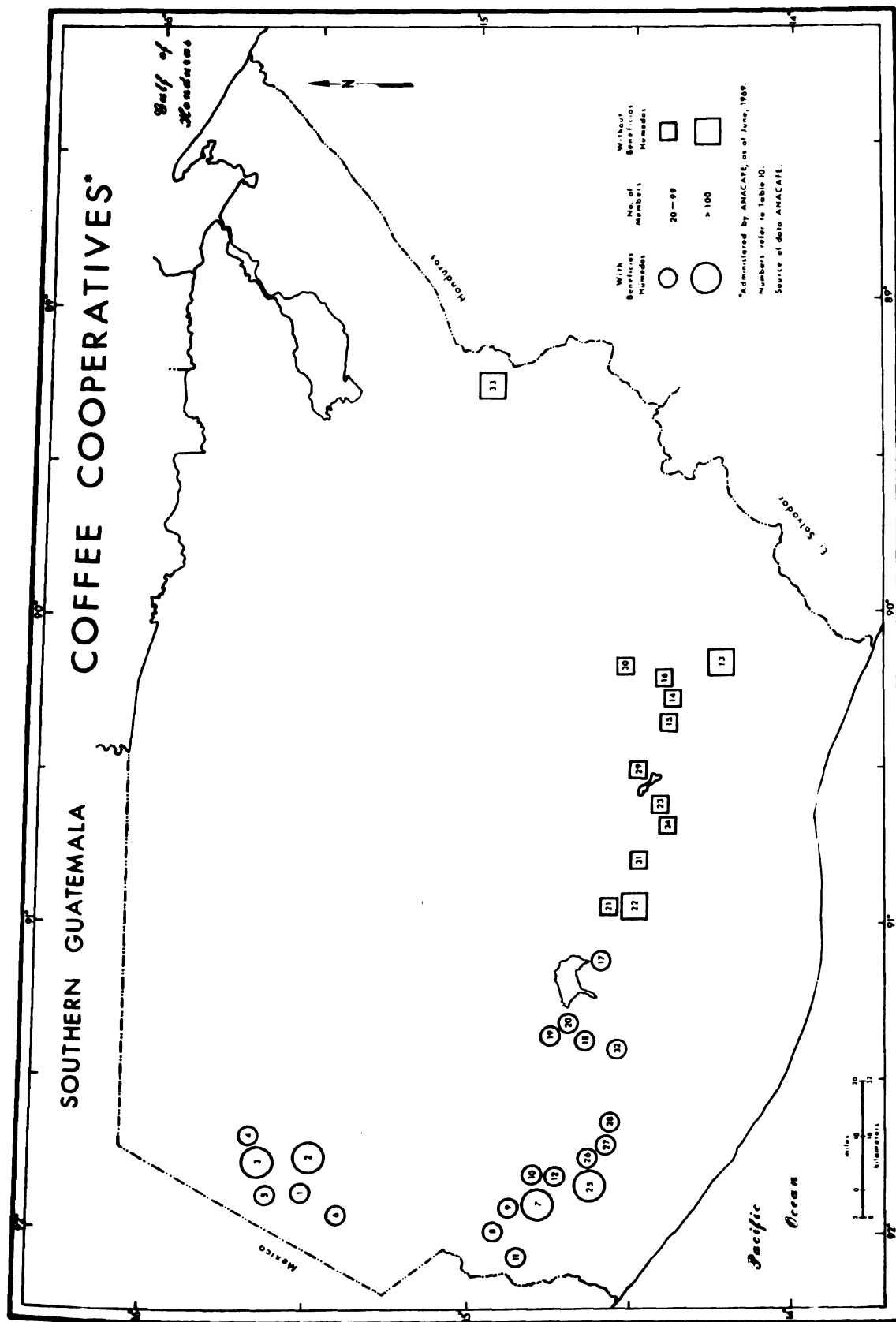
TABLE 10--Continued

	Cooperative	Year Founded	Municipio	Department	No. of Members	Effective Quota 1/	Beneficio Húmedo
30.	Las Brizas	1967	Mataquescuintla	Jalapa	70	666	
31.	La Sanjuanerita	1968	Alotenango	Sacatepéquez	26	358	
32.	La Antoreha	1969	San Antonio Such.	Suchitepéquez	24	314	+
33.	La Unión	1965	La Unión	Zacapa	187	2,300	
TOTAL					2,866	69,023	

1/ Quintales oro

Source: ANACAFE.





Map 4



The National Fincas comprise all of the state-owned agricultural holdings acquired to increase the production of specific crops, and those later acquired by expropriation from German citizens during World War II. These Fincas are the responsibility of the Instituto Nacional de Transformación Agraria (INTA), whereas units transferred to individuals, banks, or institutions are apparently no longer considered Fincas Nacionales even though sometimes referred to as such. Twenty-one of the twenty-four Fincas produce coffee. For the five years 1963/64-1967/68, they produced an average of 57,512 quintales of coffee in pergamino, or about 3.3 percent of the national total (Table 11). The total area planted to coffee on the Fincas was 12,677 acres. The yields of six Fincas compare favorably with the average 1966/67 yield of 5.2 quintales per acre (9/manzana) for all fincas registered with ANACAFE, the latter representing over 90 percent of all coffee produced in Guatemala. In general, those Fincas producing the least coffee tend also to have lower yields. Map 5 presents the locations of the National Fincas which produce coffee.

Most of the National Fincas have beneficios húmedos, while only five, Chicolá, Candelaria Xolhuitz, Las Mercedes, Morelia Santa Sofía, and Chimax have beneficios secos. The Fincas with beneficios secos usually process the coffee, if it is not sold in pergamino, of the nearest National Fincas without such facilities. According to law, coffee from the Fincas must be sold at public auction.

TABLE 11

COFFEE PRODUCTION ON FINCAS NACIONALES: 1963/64-1967/68  
FIVE YEAR AVERAGE

	Production (a)	Area (b)	Yield (c)
1. Chocolá	18,878	3,609	9.0
2. La Fortuna (Chocolá Annex)	96	18	9.1
3. El Engaño (Chocolá Annex)	37	12	5.3
4. Las Mercedes	9,484	1,655	9.9
5. Candelaria Xolhuitz	7,750	1,375	9.7
6. Pensamiento Palmira	5,922	1,359	7.5
7. Morelia Santa Sofia	4,947	1,411	6.1
8. Campur	2,541	1,011	4.3
9. La Montaña	1,540	263	10.1
10. El Eden Xolhuitz	1,417	265	9.3
11. Las Camelias Xolhuitz	1,319	317	7.2
12. San Vicente	901	461	3.4
13. El Carmen Villa Seca	860	249	6.0
14. Saxoc	462	159	5.0
15. La Montaña	440	109	7.0
16. El Carmen Tajumulco	329	120	4.7
17. Chipiop	286	104	4.8
18. La Providencia	118	97	2.1
19. Chuchupa	75	31	4.2
20. Candelaria Panán	61	33	3.2
21. Chimax	50	18	4.8
Totals	57,513	12,676	---

(a): in quintales pergamino (one quintal equals about one cwt.)

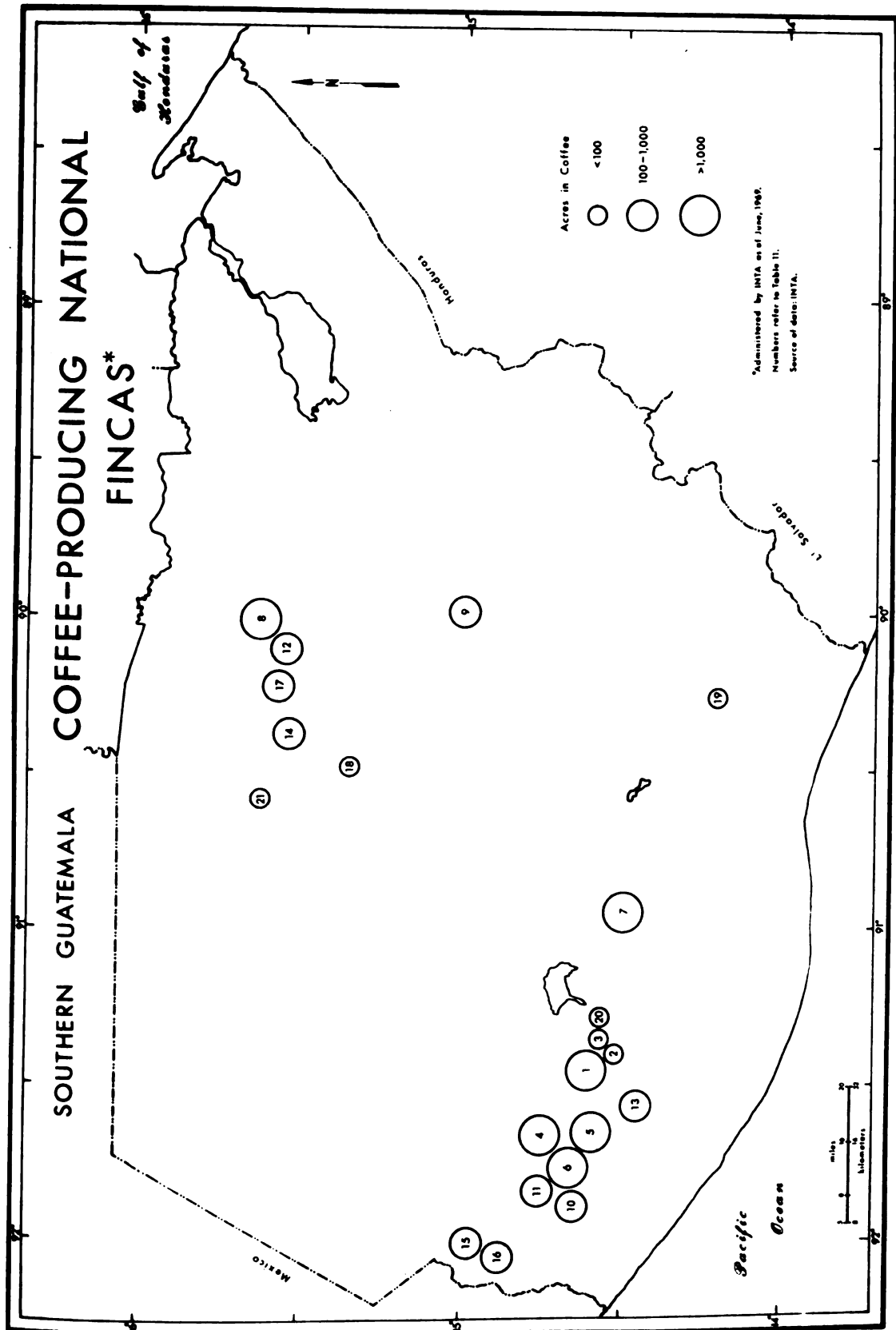
(b): in acres.

(c): (a)/(b).

Source: Instituto Nacional de Transformación Agraria (INTA).

#### Institutional Aspects

The National Coffee Growers Association, the ANACAFE-FAO Diversification Project, and the Ministry of Agriculture, through their many sub-agencies and departments, function as mechanisms for research and policy implementation. To a significant degree these institutions also propose and formulate policy related to coffee. And, although not



Map 5



particularly important specifically to coffee at this time, the Central American Common Market may eventually play a key role in coffee research and strategy in the member countries. The destiny of the Guatemalan coffee industry rests in large part with the continued success of these institutions.

#### Asociación Nacional del Café (ANACAFE)

The Oficina Central del Café, forerunner of ANACAFE, was created in 1928. It was reorganized several times, and its status vis-a-vis the Ministry of Agriculture fluctuated. During World War II the Oficina controlled and conducted the business of the expropriated fincas. However, it proved less than satisfactory and in 1960 was absorbed by the Oficina Contralora del Café, which submitted a proposal to the National Congress for the creation of ANACAFE. By Decree 1397, ANACAFE was established on November 4, 1960.<sup>16</sup>

The varied and far-reaching functions of ANACAFE render knowledge of that institution essential to an understanding of the Guatemalan coffee industry. The Association has virtually exclusive de facto control of the nation's greatest source of income. The primary objective of ANACAFE is to foster and protect that part of the national economy concerned with coffee production and coffee producers. It is charged with providing technical services for research, experimentation, demonstration, assistance, and promotion, and is also responsible to organize

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<sup>16</sup> Memoria de las labores realizadas por la Directiva de la Asociación Nacional del Café (Guatemala: ANACAFE, May 1961), 5.

services of credit, testing, arbitration, registration, and statistics. Exclusively, the Association is authorized to distribute quotas to producers and to regulate exports. It also represents Guatemala officially in international coffee affairs.

The Association is a non-profit corporate entity, supported by membership fees and coffee export taxes. Membership is open to all coffee producers, who must register to obtain a quota. All buyers, exporters, and roasters are obligated to register with ANACAFE, although they are not members as such. Within the organization, primary authority rests with a board of directors elected by the grower-members. Voting is based upon production, rather than one-vote-per-member, larger producers enjoying a greater number of votes. The board of directors elects the president and vice president of the Association. The president, along with the Ministers of Agriculture, Economy, Finance and Public Credit, Foreign Affairs, and the President of the Monetary Committee, comprise the Coffee Policy Council. The Council is presided over by the Minister of Agriculture for purposes of orientation, development, and execution of domestic and foreign policy in matters pertaining to coffee.

ANACAFE encourages the establishment of regional organizations, with the result that each important coffee-producing region has such an organization. The purpose of a regional group is to deal with local problems, improve roads, petition institutions or government agencies for assistance, pool resources, disseminate information and organize courses. The two largest regional organizations, each of which includes

smaller sub-regional groups, are La Asociación de Caficultores del Oriente de Guatemala (ACOGUA) and La Coordinadora de Asociaciones y Regionales de Caficultores del Occidente de la República (CARCOR). These two organizations, particularly the former, exert considerable influence on regional and national politics. In 1968, for example, the International Coffee Organization levied a coffee export tax of sixty cents per bag to form a fund for diversification projects and research. The Guatemalan government indicated that the producers would pay this tax, whereupon ACOGUA undertook a lengthy campaign, with full-page newspaper ads, car bumper stickers, posters, and speeches, to have the burden of this new tax borne by the government. The organization eventually won its point. ACOGUA has greater resources at its disposal than other regional groups, in part because its members include a large number of wealthy coffee growers. However, it also appears to be more progressive, better organized, and more capable of managing its interests. Within ANACAFE the various regional groups form coalitions and power blocks, for purposes of elections and policy decisions, with the result that CARCOR and the Cobán and Huehuetenango groups are often pitted against ACOGUA.

To perform its many functions, ANACAFE is organized internally into ten departments: Administration, Inspection, Accounting, Treasury, Testing, Statistics, Publications, Agricultural Affairs, International Affairs, and Economics. In 1968, the Department of Economics was discontinued, perhaps permanently. A new department, under the proposed name of Crop Diversification, was created in 1969. The duties of most

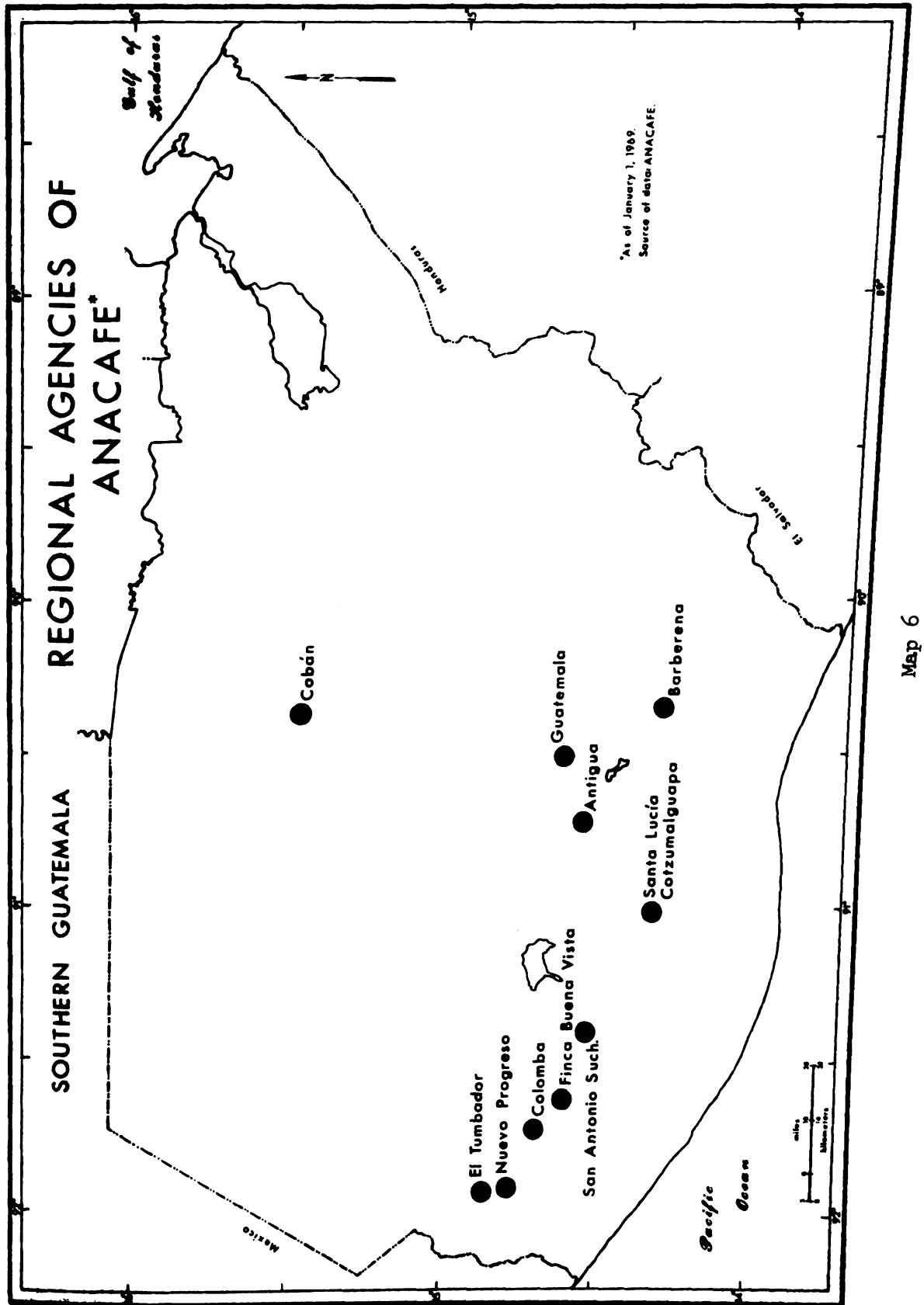


departments are obvious from the titles. The responsibilities of the Departments of Agricultural Affairs and Inspection are not, however, prima facie evident, and their roles are pertinent to this study.

The Department of Agricultural Affairs is involved largely with direct services to coffee growers. The cooperative program, for example, is accommodated through this department. Meetings are held for purposes of instruction, and short courses on agricultural topics are offered. Technical assistance is provided for a wide range of items, including advice on fertilization, improved seeds, grafting, processing, shade, and cultivation, both independently and in collaboration with the Ministry of Agriculture, the University of San Carlos, and other institutions and agencies. The formulation of annual pre-harvest estimates is yet another task fulfilled by the department.

The services of the Department of Agricultural Affairs are accomplished by several persons working in the main office in Guatemala City, but also playing a vital role are personnel of the regional offices. The Department of Agricultural Affairs maintains ten regional offices, each staffed with a trained agent and a secretary who maintain radio communication with the central office in the capital. One trained agent is stationed in the central office and is in charge of all small producers, namely those producing less than fifty quintales oro per year. Others are located in El Tumbador, Nuevo Progreso, Colomba, San Antonio Suchitepéquez, Santa Lucia Cotzumlaguapa, Antigua, Barberena, Cobán, and on the ANACAFE Finca Buena Vista, near Retalhuleu (Map 6). The agency at Barberena has not been staffed in recent years, its duties





Map 6

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being assumed by the agent in Antigua. In 1969, however, the agency at Antigua was closed and that agent moved to Guatemala City, where he continues to handle both areas. The locations of the agencies were chosen on the basis of three criteria: the number of fincas to be served by each agent, the total production of these fincas, and the distance from the agency site to the most distant farms served. In most cases the distance is less than 12.5 miles. The agent in Cobán is required to travel much farther, however, since the coffee fincas in this area tend to be more dispersed.

The Department of Agricultural Affairs has worked closely with the FAO-Diversification Project and has administered the Finca Buena Vista since it was purchased by ANACAFE in 1967. The Finca, located in the Municipio of San Sebastián, Retalhuleu, is used for research and experimentation, particularly with regard to crop diversification. The newly created Department of Crop Diversification will likely assume responsibility for collaboration with the Diversification Project and for administering the Finca Buena Vista.

The Department of Inspection is designed to conduct field investigations concerning claims or questions of quotas, quality and quantity of production, stocks, etc. The inspectors are, in addition, responsible for the registration of all coffee producers, a responsibility which has occupied nearly all of the ten-man staff for several years. The larger producers are registered, but an estimated 25,000 or more small producers are proving difficult to register, although progress is being made. The latter are chiefly Indians, living in remote areas and sometimes reached

only by foot or horseback. The inspectors arrange central meeting places with these small producers through local mayors, who inform the farmers when and where to meet the Inspectors for registration. The information gathered from the small producers must then be taken to Guatemala City for tabulation and calculation of the quotas. Finally, and again with a pre-arranged date and location, the inspectors return to give the quotas to the small coffee growers.

#### The ANACAFE-FAO Diversification Project

In 1964, ANACAFE and the Food and Agriculture Organization of the United Nations undertook a joint effort known as the ANACAFE-FAO Diversification Project. The Association, in this case, represents the Guatemalan government because the FAO requires contracts and working arrangements at the national government level. ANACAFE (not the government), however, shares the Project's financing with the FAO. Originally designed for four years, the Project has been extended for at least one year, to December, 1969.

The objective of the Diversification Project is "to determine by means of studies and investigations the areas where coffee is produced under marginal conditions and to recommend and demonstrate substitute crops for these areas."<sup>17</sup> It was originally thought that:

Among the areas which should be considered for retirement of coffee is the lower altitude coffee zone. The yields of coffee are high in this area but the type of bean produced is in surplus supply on the world market. In the other

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<sup>17</sup>Solicitud de Guatemala, al fondo especial de las Naciones Unidas para la diversificación de cultivos en las áreas del país en las que actualmente se cultiva café en condiciones económicamente marginales (Guatemala: ANACAFE, February, 1963), 1.

extreme, coffee at the higher elevations has excellent quality, but the yield is so low that there is little financial return to the producer. Both zones are considered economically marginal.<sup>18</sup>

Subsequently, it was decided to give priority to the lower altitudes where the problem of marginal coffee production was thought to be more critical. Initial research to define marginal areas, however, indicated that coffee is not widely produced in such areas, in Guatemala. That is, the physical environment of nearly all areas currently under coffee were found to be suitable for profitable coffee production. Where production is marginal, poor management is usually a much more important factor than the physical environment. Nevertheless, the Project is, by definition, geared toward diversification in areas originally thought to be marginal. This fact accounts for the general location of pilot programs and the choice of substitute crops or agricultural activity.

FAO-ANACAFE investigators have established five pilot studies. An African oil palm pilot program is conducted in two 125-acre areas, one in the Department of Retalhuleu and the other in the Río Polochic Valley. To date the program has developed well and demonstrates genuine potential. A tea pilot study is well established on 500 acres near Cobán. It is hoped that the tea can be sold to other countries of the Central American Common Market. A citrus and tropical fruit scheme covers 3,000 acres near Coatepeque and is developing satisfactorily. A dairy program near Retalhuleu is underway, albeit at a somewhat slower pace. Cheese, a

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<sup>18</sup>"Request of the Government of Guatemala for Assistance in Promoting Crop Diversification in Marginal Coffee Areas," (ANACAFE: c. 1962), 1. (Mimeographed.)

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product consumed by Indians and ladinos alike, is being emphasized. Finally, and progressing most slowly, is the beef livestock pilot project located along the Pacific slopes between Coatepeque and Escuintla.

In addition to, and sometimes in collaboration with, the Diversification Project, ANACAFE works with government agencies and individual farmers in efforts to diversify production. Substitute crops include rubber, vanilla, cardamom, pepper, yams, macadamia, and fruits. Complaints of apathy are frequently leveled at coffee farmers. It is said that since Guatemala has always been able to sell all of its coffee at profitable prices, growers are difficult to convince of the need for crop diversification. Excitement is generated when a coffee surplus appears imminent, but fades quickly as stocks are depleted. Some Project personnel argue that besides the concentrated efforts to demonstrate and assist with alternative crops, or "pull factors", the encouragement of "push factors" is needed in the form of accumulating coffee stocks in Guatemala. If this "theory" is well founded, and it seems to have merit, the International Coffee Organization was actually at odds with itself when it granted a higher basic export quota to Guatemala in 1968. Yet, quotas for fincas and restrictions against planting new areas to coffee have prompted the more aggressive farmers to intensify production of coffee on part of their property, while freeing the remaining workable land for other crops. Progress toward a more diversified agriculture and economy is evidenced by a declining percentage of total national exports accounted for by coffee.

### The Ministry of Agriculture

In addition to the experimentation and research conducted by ANACAFE and pilot programs of the Diversification Project, the Ministry of Agriculture maintains a research station at the Finca Chocolá which deals primarily with coffee. Chocolá is one of the large Fincas Nacionales administered by INTA and is located in the Municipio of San Pablo Jocopilas, Suchitepéquez. The research station facilities are like a small island on the Finca, consisting of several buildings, seed-beds, plots for seedlings, trees, other crops and equipment. One of the exciting pieces of research being conducted there is the grafting of roots from the hardy robusta variety to the higher quality and preferred bourbon species in an apparently successful effort to combat root diseases.

### The Central American Common Market

Coffee is not likely to play an important role vis-a-vis the Central American Common Market (CACM). Along with cotton and sugar, trade restrictions on coffee are likely to continue indefinitely.<sup>19</sup> If the CACM continues to develop, however, it is possible that the member countries may decide to apply for group membership in the International Coffee Agreement, as provided under Article 5. Among the requirements for group membership, the countries must exhibit a "common or co-ordinated commercial and economic policy in relation to coffee." This

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<sup>19</sup> Roger D. Hansen, Central American Regional Integration and Economic Development, National Planning Association: Studies in Development Progress, No. 1 (Washington, D. C.: National Planning Association, 1967), 25-6.

constraint would seem to put such a move a long way off. A more likely possibility, and perhaps the only one with regard to coffee in the CACM, is the coordination of research, including international experiment stations and cooperative investigations. Some discussion of the coordination of agricultural research has already taken place. This, too, appears destined for the distant, rather than the immediate, future.

## CHAPTER V

### THE LOCATION OF COFFEE PRODUCTION

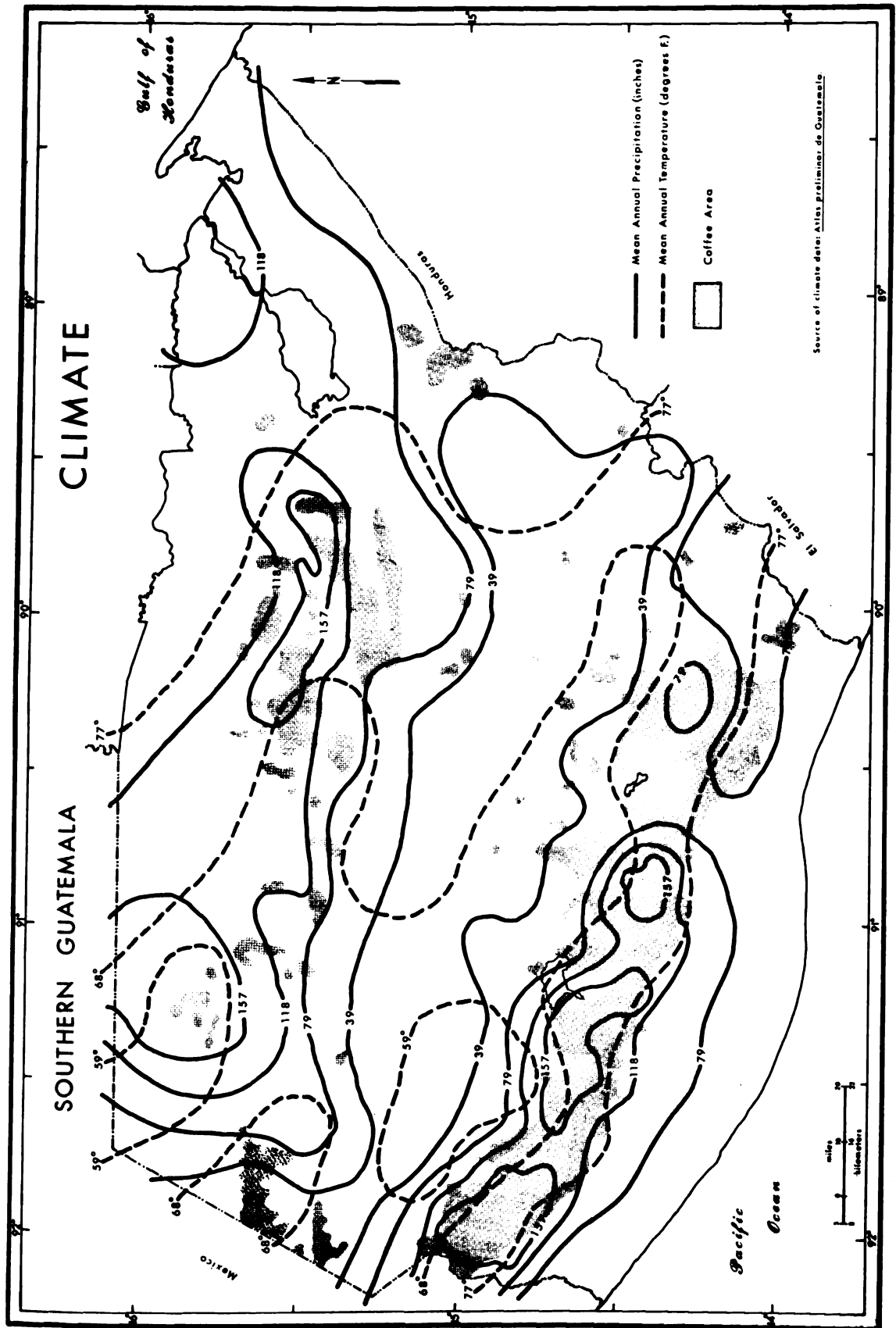
The location of coffee production in Guatemala is dependent upon a number of environmental and economic factors. Although the coffee plant can thrive under a wide range of climatic conditions, it cannot endure extremes of temperature or drought. Other factors, such as soils, topography, altitude, and tree variety also limit the areas suitable for coffee production. Economic considerations further restrict the areas of profitable cultivation, but to a lesser degree.

#### Physical Factors of Location

In Guatemala, coffee production occurs in areas receiving less than 60 inches to over 200 inches of annual precipitation. A range from 70 to 150 inches, however, includes most producing districts. (Map 7). Within these limits, annual distribution and type of precipitation are more important than total amount. A well-defined dry season, for example, is conducive to higher quality. Light rains or drizzle are preferred to torrential downpours.

The other major climatic variable, temperature, is inversely related to altitude. That is, temperatures decrease with increasing elevation above sea level. Most Guatemalan coffee is grown between 1,500 and 5,000 feet, with mean annual temperatures in the 60's and 70's





Map 7

Page 1

Page 2

Page 3

Page 4

Page 5

Page 6

Page 7

Page 8

Page 9

Page 10

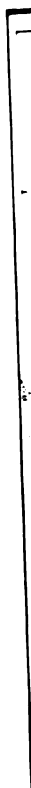
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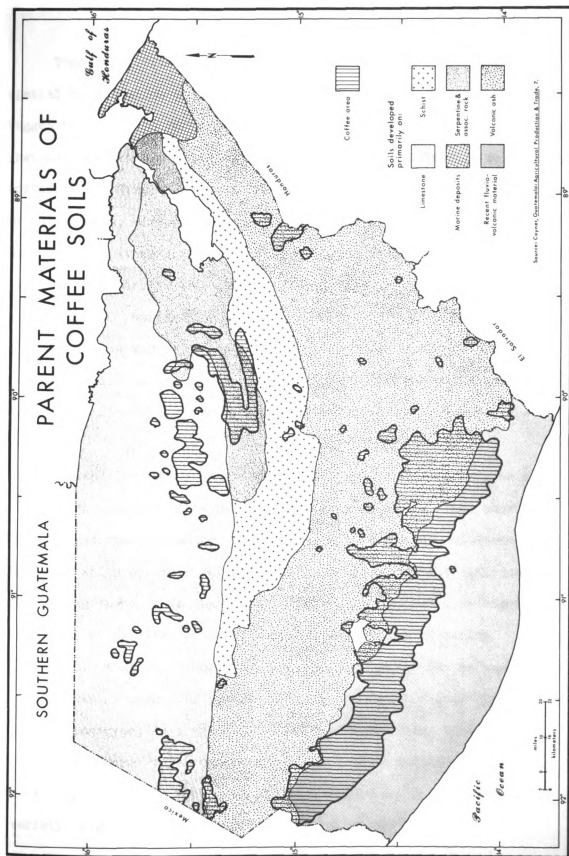
Page 12

Fahrenheit and annual precipitation of from 70 to 150 inches. Coatepeque and Mazatenango, at 1,600 and 1,200 feet respectively, are located near the lower limits of coffee production on the Pacific piedmont and have average annual temperatures of about 79°F and annual precipitation levels of about 120 inches. Cobán and Antigua, on the other hand, are located at altitudes of about 4,400 and 5,000 feet, with mean annual temperatures of around 65°F. Cobán receives about 95 inches of precipitation annually, while Antigua receives 45 inches.

A light, deep and fertile soil, with porous subsoil, is optimal for the coffee tree. This type of soil has developed from the volcanic material on the Pacific piedmont and is counted among the finest coffee soils in the world. Map 8 shows the principal coffee producing areas in Guatemala and the types of soil which characterize them. In general, coffee production appears to be far less restricted in areal extent by soil conditions than by factors related to climate.

Since coffee removes more nitrogen from the soil than any other major tropical crop, and more phosphoric acid and potash than most, fertilizers should be considered essential. Relatively little commercial fertilizer is used, however, on Guatemalan fincas. Humus and organic matter have been maintained chiefly through mulching. It is said that many coffee farmers do not wish to invest more than the minimum funds required to operate, but there is evidence to suggest that a more important reason for not using more fertilizer is that its application requires managerial skills which are in short supply. An overdose or mis-application can seriously reduce yields.

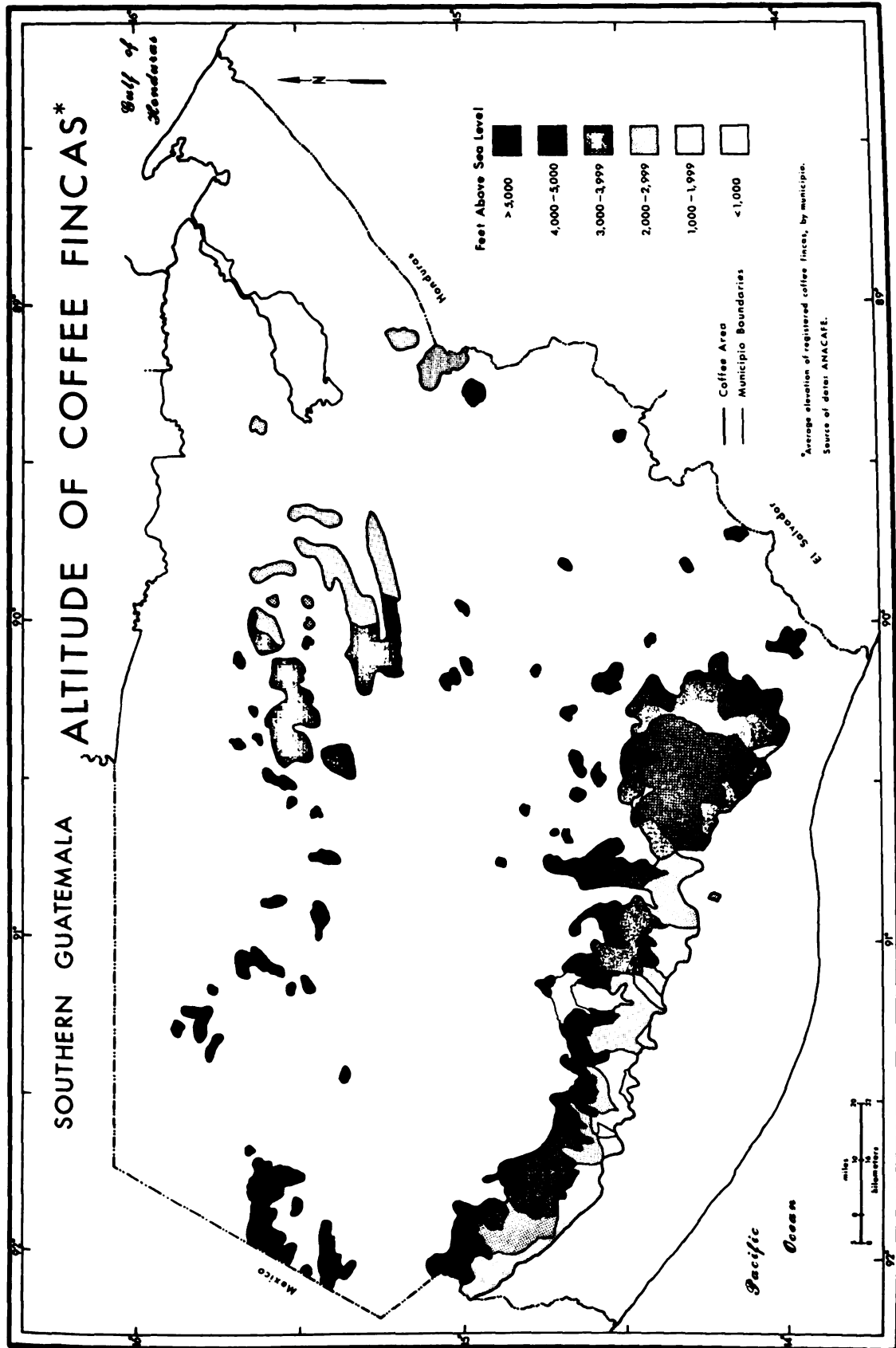




Map 8

Topography, like soils, does not significantly restrict the spatial distribution of coffee production, except in areas of extremely rugged terrain. In fact, within an appropriate climatic range, terrain that can support any other major commercial crop can usually be used for coffee. The effects of topography are more apparent with regard to ease in cultivation, harvesting, and transportation. Although pertinent data do not exist, it appears that labor costs are greater in areas of rugged terrain. Similarly, the threat of erosion is greater in steeply sloping areas. Harvesting is not only more difficult on rugged topography, but the varying elevations may also produce a less uniform bean size and quality. The harvest may be lengthened because of differential ripening at dissimilar elevations, necessitating more passes by the pickers.

Altitude is by far the most important characteristic of the natural environment influencing coffee production (Map 9). As noted above, temperatures, precipitation, and perhaps soils vary with altitude. The combination of these variables is probably what makes altitude the determining factor. In Guatemala, coffee is classified into eight commercial categories, seven of which are based upon elevation (Table 12). That is, commercial types are determined on the basis of altitude rather than tree variety or other characteristics. One of these, *Maragotype*, is a special, relatively unimportant variety of coffee. The term "type" connotes a difference in quality, based chiefly upon altitude according to the nomenclature in Table 12, while "variety" signifies the genetic composition of the plant.



Map 9

TABLE 12

## COMMERCIAL COFFEE TYPES IN GUATEMALA ACCORDING TO ALTITUDE

Type	Elevation in Feet
Strictly Hard Bean	over 4,500
Hard Bean	4,001-4,500
Semi-Hard Bean	3,501-4,000
Extra Prime Washed	3,001-3,500
Prime Washed	2,501-3,000
Extra Good Washed	2,001-2,500
Good Washed	below 2,000
Maragotype	---

For the purpose of grading or classifying beans for commercial transactions, current practice takes into account the shape, size, color, uniformity, and condition of the beans. The shape of a bean depends largely upon variety but seems to vary with location, perhaps reflecting changes in soil or climate. Bean size also depends upon variety. But, given the same variety, size increases with altitude and possibly with the length and distinctiveness of the dry season. Size increases only to about 4,500 feet, above which "Strictly Hard Bean" coffee is produced, and then decreases again. Other things being equal, the higher the altitude, the better the quality. The color of the bean varies regionally, and with altitude, and can be radically altered in the beneficio. Higher altitudes tend to produce a greenish-blue color, while lower elevations yield a clearer green. Uniform size and quality in a given lot of beans depend largely upon uniformity of altitude at the finca and uniform processing, given the same variety. The condition of the beans, of course, may also reflect disease or pest problems, soil deficiencies, and any damage incurred in processing.



Samples of coffee to be traded are brewed and tasted by an experienced coffee taster. First, the taster examines the roast. Under equal conditions low-grown beans roast more rapidly. Next, the aroma of the brew is sampled, the aroma of high-grown coffee being considered superior. Then, the beverage is tasted. The "body," acidity, and flavor also improve with increased elevation. As has been noted, however, high quality coffee depends not only upon altitude, but also upon soil, climate, management, maturity of the fruit when harvested, length of time between picking and depulping, processing, disease, variety, and storage conditions. Higher-grown coffees generally bring a better price, although yields are usually smaller. Low-grown coffee, conversely, is characterized by greater yields, lower quality, and lower prices.

Only three of the many species included in the genus Coffea are commercially significant: Coffea arabica, Coffea robusta or canephora, and Coffea Liberica. The latter is least significant world-wide and is unimportant in Guatemala. Robusta is produced almost exclusively in Africa and Asia, and in Guatemala is grown only on a few low-altitude fincas. The most widely grown species, arabica, accounts for the bulk of the world's coffee and nearly all of Guatemalan production. Arabicas are commercially divided into unwashed milds, such as are grown in Brazil, Bolivia, Paraguay, and Ethiopia, and milds from other Latin American countries and some African nations. The milds are of highest quality, commanding premium prices on the world market.

Coffee species are further divided into varieties. The two most common in Guatemala are bourbon and "typica." Guatemalans usually refer to typica as "arabica," even though typica is only one variety of arabica. The new leaves of "arabica" are bronze-tipped, while those of bourbon are light green-tipped. The arabica produces a larger bean and, therefore, is considered to be of a higher quality. Bourbon, on the other hand, is a higher-yielding, more vigorous and disease resistant variety, which appears to be gaining in popularity.

The characteristics of the bean are strongly influenced by variety. For example, arabica yields a larger bean than bourbon, and fincas at higher altitudes tend to grow arabica. Thus, the tendency for high-grown coffee to produce larger beans is complimented by the variety of tree (arabica) most commonly grown at higher altitudes. Small amounts of maragotype are grown for a special market in Belgium and Germany. The maragotype produces an extra large bean for which there is a good, but limited market. Several other varieties are also grown in Guatemala, but on a relatively limited scale.

#### Economic Factors of Location

The patterns of spatial distribution of coffee in Guatemala are relatively static. Most coffee farms were established many years ago, and there are legal prohibitions against planting new areas to coffee. Thus, land or the cost of land is but a minor factor in determining the location of coffee production, except perhaps in one sense. Although coffee is not widely grown on marginal land in Guatemala, an alternative

use of a given piece of land may at some time become more profitable. This is particularly true near the capital, where coffee lands have been put to urban or more intensive agricultural use. But this trend, to the extent it exists, is progressing very slowly. Land taxes are not great. Coffee remains a profitable crop, even when the land is farmed extensively and poorly managed, allowing the owner to live and work in Guatemala City. Neither transportation nor lack of markets appear critical.

A change from coffee to an alternative crop, in almost every case, would necessitate more careful management and more intensive use of the land, in addition to investment. Returns to the land would be increased in many cases. But, if the coffee farmer augments his income by working in Guatemala City, it appears probable that his total net income would actually decline from a change to another crop, with his working time devoted totally to farming. Since managerial skills are in extremely short supply, the hiring of a competent manager to operate the farm might be impossible or unjustified economically. This impediment to diversification can only be stated as an hypothesis, however, since more research is required for documentation. One method of encouraging diversification and the intensification of agriculture would be to institute an effective land tax. Diversification, in turn, would affect the spatial distribution of coffee production to a significant degree.

Labor, like the cost of land, does not appear to be a major locational factor for the coffee industry, except perhaps in the Cobán area.

Historically, labor has been cheap in the Verapaz zone relative to the Pacific piedmont. Soil fertility and other physical factors do not compare favorably with those of the western coffee areas, but cheap labor and a specialized German market are reasons why Cobán farmers continue to find coffee production profitable. If local costs were to rise to the same level as in the western coffee areas, coffee might become unprofitable. Guatemalan wages for rural labor are low, even as compared with other coffee producing countries in Latin America. The Guatemalan farmer, however, does not regard it in that manner. He sees labor as representing 50 percent or more of his operating costs, combined with low labor productivity.

Transportation, likewise, is only a minor factor in the location of coffee production in Guatemala. In fact, coffee (in pergamino) is probably the most easily transported of any major commercial crop. That is a prime reason why, historically, it was selected by pioneer farmers who required a marketable crop capable of withstanding, economically and physically, transportation to a distant market. Because of its transportability and relatively extensive use of land, coffee can be expected eventually to be "pushed" away from major cities by more intensive activities. This movement is, however, barely discernible at present.

In summary, physical factors seem to exert a greater influence upon the spatial distribution of coffee production than do economic factors. As the nation becomes increasingly developed, economic factors will inevitably increase in importance, and it appears likely that the

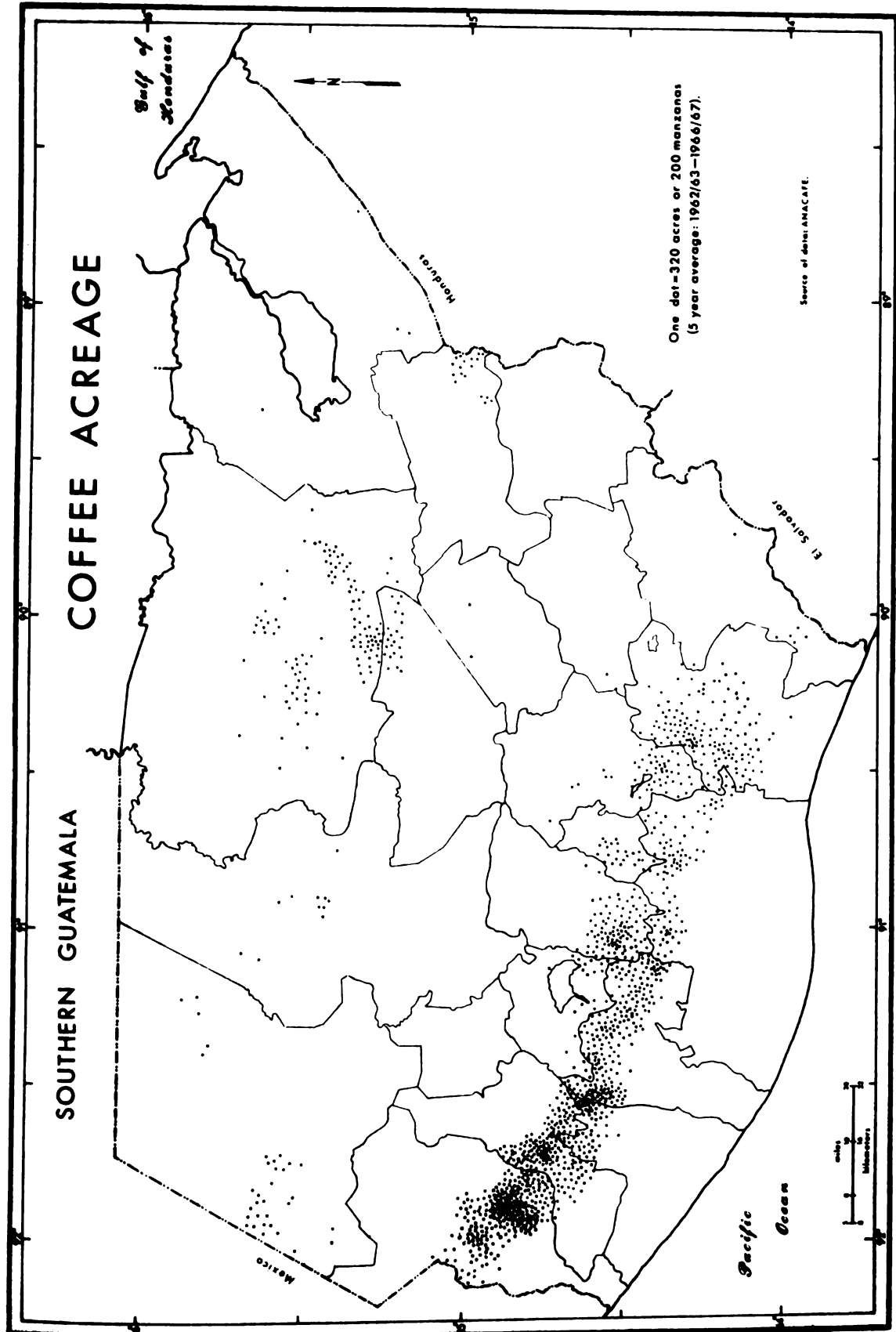
result will be a displacement of coffee production away from large cities and, to a degree, from primary transportation routes as well.

### The Spatial Distribution of Production

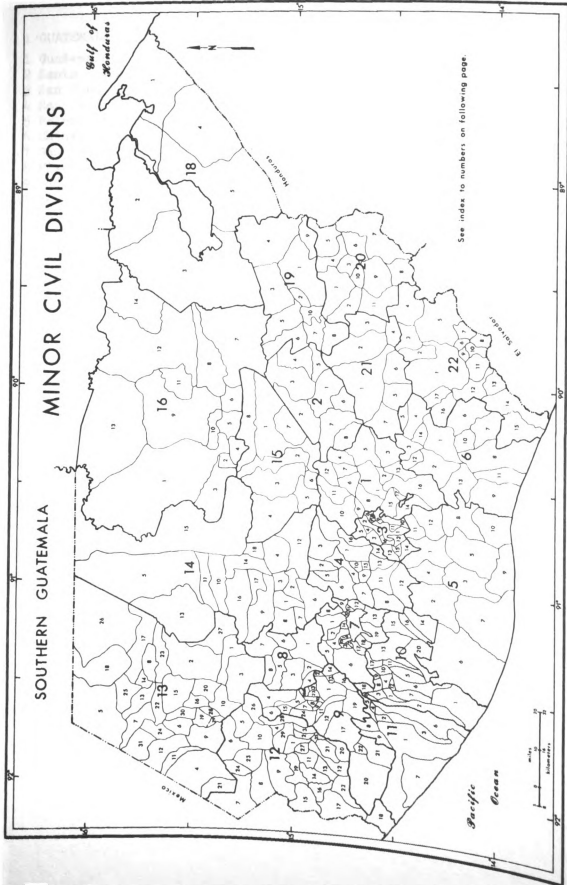
The spatial distribution of coffee production reflects the occurrence of physical location factors, and, to a lesser degree, economic factors. The resulting areal patterns include an elongated zone located primarily on the Pacific slopes of the highlands, becoming wider and less contiguous from west to east. A dispersed and physically different zone focuses upon the city of Cobán, and there are outlying and scattered producing areas in Huehuetenango, El Quiché, and the eastern departments of the country. Map 10 illustrates the area under coffee cultivation and the spatial patterns, except for small isolated pockets of production in the departments of Chiquimula, Jutiapa, Jalapa, and the area west of Lake Atitlán. The municipios, their approximate boundaries subject to much litigation and disagreement, are shown in Map 11. Coffee production, by municipio, is depicted in Map 12.

### Finca Size

For purposes of this study size refers to the area planted to coffee, not to the overall acreage of a finca, unless specified to the contrary. In certain instances, size is determined by production levels. ANACAFE defines a "small producer" as one that produces less than fifty quintales of coffee in oro per year. A "large producer," conversely, is one with annual output of fifty quintales or more. The terms, as defined by ANACAFE, are so employed in this study.



Map 10



Map 11

## 1 GUATEMALA

- 1 Guatemala
- 2 Santa Catarina Pinula
- 3 San José Pinula
- 4 San José del Golfo
- 5 Palencia
- 6 Chinautla
- 7 San Pedro Ayampuc
- 8 Mixco
- 9 San Pedro Sacatepéquez
- 10 San Juan Sacatepéquez
- 11 San Raymundo
- 12 Chuarrancho
- 13 Fraijanes
- 14 Amatitlán
- 15 Villa Nueva
- 16 Villa Canales
- 17 Petapa

## 2 EL PROGRESO

- 1 El Progreso
- 2 Morazán
- 3 San Agustín Acasaguastlán
- 4 San Cristóbal Acasaguastlán
- 5 El Jícaro
- 6 Sansare
- 7 Sanarate
- 8 San Antonio La Paz

## 3 SACATEPEQUEZ

- 1 Antigua Guatemala
- 2 Jocotenango
- 3 Pastores
- 4 Sumpango
- 5 Santo Domingo Xenacoj
- 6 Santiago Sacatepéquez
- 7 San Bartolomé Milpas Altas
- 8 San Lucas Sacatepéquez
- 9 Santa Lucía Milpas Altas
- 10 Magdalena Milpas Altas
- 11 Santa María de Jesús
- 12 Ciudad Vieja
- 13 San Miguel Dueñas
- 14 Alotenango
- 15 San Antonio Aguas Calientes
- 16 Santa Catarina Barahona

## 4 CHIMALTENANGO

- 1 Chimaltenango
- 2 San José Poaquil
- 3 San Martín Jilotepeque
- 4 Comalapa
- 5 Santa Apolonia
- 6 Tecpán Guatemala
- 7 Patzún
- 8 Pochuta
- 9 Patzicía
- 10 Santa Cruz Balanyá
- 11 Acatenango
- 12 Yepocapa
- 13 San Andrés Itzapa
- 14 Parramos
- 15 Zaragoza
- 16 El Tejar

## 5 ESCUINTLA

- 1 Escuintla
- 2 Santa Lucía Cotzumalguapa
- 3 La Democracia
- 4 Siquinalá
- 5 Masagua
- 6 Tiquisate
- 7 La Gomera
- 8 Guanagazapa
- 9 San José
- 10 Iztapa
- 11 Palín
- 12 San Vicente Pacaya

## 6 SANTA ROSA

- 1 Cuilapa
- 2 Barberena
- 3 Santa Rosa de Lima
- 4 Casillas
- 5 San Rafael Las Flores
- 6 Oratorio
- 7 San Juan Tecuaco
- 8 Chiquimulilla
- 9 Taxisco
- 10 Santa María Ixhuatán
- 11 Guazacapán
- 12 Santa Cruz Naranjo
- 13 Pueblo Nuevo Viñas
- 14 Nueva Santa Rosa



## 7 SOLOLA

- 1 Sololá
- 2 San José Chacayá
- 3 Santa María Visitación
- 4 Santa Lucía Utatlán
- 5 Nahualá
- 6 Santa Catarina Ixtahuacán
- 7 Santa Clara La Laguna
- 8 Concepción
- 9 San Andrés Semetabaj
- 10 Panajachel
- 11 Santa Catarina Palopó
- 12 San Antonio Palopó
- 13 San Lucas Tolimán
- 14 Santa Cruz La Laguna
- 15 San Pablo La Laguna
- 16 San Marcos La Laguna
- 17 San Juan La Laguna
- 18 San Pedro La Laguna
- 19 Santiago Atitlán

## 8 TOTONICAPÁN

- 1 Totonicapán
- 2 San Cristóbal Totonicapán
- 3 San Francisco El Alto
- 4 San Andrés Xecul
- 5 Momostenango
- 6 Santa María Chiquimula
- 7 Santa Lucía La Reforma
- 8 San Bartolo

## 9 QUEZALTENANGO

- 1 Quezaltenango
- 2 Salcajá
- 3 Olinstepeque
- 4 San Carlos Sija
- 5 Sibilia
- 6 Cabricán
- 7 Cajolá
- 8 San Miguel Sigüilá
- 9 Ostuncalco
- 10 San Mateo
- 11 Concepción Chiquirichapa
- 12 San Martín Sacatepéquez
- 13 Almolonga
- 14 Cantel

## 15 Huitán

- 16 Zunil
- 17 Colomba
- 18 San Francisco La Unión
- 19 El Palmar
- 20 Coatepeque
- 21 Génova
- 22 Flores Costa Cuca
- 23 La Esperanza
- 24 Palestina de los Altos

## 10 SUCHITEPEQUEZ

- 1 Mazatenango
- 2 Cuyotenango
- 3 San Francisco Zapotitlán
- 4 San Bernardino
- 5 San José El Idolo
- 6 Santo Domingo Suchitepéquez
- 7 San Lorenzo
- 8 Samayac
- 9 San Pablo Jocopilas
- 10 San Antonio Suchitepéquez
- 11 San Miguel Panán
- 12 San Gabriel
- 13 Chicacao
- 14 Patulul
- 15 Santa Bárbara
- 16 San Juan Bautista
- 17 Santo Tomás La Unión
- 18 Zunilito
- 19 Pueblo Nuevo
- 20 Río Bravo

## 11 RETALHULEU

- 1 Retalhuleu
- 2 San Sebastián
- 3 Santa Cruz Muluá
- 4 San Martín Zapotitlán
- 5 San Felipe
- 6 San Andrés Villa Seca
- 7 Champerico
- 8 Nuevo San Carlos
- 9 El Asintal

## 12 SAN MARCOS

- 1 San Marcos
- 2 San Pedro Sacatepéquez
- 3 San Antonio Sacatepéquez
- 4 Comitancillo
- 5 San Miguel Ixtahuacán
- 6 Concepción Tutuapa
- 7 Tacaná
- 8 Sibinal
- 9 Tajumulco
- 10 Tejutla
- 11 San Rafael Pie de la Cuesta
- 12 Nuevo Progreso
- 13 El Tumbador
- 14 El Rodeo
- 15 Malacatán
- 16 Catarina
- 17 Ayutla
- 18 Ocós
- 19 San Pablo
- 20 El Quetzal
- 21 La Reforma
- 22 Pajapita
- 23 Ixchiguán
- 24 San José Ojetenán
- 25 San Cristóbal Chucho
- 26 Sipacapa
- 27 Esquipulas Palo Gordo
- 28 Río Blanco
- 29 San Lorenzo

## 13 HUEHUETENANGO

- 1 Huehuetenango
- 2 Chiantla
- 3 Malacatancito
- 4 Cuilco
- 5 Nentón
- 6 San Pedro Necta
- 7 Jacaltenango
- 8 Soloma
- 9 Ixtahuacán
- 10 Santa Bárbara
- 11 La Libertad
- 12 La Democracia
- 13 San Miguel Acatán
- 14 San Rafael La Independencia

## 15 Todos Santos Cuchumatán

- 16 San Juan Atitán
- 17 Santa Eulalia
- 18 San Mateo Ixtatán
- 19 Colotenango
- 20 San Sebastián Huehuetenango
- 21 Tectitán
- 22 Concepción
- 23 San Juan Ixcoy
- 24 San Antonio Huista
- 25 San Sebastián Coatán
- 26 Barillas
- 27 Aguacatán
- 28 San Rafael Petzal
- 29 San Gaspar Ixchil
- 30 Santiago Chimaltenango
- 31 Santa Ana Huista

## 14 EL QUICHE

- 1 Santa Cruz del Quiché
- 2 Chiché
- 3 Chinique
- 4 Zacualpa
- 5 Chajul
- 6 Chichicastenango
- 7 Patzité
- 8 San Antonio Ilotenango
- 9 San Pedro Jocopilas
- 10 Cunén
- 11 San Juan Cotzal
- 12 Joyabaj
- 13 Nebaj
- 14 San Andrés Sajcabajá
- 15 Uspantán
- 16 Sacapulas
- 17 San Bartolomé Jocotenango
- 18 Canillá

## 15 BAJA VERAPAZ

- 1 Salamá
- 2 San Miguel Chica
- 3 Rabinaj
- 4 Cubulco
- 5 Granados
- 6 El Chól
- 7 San Jerónimo
- 8 Purulhá

## 16 ALTA VERAPAZ

- 1 Cobán
- 2 Santa Cruz Verapaz
- 3 San Cristóbal Verapaz
- 4 Tactic
- 5 Tamahú
- 6 Tucurú
- 7 Panzós
- 8 Senahú
- 9 San Pedro Carchá
- 10 San Juan Chamelco
- 11 Lanquín
- 12 Cahabón
- 13 Chisec
- 14 Chahal

## 18 IZABAL

- 1 Puerto Barrios
- 2 Livingston
- 3 El Estor
- 4 Morales
- 5 Los Amates

## 19 ZACAPA

- 1 Zacapa
- 2 Estanzuela
- 3 Río Hondo
- 4 Gualán
- 5 Teculután
- 6 Usumatlán
- 7 Cabañas
- 8 San Diego
- 9 La Unión
- 10 Huité

## 20 CHIQUIMULA

- 1 Chiquimula
- 2 San José La Arada
- 3 San Juan Ermita
- 4 Jocotán
- 5 Camotán
- 6 Olopa
- 7 Esquipulas
- 8 Concepción Las Minas
- 9 Quezaltepeque

## 10 San Jacinto

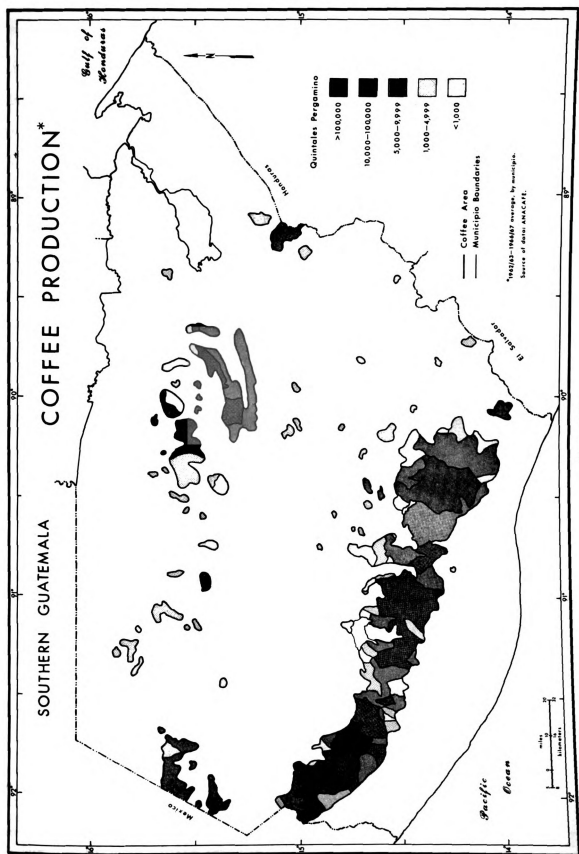
## 11 Ipala

## 21 JALAPA

- 1 Jalapa
- 2 San Pedro Pinula
- 3 San Luis Jilotepeque
- 4 San Manuel Chaparrón
- 5 San Carlos Alzatate
- 6 Monjas
- 7 Mataquescuintla

## 22 JUTIAPA

- 1 Jutiapa
- 2 El Progreso
- 3 Santa Catarina Mita
- 4 Agua Blanca
- 5 Asunción Mita
- 6 Yupiltepeque
- 7 Atescatempa
- 8 Jerez
- 9 El Adelanto
- 10 Zapotitlán
- 11 Comapa
- 12 Jalpatagua
- 13 Conguaco
- 14 Moyuta
- 15 Pasaco
- 16 San José Acatempa
- 17 Quesada



Map 12

Since the national average yield for registered fincas is about five or six quintales in pergamino, or from four to five quintales in oro, per acre, it can be calculated that small producers generally have less than ten acres in coffee. In reality, however, there are numerous fincas with less than ten acres under coffee which produce well in excess of fifty quintales. Unfortunately, the data do not include the number of trees per unit area and, thus, the intensity of land use.

There are approximately 2,447 farms which produce over fifty quintales oro, accounting for about 95 percent of total reported coffee production.<sup>1</sup> The remaining 5 percent is produced by some 25,000 to 30,000 small farmers. How much coffee is grown but not reported is difficult to estimate, but it seems certain that the 2,447 fincas produce at least 90 percent of all coffee grown in Guatemala. Small producers are currently being registered by ANACAFE and, although past estimates of the number of these small growers were over 50,000, it is now being discovered that the actual number is about half that anticipated. The pre-registration estimates were inflated, largely because

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<sup>1</sup>This number pertains to registered fincas with a basic quota of over fifty quintales oro for 1967/68, or that produced at least fifty quintales oro in 1966/67 or 1965/66. In cases where a finca had a basic quota of at least fifty quintales oro but had not reported its coffee acreage for 1967/68, the most recent year reported was used to obtain the acreage under coffee.

One hundred fourteen of the fincas did not have quotas for 1967/68. This could result from annexation; transfers or sales; the formation of cooperatives; the cessation of coffee production; transfer through foreclosure to a bank, which receives a quota for all of its holdings in a lump sum; or the selling of coffee without quota. Such fincas were included by virtue of their having reported harvests of over fifty quintales oro in 1966/67 or 1965/66. Cooperatives are included as individual fincas, with the coffee acreage of each equal to the sum of that of its members.

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coffee buyers and exporters submitted lists containing many fictitious producers' names when applying for export quotas. Registration of all producers will eliminate, or at least greatly reduce, the misappropriation of quotas.

Assuming the existence of between 25,000 and 30,000 small producers, the 2,447 "large" farms represent approximately 8 or 9 percent of the total number of producers. This means that less than 10 percent of the producers account for over 90 percent of the total national coffee production. Of course, many small producers cultivate only a few coffee trees, concentrating on subsistence-type food crops or, perhaps, commercial crops other than coffee.

The 2,447 fincas have a total of 499,032 acres in coffee, with a mean of 204 acres and a standard deviation of 336 acres. The farms are grouped into four categories in Table 13, based upon size and standard deviations about the mean.

TABLE 13

## AREA AND PRODUCTION OF COFFEE ACCORDING TO FARM SIZE

Category	Acres in Coffee	Total Acres in Coffee	% of Total	1966/67 Production in Quintales (perg.)	%
1 $>\bar{x} + 1\sigma$	>540	224,611	45.0	967,449	41.9
2 $\bar{x} - \bar{x} + 1\sigma$	204-540	150,733	30.2	691,336	29.9
3 $\bar{x} - 1/2\sigma - \bar{x}$	36-203	110,495	21.2	552,481	23.9
4 $<\bar{x} - 1/2\sigma$	<36	13,193	2.6	97,901	4.2
Totals		499,032	99.9	2,309,167	99.9

Source: Calculated from unpublished data from ANACAFE.

Figure 2 presents a graphic representation of the finca-size data in Table 13. The distribution curve, not drawn to scale, demonstrates a marked skew to the right, resulting from the existence of about 100 farms with over 865 acres (500 manzanas) in coffee, nineteen farms with over 1,730 acres (1,000 manzanas) in coffee, and four farms with over 3,460 acres (2,000 manzanas) of coffee. The left side of the curve is steep and ends more abruptly, due to the fact that only fincas producing fifty quintales oro or more are included. It is apparent, however, that even without the production constraint of fifty quintales, the left side of the curve would be relatively steep. It is notable that of the four fincas reporting over 3,460 acres of coffee, two are owned by the Banco Nacional Agrario, one is a National Finca, and one is privately owned. However, a single individual or a family may own several fincas with a total area in excess of 3,500 acres. Because these are frequently held under different names or companies, a more detailed land ownership analysis is misleading.

Of the total area of registered farms 45 percent is accounted for by fincas with more than 540 acres under coffee. A total of 75 percent is held by growers with at least 204 acres in coffee. Furthermore, it is certain that nearly all of the unregistered producers are in the "36-203" and "less than 36" categories, especially the latter. These small producers, of course, will not add greatly to the total of 499,032 acres in coffee. Therefore, it can be assumed that when all producers are taken into account, the concentration of land ownership will be even more marked than is presently indicated.



FREQUENCY DISTRIBUTION  
OF COFFEE FARM SIZES IN  
GUATEMALA

$\bar{X}$  = 204 acres (117.8 manzanas)  
 $\sigma$  = 336 acres (194.3 manzanas)

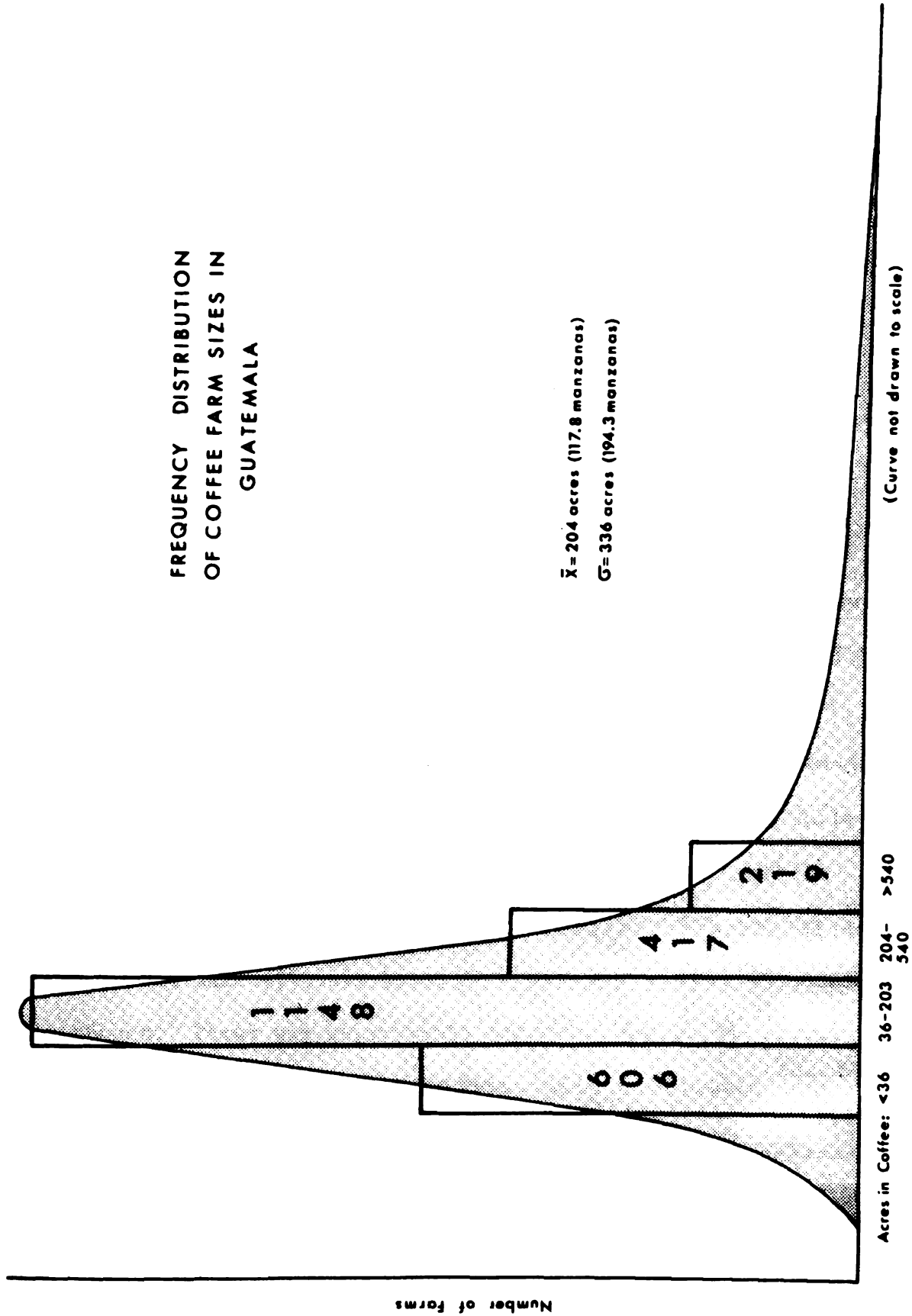
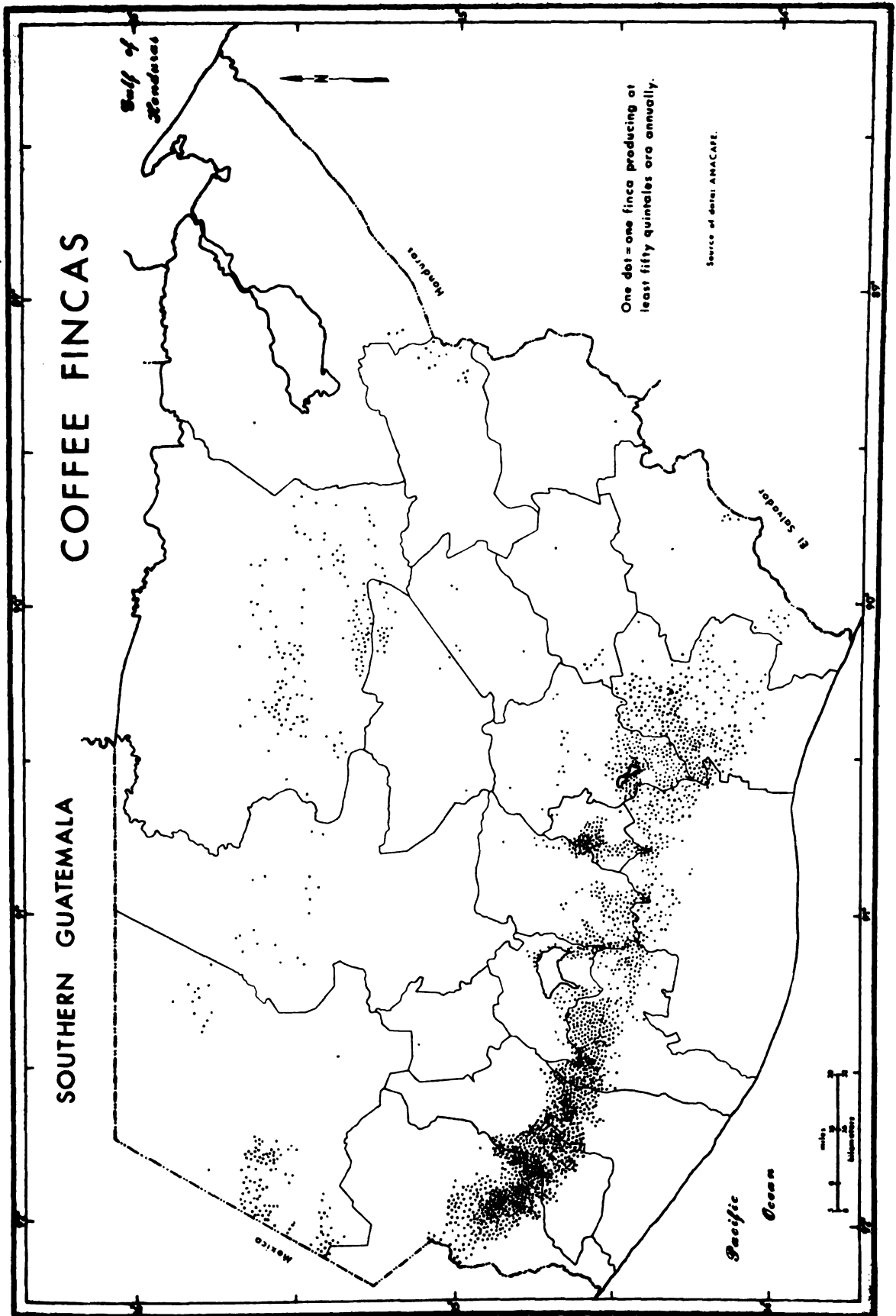


Figure 2

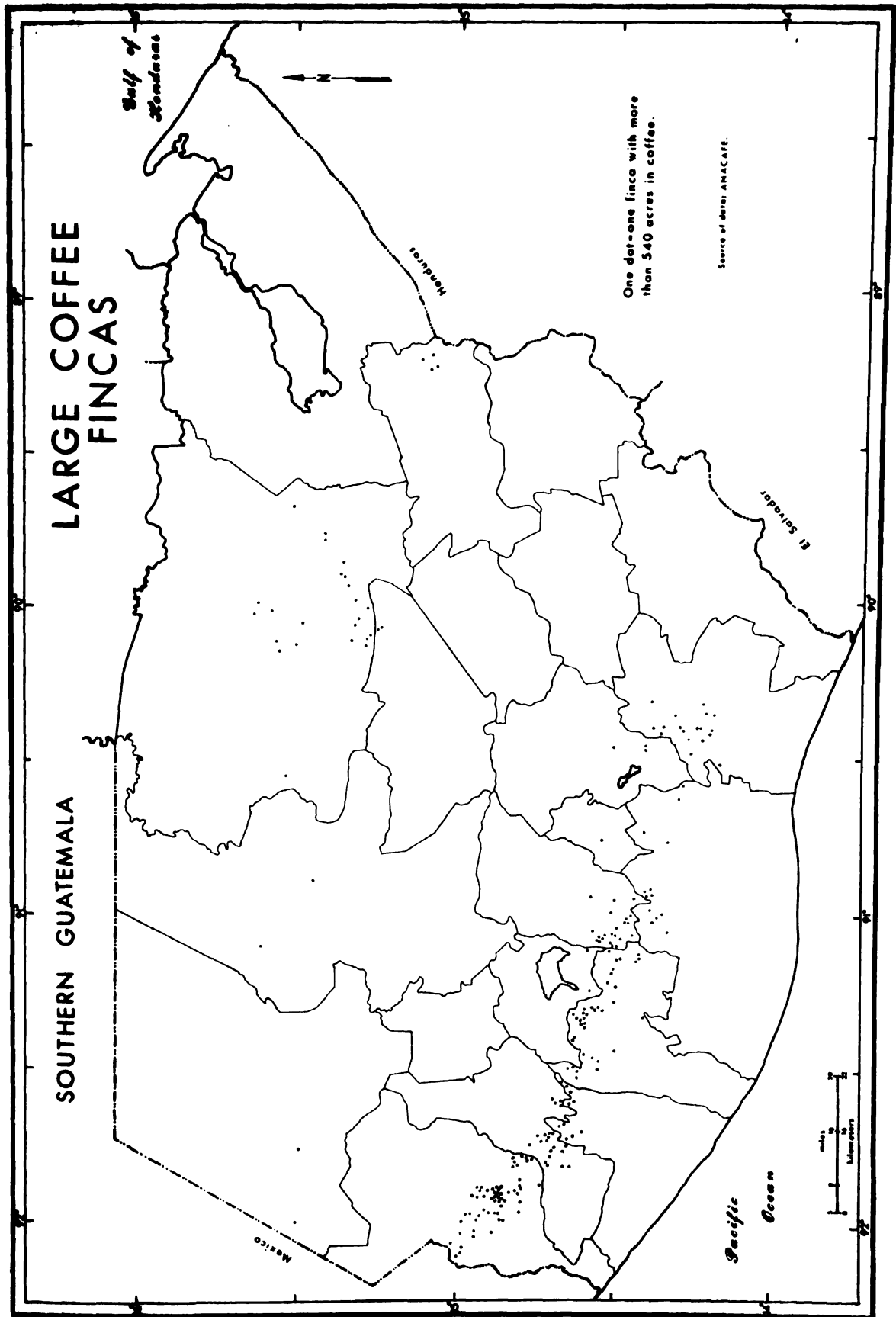
As evident in Table 13, the production of coffee in 1966/67 corresponds closely with the area under coffee *vís-a-vís* the categories based on finca size. Although the fincas reporting coffee production for 1966/67 are not identical with those upon which the categories are based, the approximation is close and, if anything, is biased slightly against the smaller categories. The close correlation of percent of area and percent of production indicates that finca size does not significantly correlate with yields per unit area.

#### Spatial Variation of Finca Size

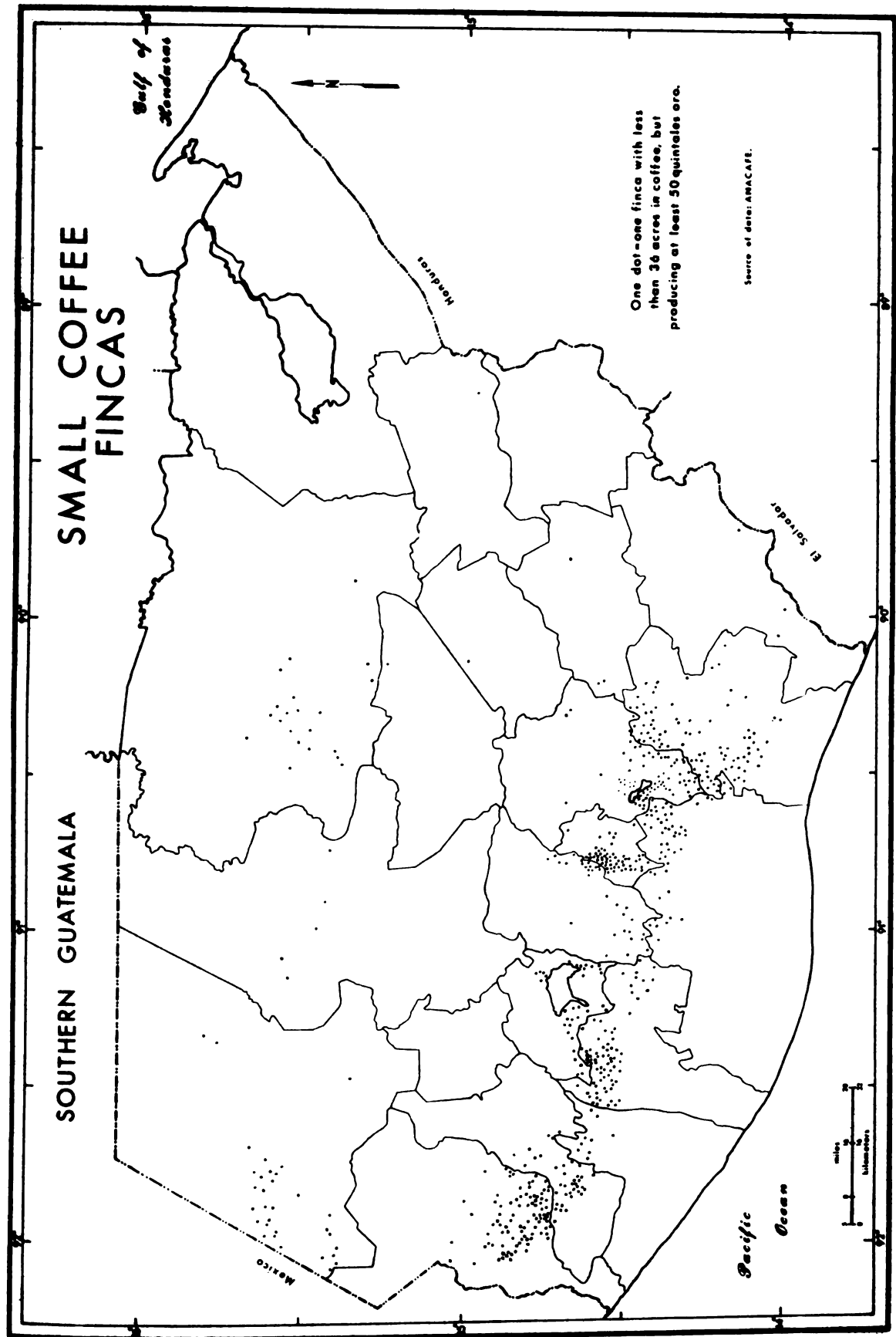
The locations of all fincas producing fifty quintales or more annually are shown in Map 13. Map 14 shows the distribution of fincas with more than 540 acres in coffee, while Map 15 shows the fincas which include less than 36 acres in coffee but yet produce at least fifty quintales oro. In comparing the three maps, certain patterns are readily apparent. Large farms predominate in the western piedmont area, while smaller farms are more numerous in the Central-Eastern zone. Small operational units are found in all coffee-producing departments, but are concentrated in San Marcos, Santa Rosa, Alta Verapaz, Sololá, Chiquimula and Suchitepéquez. These six departments accounted for 11,892 of the 18,656 small producers registered as of July, 1968. The area around Antigua and a larger one south and southeast of Lake Amatitlán are particularly conspicuous in the predominance of small farms and the near-absence of large farms. Large farms are found throughout the coffee-producing areas of San Marcos, Quezaltenango, Retalhuleu, Suchitepéquez,



Map 13



Map 14



Map 15

Chimaltenango, and western Escuintla department. They are especially concentrated in the nation's three leading coffee producing municipios, namely El Tumbador, Colomba, and Chicacao.

### Yields

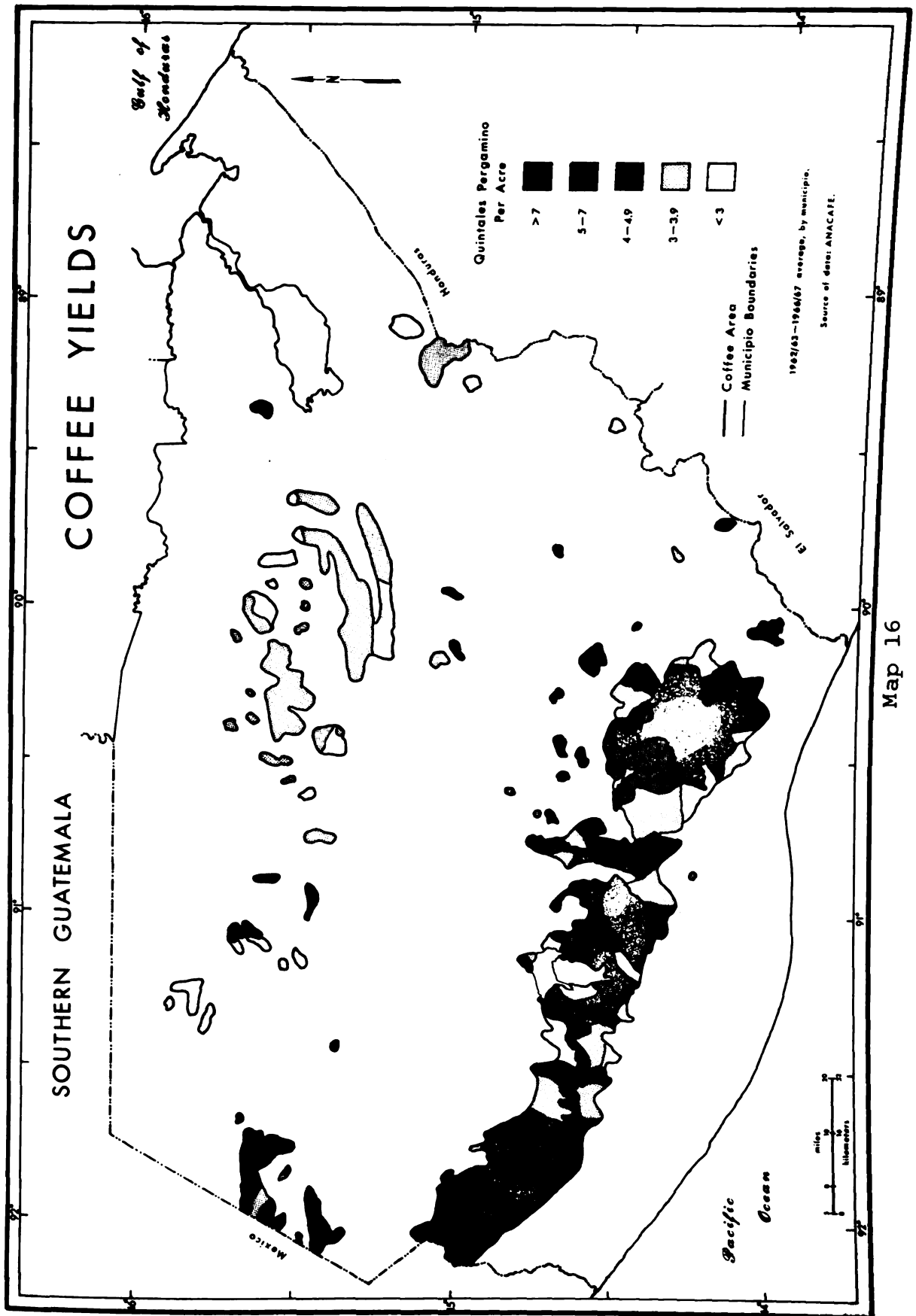
A large number of variables influence the coffee yields of any given finca. It is commonly held that yields vary inversely with altitude. Tree variety, the choice of which is influenced by altitude, also exerts an influence. Topography is another factor, because steeper slopes generally support fewer trees per unit area. Temperature, precipitation, and soils, all of which relate to altitude but vary regionally, are additional elements. Management, however, appears to be the single most important factor affecting coffee yields. In summary:

Yields are considerably dependent on climate, altitude, type of soil and the species and age distribution of the coffee trees cultivated. But, to an increasing extent, the differences in yield between the better managed farms and the rest are the result of differences in the amount of labor input, the use of fertilizers, and the adoption of measures to control disease and pests.<sup>2</sup>

The spatial distribution of coffee yields in Guatemala is illustrated in Map 16. Data for the municipios having the highest yields, those with over seven quintales pergamino per acre, are somewhat misleading. It is known, for example, that the municipios of San Juan La Laguna, in Sololá Department, and Santo Tomás La Unión, in Suchitepéquez, contain many small producers who sell to local finca owners. The latter frequently report the coffee as part of their own production, but report only their own acreage and thereby seriously inflate the numerical yield.

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<sup>2</sup>FAO, The World Coffee Economy, 10.



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The same is probably true for many of the small, scattered outlying areas in the highest yield category. The high yielding municipios in San Marcos and Quezaltenango are probably more accurately shown, since they are surrounded by municipios of the next highest yield category.

The Sacatepéquez area is the most outstanding exception to the commonly accepted notion that yields decrease with altitude. Farms in the municipios of Sacatepéquez shown in Map 16 as having average yields of more than seven quintales, per acre, have average altitudes of more than 4,000 feet. Superior management, for which data are unavailable, may explain the high yields of southern Sacatepéquez. Certainly, many of the farms in the area appear to be more carefully managed and more neatly kept. The singularly poor yields of the Cobán zone are traditional and due largely to relatively inferior soils for coffee.

#### The Harvest Timetable

Because temperature and precipitation are so closely related to altitude, harvesting also varies with elevation. Table 14 indicates the months in which coffee is harvested at various altitudes, according to region. The harvest dates are approximations, with allowances necessary for variations caused by intra-regional climatic conditions.

#### Statistical Analysis

A series of simple and multiple regression analyses were conducted to aid in explanation of the areal distribution of coffee production. Data for eight variables were assembled on a municipio basis. Yields variable (1), are defined for each municipio by dividing the 1962/63-1966/67 production average, (2), by the average coffee acreage (3). The

TABLE 14

## THE GUATEMALAN COFFEE HARVEST TIMETABLE

Region and Altitude (feet)	Principal Harvest Season
<b>Southwest (San Marcos, Quezaltenango, Retalhuleu, Suchitepéquez)</b>	
1,000-2,000	July, <u>Aug. - Sept.</u> , Oct.
2,000-3,000	Sept., <u>Oct. - Nov.</u> , Dec.
3,000-4,000	Oct., <u>Nov. - Dec.</u> , Jan.
4,000-5,000	Nov., <u>Dec. - Jan.</u> , Feb.
<b>East (Santa Rosa, Guatemala, Escuintla, Chimaltenango)</b>	
1,000-2,000	Sept., <u>Oct. - Nov.</u> , Dec.
2,000-3,000	Oct., <u>Nov. - Dec.</u> , Jan.
3,000-4,000	Nov., <u>Dec. - Jan.</u> , Feb.
4,000-5,000	Dec., <u>Jan. - Feb.</u> , March
<b>North (Cobán)</b>	
1,000-2,000	Sept., <u>Oct.</u> , Nov.
2,000-3,000	Oct., <u>Nov.</u> , Dec.
3,000-4,000	Nov., <u>Dec.</u> , Jan.
4,000-5,000	Dec., <u>Jan.</u> , Feb.
<b>Huehuetenango</b>	
3,000-4,000	Jan., <u>Feb.</u> , March
4,000-5,000	Feb., <u>March</u> , April
<b>Central (Guatemala, Sacatepéquez, Chimaltenango, Sololá)</b>	
4,000-5,000	Jan., <u>Feb. - March</u> , April

Source: ANACAFE.

five-year averages tend to smooth out annual variations in the size of harvest. Farm size, (4), is equal to the five-year average of a given municipio, divided by the number of fincas producing at least fifty quintales oro annually. The altitude, (5), for each municipio is calculated by dividing the sum of the mean altitudes of each coffee farm by the total number of coffee farms in the municipio. Distance from Guatemala City, (6), is measured in air miles to the center of the coffee area in each municipio. The number of beneficios secos, (7), in operation in each municipio is tabulated. Finally, the percent of total area in coffee, (8), is defined as the five-year average acreage under coffee, divided by the total area of the municipio. Simple correlations among the eight variables are shown in Table 15.

TABLE 15  
SIMPLE CORRELATIONS AMONG COFFEE VARIABLES

Variables		Simple Correlations							
1.	Yields	1.00							
2.	Production	0.21	1.00						
3.	Acreage	0.11	0.97	1.00					
4.	Av. Farm Size	-0.19	0.39	0.47	1.00				
5.	Altitude	0.29	-0.20	-0.26	-0.36	1.00			
6.	Distance	-0.11	0.12	0.12	0.20	-0.37	1.00		
7.	Beneficios Secos	0.07	0.44	0.44	0.17	-0.04	-0.01	1.00	
8.	% Area in Coffee	0.17	0.75	0.76	0.36	0.27	0.18	0.32	1.00
Variables:		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Source: Calculated from unpublished data from ANACAFE.

None of the variables correlate with yields to a significant degree, and the explained variance of yields in a multiple regression analysis including all of the variables is but 30 percent. Thus, the hypothesis that management is the single most important determinant of

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yields is perhaps indirectly supported. Unfortunately, management data are not available. The importance of managerial skills is documented by studies of other producing countries, however, as well as by a small study carried out as a part of the FAO-ANACAFE Diversification Project in Guatemala.<sup>3</sup> As noted in Chapter IV, both Schmid and Van Teutem found strong relationships between yields and labor productivity, which is also related to management.

Production does correlate closely with acreage and with the percent of land under coffee. Total acreage, alone explaining 94 percent of production, is the more important of the two variables. The distribution of the residuals of production, as explained by acreage, closely resembles the map of coffee yields (Map 16). As expected coffee acreage also correlates with the percent of land in coffee and with farm size, the latter variables together explaining about 60 percent of production. Considerable interdependence exists between total acreage and percent of land in coffee, however, and farm size alone accounts for little of the variation in production. In general, the largest-producing municipios tend to be devoted primarily to coffee cultivation in terms of land area and are also characterized by relatively high yields. The latter relationship, however, does not show among the simple correlations in Table 15 because of some municipios which produce relatively little coffee but presumably have high yields. This is especially true of certain areas outside of the three major regions, where small producers

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<sup>3</sup>Informe anual del Departamento de Asuntos Agrícolas, 1965-66  
(Guatemala: ANACAFE, 1966), 16.

sell to larger growers who report the coffee as part of their harvest but neglect to report the corresponding acreage.

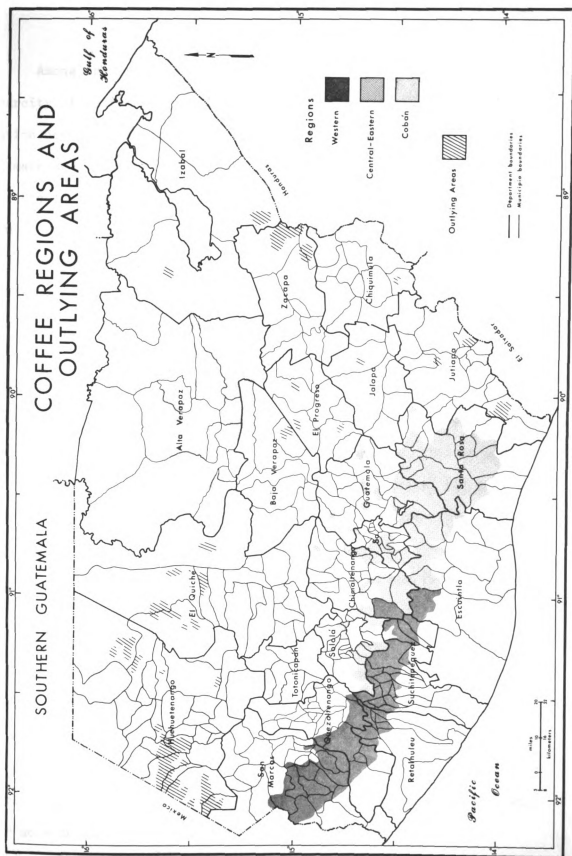
Higher correlations, especially relative to altitude and farm size, were anticipated. It appears, however, that the different coffee regions tend to compensate for each other, resulting in low correlations among the variables. In other words, the regions display sufficient variation so that, even with the present data limitations, it is apparent that certain of the same variables explain much more when analyzed intra-regionally than when considered for the country as a whole. In short, the relatively low correlations support the hypothesis of this study that since significant regional variation exists, data collection and analysis exclusively at the national level lead to conceptual errors and are not adequate for planning purposes.

## CHAPTER VI

### THE COFFEE REGIONS OF GUATEMALA

A general examination of coffee production in Guatemala reveals the existence of two major regions: (1) an elongated, continuous zone on the Pacific or southern slopes of the Central Highlands, and (2) a smaller region, chiefly in the Department of Alta Verapaz, focusing upon the city of Cobán. Actually, the former consists of two quite different segments, resulting in a total of three major coffee regions: The West, the Central-Eastern Region, and the Cobán Region (Map 17). Subregions are found within each of the major regions, and there are also a number of "outlying areas" where coffee is grown.

As noted previously, the factors which distinguish these regions tend to be more physical than economic in nature. Climate, for example, appears to be the single most important criterion accounting for regional differences. Especially important for delimiting the boundary between the West and the Central-Eastern Region is a relatively well-defined dry season in the latter area. Farm size and altitude are also important in defining this boundary. Other factors include soils, topography, production, acreage under coffee, percent of land in coffee, quality, variety, number of farms, yields, processing, and transportation.





Among the problems encountered in a delimitation of regions is the scarcity of reliable climatic data. Although temperature and precipitation depend to a large extent upon altitude, the relationship of climate and altitude *vis-a-vis* coffee is closer within each region than for the country as a whole. A second obstacle, arising from the large number of farm units, is less serious if consideration is limited to farms producing at least fifty quintales oro annually. A third difficulty concerns the level of generalization. Individual farm units are too numerous, too unreliably reported in existing data, and too variable in year to year crop size. Departments, on the other hand, are too extensive as statistical units to provide sufficient detail for spatial analysis and mapping. Municipios have the disadvantage of variable size and shape, as well as indefinite boundaries. The municipio is used, however, because (1) it is better than alternative units, (2) data are available at that level, (3) data reported by individual farmers can be averaged for each municipio, thereby reducing the seriousness of error in reporting or annual fluctuations in crop sizes, and (4) it is perhaps the most reasonable unit for future data collection and planning.

Only the department of Chimaltenango and Escuintla are shared by two distinct regions. This exception involves two municipios adjacent to the Western and Central-Eastern boundary. Some municipios, of relatively minor importance, represent anomalies within the regions in which they are located. However, the rectification of such irregularities would engender non-contiguous regions, a result considered useful only for more detailed consideration of a particular region.

The Western Region

The Western Region, the leading coffee zone in Guatemala, is comprised of producing areas in San Marcos, Quezaltenango, Suchitepéquez, and Retalhuleu departments, plus the municipios of Pochuta in Chimaltenango and Santa Lucia Cotzumalguapa in Escuintla. Reflecting traditionally high yields relative to the other regions, the West produces about 63 percent of the nation's coffee on 58 percent of the total coffee acreage (Table 16.)<sup>1</sup> The department of San Marcos alone produces almost one-fourth of the annual harvest, while San Marcos, Quezaltenango, and Suchitepéquez together account for over 50 percent of Guatemala's annual coffee crop (Table 17).

TABLE 16

COFFEE AREA AND PRODUCTION BY REGION IN GUATEMALA,  
1962/63-1966/67 AVERAGE

Region	Area		Production	
	Acres Under Coffee	Percent of Total	Quintales Pergamino	Percent of Total
West	276,923	58	1,529,979	63
Central-East	124,361	26	643,074	26
Cobán	47,838	10	151,503	6
Total 3 Regions	449,122	94	2,324,556	95
Total Guatemala	474,549	100	2,429,108	100

Source: Calculated from unpublished data from ANACAFE.

Considerably more of the land in the West is devoted to coffee culture than in the Central-Eastern Region. Of the total area in municipios of the Western Region, about 15 percent is in coffee, compared

<sup>1</sup>Data in the tables of this chapter are exclusive of small and unregistered coffee producers, unless otherwise specified.

TABLE 17  
COFFEE AREA AND PRODUCTION BY DEPARTMENT IN GUATEMALA,  
1962/63-1966/67 AVERAGE

Department	Area		Production	
	Acres Under	Percent of	Quintales	Percent of
	Coffee	Total	Pergamino	Total
San Marcos	95,259	20.1	582,364	24.0
Suchitepéquez	74,709	15.7	341,903	14.1
Quezaltenango	60,609	12.8	360,406	14.8
Santa Rosa	48,700	10.3	233,315	9.6
Alta Verapaz	40,626	8.6	135,307	5.6
Chimaltenango	33,841	7.1	203,861	8.4
Escuintla	33,035	7.0	143,563	5.9
Retalhuleu	23,344	4.9	108,735	4.5
Guatemala	17,774	3.7	113,382	4.7
Huehuetenango	11,319	2.4	49,972	2.0
Sacatepéquez	7,974	1.7	56,125	2.3
Baja Verapaz	7,333	1.5	16,572	0.7
Sololá	6,038	1.3	29,399	1.2
Zacapa	6,299	1.3	18,179	0.7
El Quiché	3,460	0.8	14,683	0.6
Jutiapa	2,054	0.4	11,685	0.5
Izabal	903	0.2	3,077	0.1
Jalapa	609	0.1	3,805	0.2
El Progreso	561	0.1	2,642	0.1
Chiquimula	102	---	133	---
Totonicapán 1/	---	---	---	---
El Petén 1/	---	---	---	---
Totals	474,549	100.0	2,429,108	100.0

1/ Minimal production, not reported every year.

Source: Calculated from unpublished data from ANACAFE.

with 7 percent for the Central-Eastern Region and only 4 percent for Cobán. Maps of production reveal that the coffee area in the West is also more concentrated than in the Central-Eastern zone.

In general, the West receives more precipitation and has higher temperatures than the other two major regions. Annual temperatures and rainfall, varying with altitude, range between 65° and 80°F., and 80 and 150 inches, respectively. The higher precipitation levels are due largely to the region's position relative to the Pacific Ocean. The higher temperatures characteristic of the West, on the other hand, reflect the lower altitudes of Western farms. The average altitude of coffee farms in the West is 2,652 feet, compared with 4,456 feet in the Central-Eastern Region and 3,140 feet in Cobán (Table 18). The relatively low average altitude of Western coffee fincas, in turn, is largely a consequence of topography. The slope of the western Pacific piedmont increases abruptly from the coastal plain to the highlands beyond the coffee zone, rendering the total area between 3,000 and 5,000 feet considerably less than the area of land between these elevations in the Central-East.

The type of coffee produced in the West is also related to the generally lower elevations of the fincas. The West produces over 80 percent of the Good Washed and Extra Good Washed coffees, but only about 40 percent of the Hard Bean and 25 percent of the Strictly Hard Bean coffees (Table 19). The higher temperatures and greater precipitation in the West create, for the area as a whole, more severe problems with

TABLE 18

NUMBER OF COFFEE FARMS IN GUATEMALA PRODUCING AT LEAST FIFTY  
QUINTALES ORO, BY ELEVATION AND MAJOR REGION

Elevation	West	Central-East	Cobán	Total
<1,000	17	1	1	19
1,000-1,999	387	28	20	435
2,000-2,999	369	82	52	503
3,000-3,999	229	172	57	458
4,000-5,000	116	327	34	477
>5,000	41	307	2	350
Totals	1,159	917	166	2,242 <sup>1/</sup>

<sup>1/</sup> An additional 205 farms are located in outlying areas.

Source: Calculated from unpublished data from ANACAFE.

disease and pests than in the Central-Eastern Region. Also reflecting the lower altitudes is the tendency for banana trees to be used for coffee shade in the West to a greater extent than in the other major zones.

More important than higher annual temperatures and amounts of precipitation in differentiating regions is the existence or absence of a well-defined dry season. Although both the West and the Central-Eastern regions transcend several climatic zones, the annual distribution of rainfall clearly distinguishes between them. With minor exceptions, the West does not have a well-defined dry season, whereas the Central-Eastern zone does. The significance of the dry period is that it affects the quality of the coffee bean in at least three ways: (1) the dry season in the Central-Eastern Region occurs during the ripening period, thus affording the coffee cherry more sunshine, (2) the more pronounced dry season in the Central-East facilitates sun-drying, and (3) coffee can generally be left on the tree longer in the



TABLE 19  
PERCENT OF COFFEE TYPES BY DEPARTMENT IN GUATEMALA,  
1962/63-1966/67 AVERAGE

Department	Good Washed	Extra Good Washed	Prime Washed	Extra Prime Washed	Semi-Hard Bean	Hard Bean	Strictly Hard Bean
Santa Rosa	0.9	0.5	1.0	7.1	14.7	20.7	16.7
Chimaltenango	1.2	3.3	4.8	9.0	7.9	11.1	15.1
San Marcos	22.6	26.0	31.8	24.8	30.1	21.5	13.7
Guatemala	---	---	---	1.7	6.0	7.5	12.4
Sacatepéquez	---	---	---	---	---	2.7	9.3
Huehuetenango	0.4	---	0.1	0.2	0.7	2.2	7.1
Quezaltenango	19.8	23.0	18.8	17.6	14.6	11.7	5.7
Suchitepéquez	32.6	19.1	19.5	14.5	9.4	7.0	4.9
Sololá	---	1.5	0.6	---	1.0	0.6	3.8
Alta Verapaz	3.1	3.1	4.5	10.6	8.2	7.0	3.5
Escuintla	9.9	10.7	11.1	5.8	3.5	3.0	1.9
El Quiché	---	---	---	---	0.3	1.4	1.5
Jutiapa	---	---	---	---	0.7	1.3	1.1
Zacapa	---	2.0	1.0	1.5	0.7	0.4	0.9
Retalhuleu	9.2	10.5	6.1	5.3	0.8	1.1	0.8
Jalapa	---	---	---	---	---	---	0.8
El Progreso	---	---	---	---	---	0.2	0.5
Baja Verapaz	0.1	0.3	0.7	1.6	1.4	0.6	0.3
Izabal	0.2	---	---	0.3	---	---	---
Chiquimula	---	---	---	---	---	---	---
Totonicapán	---	---	---	---	---	---	---
El Petén	---	---	---	---	---	---	---
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated from unpublished data from ANACAFE.

Central-Eastern zone, since heavy rains are less likely to knock the ripe cherries from the tree. Moreover, much of the coffee of the Western Region is picked at the height of the rainy season. The dry season, of course, affects the entire growing cycle of the coffee tree and may influence quality in ways not yet determined. The coffee blossom appears in January and February in Colomba, Quezaltenango, for example, and not until two or three months later in the Central-Eastern zone at the same elevations.

Reinforcing the tendency for higher altitude coffees to be higher in quality is the tree variety. Most fincas in Guatemala produce arabica (typica), bourbon, or both, although a few other varieties are grown on a relatively small scale. Arabica, usually grown at higher elevations, is generally considered of better quality because of its larger bean size. Thus, arabica is preferred by growers in the Central-Eastern zone, while bourbon tends to predominate in the West (Table 20). However, a greater number of farms grow both arabica and bourbon, than grow either one or the other exclusively.

The coffee of the Western Region is not only grown at generally lower elevations, giving it a lower quality than that of the Central-Eastern Region, but its quality is also somewhat diminished by the variety which predominates and by the annual distribution of precipitation. A frequently quoted "rule of thumb" is that coffee from the Central-Eastern zone is about "500 feet better" than that from the West. That is, at a given altitude, Central-Eastern coffee is equal in quality to that grown 500 feet higher in the West. Coffee from the Western





Region, however, is of low quality only with reference to that grown in the Central-Eastern Region, and many exceptions exist regarding even this generalization. When compared on a global scale, coffees from the Western Region in Guatemala enjoy a high rank in quality.

TABLE 20  
COFFEE VARIETIES BY MAJOR REGION IN GUATEMALA 1/

Variety	West	Central-East	Cobán
Arabica			
Quintales pergamino:	171,985	287,942	33,973
Percent of total arabica:	31	52	6
Arabica as a percent of the region's total coffee:	14	35	32
Bourbon			
Quintales pergamino	290,560	76,971	7,954
Percent of total bourbon:	77	20	2
Bourbon as a percent of the region's total coffee:	23	9	8
Arabica-Bourbon			
Quintales pergamino:	807,818	456,840	62,892
Percent of total arabica-bourbon:	59	33	5
Arabica-Bourbon as a percent of the region's total coffee:	63	55	60

1/ Estimated from 1966/67 data from ANACAFE.

The Western Region has a greater number and larger average size of coffee farms than does the Central-Eastern Region. Some 2,242 of the 2,447 coffee fincas producing at least fifty quintales oro, or about 92 percent, are located within the three major regions. Of these 1,159, or 52 percent, are found in the Western zone where most are concentrated at elevations between 1,000 and 3,000 feet. The average farm size in the West is 239 acres, compared with 136 acres in the Central-East and 288 in the Cobán Region. This relationship of coffee finca size between

the major regions is about the same as that for all types of farms reported in the 1964 census. Thus, the spatial distribution of farm size does not appear unique to coffee, but follows a general tendency for larger farms to be located at lower elevations and at greater distances from Guatemala City.

Yields per unit area likewise display spatial variation. The West enjoys the highest yields, with an overall average of 5.5 quintales pergamino per acre, while the Central-Eastern Region is second, with 5.2 quintales. Cobán averages only 3.2 quintales per acre, and the national average is 4.1. It is surprising that the yields of the generally lower-grown coffees of the Western Region are not higher relative to those of the Central-Eastern zone. The explanation may lie in the existence of a negative correlation between yields and farm size. That is, the factor of lower altitudes in the Western zone may be partially offset by the smaller size of farms in the Central-Eastern Region. It also appears that certain low-yielding areas, and perhaps the larger number of producers, reduces the West's overall average.

Regional differences are also evident with regard to processing and transportation. In the West, relatively little coffee is sold in cherry, since more fincas have beneficios húmedos. These, in turn, are accounted for largely by the year-round water supply and greater average farm size. A reliable system of transportation is essential for the selling of coffee in cherry, since the fruit must be processed soon after picking. Yet, in this area of rugged topography, torrential rains make road maintenance expensive and difficult, with roads sometimes being washed out entirely.

An even more obvious difference between the Western and Central-Eastern regions is in the number of beneficios secos relative to total coffee production. Of the sixty-six beneficios secos in the West, all but eight are located on fincas. In contrast, almost half of the beneficios secos in the Central-Eastern Region are large urban-based, commercial mills. The relatively large number of Western fincas with beneficios secos reflects a greater number of large farms and a tendency to sell coffee in pergamino or oro. Since a finca is unlikely to have a beneficio seco without also having a beneficio húmedo, the seasonal shortage of water and the smaller size of the farms in the Central-Eastern Region encourage the sale of coffee in cherry and discourage the existence of beneficios secos on fincas.

Statistical computations of data at the municipio level aid in delimiting regional boundaries, while the residuals from the regression analyses help to focus upon anomalies within the regions. The latter, in turn, help to identify subregions or factors in need of further study. The boundary established between the two major coffee regions is optimal, in that it minimizes anomalies between adjacent areas of the West and Central-Eastern regions. Two adjoining municipios along this regional boundary, however, do not fit securely in either region. The municipio Santo Tomás La Unión, Suchitepéquez, falls within the Western Region. But, since it is comprised mostly of very small Indian producers, using relatively poor growing and processing techniques, it is immediately identified as an anomaly in the regression analysis and distorts the regional results accordingly. The same is true of the

municipio San Juan La Laguna, Sololá, except that the latter is part of the Central-Eastern Region. Therefore, these two municipios are excluded from the statistical analyses, increasing the correlations of the variables for the respective regions.

Most of the simple correlations of the variables examined at the national level are remarkably higher when computed for individual regions. Table 21 shows the correlations of these variables for the West. The relationship between the volume of production and yields per unit area, for example, is .47. This compares with only .21 for the Republic as a whole, indicating a stronger tendency for municipios with greater production to have higher yields, and vice versa.

TABLE 21  
SIMPLE CORRELATIONS AMONG COFFEE VARIABLES: THE WEST

Variables		Simple Correlations							
1. Yields	1.00								
2. Production	0.47	1.00							
3. Acreage	0.36	0.98	1.00						
4. Av. Farm Size	0.17	0.48	0.52	1.00					
5. Altitude	0.22	0.09	0.05	-0.04	1.00				
6. Distance <u>1/</u>	0.38	0.04	-0.03	-0.34	0.28	1.00			
7. Beneficios Secos	0.20	0.64	0.63	0.18	0.06	0.14	1.00		
8. % Area in Coffee	0.37	0.72	0.73	0.46	0.06	0.07	0.43	1.00	
Variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	

1/ From Guatemala City.

Source: Calculated from unpublished data from ANACAFE.

Although distance from Guatemala City is not particularly meaningful for intra-regional analysis, it is retained here because the correlation between distance and yields (.38) indicates a slight tendency for yields to increase westward, a topic worthy of further investigation. Distance also correlates negatively (-.34) with average farm size,

suggesting that farm size decreases toward the west. However, the number of large farms increases westward within this zone. The total number of producers also increases westward, explaining the decrease in average finca size.

The high correlation between acreage and production suggests that on a municipio basis yields do not vary substantially. Since management appears to be the chief determining factor, the indication is that managerial skills are distributed fairly evenly or, more likely, that in generalizing to the municipio level the precision necessary to show distributions in yields within the region is lost. Nevertheless, it is important that one variable, acreage, explains 95 percent of the variation in production. Together, the eight variables explain 52 percent of the variation in yields for the West. However, production, the single most important variable, explains but 22 percent of the yields in this region.

Average farm size for the Western Region also correlates more closely with production (.48), acreage (.52), and percent of land in coffee (.46) at the regional level than at the national level. Thus, municipios with larger average farm sizes tend to produce more coffee, have a greater total area, and have a high percent of land in coffee. On the other hand, average farm size in the West, unlike that of the Central-Eastern zone, displays virtually no relationship to yields. The high correlation between municipios with large average farm size and high levels of both production and acreage is related to the high correlation between beneficios secos and production and acreage, since larger farms are more likely to have dry mills.

Unlike the situation in the Central-Eastern and Cobán regions, altitude does not correlate to a high degree with any other variable in the Western zone. In fact, the correlations between altitude and the other variables are higher when computed at the national level, the only important exception to the proclivity for intra-regional correlations to exceed those calculated at the national level. In the West, for example, the correlation between average farm size and altitude is  $-.04$ , while for the entire country the corresponding figure is  $-.36$ . This condition, uncommon to the other two major regions and to the nation as a whole, is largely attributable to greater local relief. In the West, individual farms, and municipios to an even greater extent, are characterized by a relatively large range in elevation. Therefore, average altitude is less meaningful than in other areas and, consequently, the respective correlation coefficients are lower.

Due to the rugged topography of the West, farms and municipios have a greater tendency to be elongated in shape and situated parallel to the slope of the dissected piedmont. This relationship to the topography reinforces the tendency for individual municipios and farms to have greater ranges in elevation. Thus, larger farms in the West tend to have a more extended harvest season than those in the Central-Eastern Region. The degree to which the relatively prolonged season affects total labor costs has not been examined, but such information is pertinent to planning and worthy of further analysis. Different plans, techniques, substitute crops, and other aspects of diversification schemes should be employed here than are used in other areas. Extended

harvests might also indicate a need for different types of credit programs. Other implications might become apparent with further research.

As part of the preliminary investigations for the ANACAFE-FAO Diversification Project, a study was conducted of eighty farms located at elevations between 866 and 5,478 feet in the departments of Retalhuleu and Quezaltenango.<sup>2</sup> The results, some of which concur with findings of the present study, and some of which concern topics only indirectly related are summarized as follows: (1) yields per acre are virtually unrelated to altitude, (2) a high correlation (.69) exists between yield per acre and total production, (3) farms with high yields per acre tend to be located near main highways, and vice versa, and, (4) apparently no relationship exists between the number of workers employed per acre and the yield per acre. It was concluded that management is the single most important factor in explaining per acre yields. Conclusions (1) and (2) agree with the findings of this study for the Western Region only and are contrary for the Central-Eastern zone; (3) and (4) are not directly related to this study.

The Western Region is more diverse than the other two major regions, having greater local relief, number of farms, and production. Correlations and explained variances could undoubtedly be increased by eliminating several municipios which tend to have high and low residuals

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<sup>2</sup>"Esfuerzos de diversificación agrícola, programa de la Asociación Nacional del Café," from a statement by the Guatemalan government to the ICO to justify a requested increase in the basic export quota assigned to Guatemala (Guatemala: ANACAFE, 1965), 11-14. (Mimeographed.)



in the analysis. However, because these municipios do not form meaningful spatial patterns, and since their anomalous situations cannot at this juncture be resolved, their removal is not justified. Also, it is a distinct possibility that the anomalies are attributable to errors in the data.

#### The Central-Eastern Region

The Central-Eastern Coffee Region is comprised of the producing areas of the departments of Guatemala, Sacatepéquez, Santa Rosa, Sololá, Escuintla (except the municipio of Santa Lucia Cotzumalguapa), and Chimaltenango (except the municipio of Pochuta). This region is second to the West in importance, with 26 percent of the total national coffee acreage and 26 percent of the total production. Santa Rosa and Chimaltenango are the leading departments of the region in volume of production and coffee acreage, followed by Escuintla, Guatemala, Sacatepéquez, and Solola. Seven percent of all land in the producing municipios of the region is planted to coffee, compared with 15 percent for the West and 4 percent for Cobán. In the Central-Eastern Region, the coffee areas are more scattered than in the West.

In general, the Central-Eastern zone receives less precipitation and is cooler than the West. Annual temperatures and rainfall generally range from 60° to 70°F., and from 55 to 100 inches, respectively. A different position in relation to the Pacific Ocean and higher elevations of the coffee fincas account for lower precipitation and temperatures. The average altitude of coffee farms is 4,456 feet, compared with 2,652 feet in the West.

The higher elevations and a relatively well-defined dry season account for the overall higher quality of coffee produced in this zone. In contrast with the West, the coffee fincas are concentrated at altitudes between 3,000 and 5,000 feet. The Central-East produces 33 percent of the Semi-Hard Bean, 46 percent of the Hard Bean, and 60 percent of the Strictly Hard Bean coffees. On the other hand, this zone accounts for only 12 percent of the Good Washed, 16 percent of the Extra Good Washed, and 17 percent of the Prime Washed coffees. Virtually all coffee of the three latter types within this region is produced in the departments of Chimaltenango, Escuintla, and Santa Rosa. Another factor contributing to the higher overall quality of coffee from this region is the variety of coffee which predominates, namely arabica. Arabica makes up a greater proportion of the region's coffee, 35 percent, than in either of the other major producing regions.

The Central-Eastern Region, with 917 farms, or 41 percent of the total for the three regions, contains fewer farms than the West but more than Cobán. The Central-East has the smallest average farm size, 136 acres, compared with 239 acres for the West and 288 for Cobán. The larger farms are found in the departments of Santa Rosa and Chimaltenango, toward the periphery of the region, corresponding with the general tendency for larger farms of all types to be found at lower elevations and at greater distances from the capital.

Due to the higher altitudes and the varieties of coffee grown, yields per unit area are smaller here than in the West. The difference,



however, is not great: 5.2 quintales pergamino per acre, compared with 5.5 quintales per acre in the West. The reason for the slight difference, even though higher altitude coffees usually are poorer producers, is perhaps one of definition. The figures here are in terms of "production per unit area," which indicates nothing about the number of trees per unit area. Although yields per tree are lower in the Central-Eastern Region because of altitude and variety, terrain and other factors encourage the planting of more trees per acre and, hence, a relatively high yield per acre.

The higher quality coffee, smaller farms and lower yields per tree of the Central-Eastern Region suggest several hypotheses which have implications for planning and diversification programs. Farms of the Central-East are, in general, better managed and more intensively farmed. The fincas are smaller, probably more often owner-managed, and more intensively cultivated because of locations nearer Guatemala City, where land values tend to be higher. Proximity to Guatemala City also permits owners residing there to visit their fincas more frequently. A higher quality product, combined with higher wages and lower yields per tree, also encourages more intensive land use and better management. Because the farms are smaller and more intensively utilized, diversification schemes will be more difficult to implement. It is unlikely that the farmers in this region will be able to intensify production on part of their land, thereby maintaining production levels, while freeing land for other crops to the extent that this can be done in the West. Moreover, since economic returns to the land from coffee are probably greater



in the Central-Eastern zone, alternative crops will not show as much potential increase in profits as in the West. Assuming that the world market remains unchanged for quality high-altitude coffees, these farmers will continue to face less competition from other coffees of the world than will coffee farmers of the West.

Given more uniform elevations in the Central-Eastern Region, the coffee ripens more uniformly and creates a relatively greater demand for labor at a given time. Since emphasis in this region is upon quality, the urgency of the harvest is increased. Therefore, although labor costs per unit area are lower than in the West, the wages paid are actually higher. Wages, moreover, tend to be higher closer to Guatemala City. Cooler temperatures and lower precipitation render diseases and pests easier to control. Given these relationships of more intensive land use, greater returns to the land, and a narrower margin of profit, the Central-East is relatively "advanced" economically in coffee culture.

Only about fourteen fincas in the Central-Eastern zone have beneficios secos currently in operation, compared with fifty-eight in the West. The Central-East, however, contains sixteen commercial, urban-based beneficios secos, whereas the West has only eight. Of the commercial beneficios secos in the Central-East, eleven are located in Guatemala City, four at Amatitlán, and one in Antigua. Those in Guatemala City and Amatitlán, served by the interoceanic highway and railway, and located near the commercial center of the nation, process coffee from all parts of the Republic. San Lázaro, the beneficio in Antigua, is one of the most modern in Central America. It is both



húmedo and seco and is particularly important as a depository for cherry coffee from the Central-Eastern Region. In fact, the company which owns the facility is the largest buyer of cherry coffee in the country.

Statistical computations of data at the municipio level for the Central-Eastern Region are, like those for the other regions, higher than the correlations of the same variables at the national level. Furthermore, several of the correlation coefficients are higher than those for the Western Region, suggesting greater uniformity in the Central-Eastern zone. The correlations of variables for the Central-East are shown in Table 22.

TABLE 22  
SIMPLE CORRELATIONS AMONG COFFEE VARIABLES: THE CENTRAL-EAST

Variables		Simple Correlations							
1. Yields	1.00								
2. Production	0.14	1.00							
3. Acreage	0.02	0.98	1.00						
4. Av. Farm Size	-0.30	0.58	0.67	1.00					
5. Altitude	0.38	-0.29	-0.36	-0.44	1.00				
6. Distance <u>1/</u>	-0.39	0.01	0.05	0.10	-0.26	1.00			
7. Beneficios Secos	0.21	-0.01	-0.04	-0.04	0.13	-0.04	1.00		
8. % Area in Coffee	0.15	0.76	0.74	0.41	-0.19	-0.07	0.02	1.00	
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	

1/ From Guatemala City.

Source: Calculated from unpublished data from ANACAFE.

Yields in the Central-Eastern Region correlate most strongly with altitude (.38) and average farm size (-.30), and only slightly with production, acreage in coffee, and percent of land in coffee. This relationship is in contrast with the West. The negative correlation of yields and distance from Guatemala City is merely the antithesis of the correlation between altitude and yields, since the coffee areas of this



region at greater distances from the capital are also at lower elevations. Thus, contrary to the commonly accepted idea that fincas at lower altitudes are characterized by greater yields per acre, the better yields in this region are found on smaller farms, at higher elevations, and closer to the capital. Unlike the West, the greater producing areas are not the highest yielding areas. The municipios with the highest yields are found in the department of Sacatepéquez. Relatively good yields are common to the southern part of Guatemala department, and to several municipios scattered throughout the region. Thus, available statistics support the hypothesis that coffee farms in the Central-Eastern Region are generally better managed, are more intensively utilized, and have higher yields per acre.

Another significant comparison with the Western zone is the high correlation between average farm size and production. Large farms, although not realizing the best yields, account for a relatively large share of the production. Farm size also bears a negative relationship ( $-.44$ ) to altitude, again indicating the tendency for larger farms in the Central-Eastern Region to be located at lower elevations. Thus, for the nation as a whole, it appears that coffee production units can be regarded as existing along a continuum. At one pole are large farms with greater production, lower yields, more extensive land utilization, and lower altitude coffees. At the opposite pole are small, higher yielding, more intensively used farm units producing higher quality coffees. It would seem useful to classify these farm units and identify the areas occupied by the various types of farms, since the farmers in

one group will very likely react differently to diversification projects, for example, than those in other categories.

### The Cobán Region

Although located entirely within two departments, Alta Verapaz and Baja Verapaz, the Cobán Region consists of several relatively dispersed and non-contiguous areas of coffee production. It accounts for about 6 percent of the nation's production, on 10 percent of the total acreage under coffee. Alta Verapaz is by far the more important coffee producer of the two departments, with production in Baja Verapaz limited chiefly to the northeastern part of the department. Only some 4 percent of the total area of the producing municipios is planted to coffee, reflecting the dispersed nature of the production patterns. The percent of area in coffee is significantly reduced by several relatively large municipios in which only a small fraction of the area is devoted to coffee culture.

Annual precipitation and temperatures for the Cobán zone range from about 75 to 125 inches and 55° to 80°F., respectively. Although not apparent from the precipitation and temperature ranges, the Cobán district exhibits the greatest degree of climatic uniqueness of the three major regions. Dozier observes that:

Peculiar climatic conditions constitute the outstanding factor of the physical environment is the Cobán area and make of it a unique anomaly in the economic geography of the Guatemalan highlands. This uniqueness is expressed in: (1) its abundant and relatively well-distributed rainfall, with only a short, less-wet season in March; (2) its high humidity, manifested in low-hanging fogs and mists; and (3) its relatively mild temperature, despite its 4,180 ft. elevation. . . . The reasons for



the unusual climate of this highland zone lie in the fact that warm, moisture-laden winds from the Caribbean have an open passage through Lake Izabal and up the Cabare River into the cup-like Cobán basin, where they are lifted orographically by the surrounding mountains. It is a gradual lifting, as the winds drift in from the east, resulting in much cloudiness and reduced insolation, fog, and slow, drizzling rain. The higher temperatures (and slighter diurnal range) are due both to the marine effect and to cloud cover.<sup>3</sup>

The average altitude of the coffee fincas in the Cobán Region is 3,140 feet, or about midway between the corresponding figures for the West, 2,652 feet, and the Central-Eastern Region, 4,456 feet. Of the 166 coffee farms producing at least 50 quintales oro, 109 are between 2,000 and 4,000 feet, and 34 between 4,000 and 5,000 feet. With the wide range in elevation, the Cobán Region accounts for some, albeit small amounts, of each major type of coffee produced in Guatemala. Reflecting generally intermediate altitudes relative to the other regions, it produces a greater percentage of the national total of Extra Prime Washed than of any other type. This region also produces almost 10 percent of the Semi-Hard Bean coffee, but only about 3 percent of the Good Washed and Extra Good Washed, and 4 percent of the Strictly Hard Bean coffees. The year-round precipitation, high humidity and large number of cloudy days result in the production of coffees with a

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<sup>3</sup>C. L. Dozier, Indigenous Tropical Agriculture in Central America, Publication 594, National Academy of Sciences--National Research Council (Washington, D. C.: National Research Council, 1958), 64.



unique flavor often referred to as "Cobáns." These coffees are preferred on the German market, to which much of the region's coffee is shipped.<sup>4</sup>

The variety of coffee which predominates in this region is also related to coffee quality. Farms here tend to produce arabica, or arabica and bourbon. Only a few produce bourbon exclusively, which with respect to variety makes Cobán similar to the Central-East. However, two somewhat different subregions are included. The Polochic Valley tends to be more like the Western Region in coffee variety and quality, while the higher area to the west tends to be more like the Central-Eastern zone. The lack of a dry season and the high year-round humidity foster greater problems of pests and diseases of the coffee tree than are found in either of the other regions.

Of the three major producing regions, Cobán has the smallest number of coffee fincas (166) producing at least fifty quintales oro. This number of 7.4 percent of all coffee farms within the three regions and 6.8 percent of all coffee fincas in the Republic. The average farm size is 288 acres, compared with 136 acres in the Central-Eastern Region and 239 acres in the West.

Historically, coffee yields in the Cobán Region have been notoriously low, only 3.2 quintales pergamino per acre. This is well below the national average of 5.2 quintales per acre for all registered

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<sup>4</sup>Coffee is a beverage for which one acquires a taste, as opposed to having a natural desire for it. Therefore, the preference for a particular kind of coffee is also acquired. Since the Germans first exploited the Cobán Region and exported the coffee to Germany, this kind of coffee came to be preferred on the German market.



fincas in 1966/67. The relatively low yields of Cobán were observed as early as the 1870's: "The yield on the Pacific slope reaches three pounds per tree, and in specially favored spots as high as five pounds, while on the Atlantic side, in the Vera Paz, or Cobán district, only one pound is obtained."<sup>5</sup> The poor yields of the region are attributable largely to the relatively poor soil. The West has the deepest and richest accumulation of volcanic soils, followed by the Central-East. The soils of Cobán have developed primarily from limestone and serpentine. Not only do the poorer soils contribute to lower yields per tree, but their stoniness and low fertility also result in fewer coffee trees per acre. Thus Cobán, even more than the West, is characterized by extensive use of the land. Parts of the Polochic Valley, however, do have exceptionally good soils for coffee production.

Soils of the Cobán Region are suited to other forms of agriculture and thus do not present the major obstacle to crop diversification. Rather, the chief impediment to diversification is isolation and the lack of infrastructure in the region. Because of its physical and economic transportability, coffee has few competitors as a commercial crop in the Cobán zone. Accessibility once constituted an asset of this district, the coffee moving by mule and Indian carriers, and later by rail, to the Río Polochic and thence to the Atlantic via Lake Izabal and the Río Dulce. Construction of the interoceanic railway and highway

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<sup>5</sup>Francis B. Thurber, Coffee: From Plantation to Cup, a Brief History of Coffee Production and Consumption (New York: American Grocer Publishing Association, 1889), 152.





systems, however, have left Cobán by far the most isolated of the three regions, and thus the one in which agricultural diversification appears least promising.

Compensating in part for isolation and high transportation costs is a relatively cheap and plentiful supply of labor. The following statement, written in 1947, remains appropriate today:

From two to three times as many man-days of labor are required to place a hundred pounds of green coffee beans at a transportation center as in that more favored region [the West], where the man-day average is 12 to 18 per hundred pounds. Much of the increased cost is due to the lack of highways, which obliges plantation owners or finqueros to transport their crops by pack mule over long distances. Because good soils are limited and are generally found in isolated swales, the coffee groves on a single plantation are sometimes widely separated. Overhead expenditures also exceed those of the Pacific coast; consequently, if it were not for the lower daily wages of the local plantation laborers, which amount to about ten cents for a normal daily task, the growers could not afford to remain in business. I once asked a prominent local businessman why he thought so highly of a region that to me appeared generally submarginal for commercial agriculture. 'Not the soil but rather the low wages of our laborers are the wealth of the Cobán,' he replied. 'Without them we could not exist.' This region contributes between 6 and 9 percent of Guatemala's annual coffee production.<sup>6</sup>

Undoubtedly, the relatively cheap and abundant labor supply is one of the resources of the region. When the barriers of isolation are broken, wages will probably rise with competing demands for labor. Although delayed, diversification may then occur more rapidly than in other coffee areas.

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<sup>6</sup>E. C. Higbee, "The Agricultural Regions of Guatemala," The Geographical Review, Vol. XXXVII, No. 2 (April, 1947), 190. Schmid in "Productivity of Agricultural Labor in the Export Crops of Guatemala," Inter-American Economic Affairs, Vol. 22, No. 2 (Autumn, 1968), 36, confirms the number of man-hours required to produce one quintal of coffee.



Isolation and German colonization have also affected the processing and transportation of coffee of the Cobán Region. Dozier notes that:

The coffee zone of Cobán is not a contiguous area as is the case on the Pacific slope. As in the coffee zones of Honduras, the topography is rugged and presents many different degrees of local exposure to moisture. As a result, the fincas are widely scattered, and separated by unused forest land or pasture land. Cobán is the nucleus of the zone, serving as a market and distributing center for the fincas and the numerous Indian villages in the area, but does not itself have extensive coffee production in its immediate environs, nor does it have the numerous coffee beneficios one finds in the Pacific slope towns. A zone of large, formerly German-owned, coffee fincas, most processing is done on the plantations themselves, while native small growers, as usual, sell their coffee in the cherry. Besides being a market and distributing center, Cobán was formerly the residence of many large coffee-growers.<sup>7</sup>

The region has twenty-five beneficios secos, all but three of them located on fincas. The number of mills, far out of proportion to the region's production, is related to isolation, poor roads, large farms, and an adequate water supply for beneficios húmedos. The West has only sixty-six beneficios secos and the Central-Eastern Region but thirty beneficios secos, despite the fact that they account for 63 percent and 26 percent of Guatemala's production, respectively, while Cobán accounts for only 6 percent.

The Cobán Region is unique in yet another respect. It has the largest number of National Fincas, twenty-seven, if those of all types are included.<sup>8</sup> If only those producing coffee and under INTA

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<sup>7</sup>Dozier, 65.

<sup>8</sup>INTA, unpublished data for 1967.



administration are considered, the West contains a greater number. But, the expropriation of German-owned fincas and the erratic policies followed with regard to their administration have affected the Cobán Region to a much greater degree than any other. According to Dozier:

Having been the region of greatest German settlement and interests, Cobán consequently has a large number of 'fincas nacionales' -- some of the largest and formerly most productive coffee plantations. The effects of inefficient management and labor, with consequent lowered production, are manifested clearly in the Cobán of today. While the Germans were there, it was a thriving town, a center of commercial activity. Today it is relatively dead -- 'given back to the Indians' -- so to speak, for its economy, like that of many another Guatemalan highland town, revolves mainly around local Indian exchange rather than reflecting large-scale coffee interests. The merchandizing and consumer market formerly provided by German residents is no more, and extreme conservatism is the predominant note.<sup>9</sup>

The correlation coefficients of the variables for the Cobán Region present interesting comparisons with the other major regions, although the small number of municipios (eleven) within it makes inter-regional comparisons somewhat less meaningful. Nevertheless, available statistics do demonstrate the uniqueness of the zone. The variable of "distance from Guatemala City" is deleted from Table 23 because it is meaningless within the region.

The relationship of yields to the other variables resembles that in the West in that they correlate more closely with production (.49) and acreage (.42), than with other variables. But, as with the Central-Eastern Region, a somewhat higher correlation is evident between yields

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<sup>9</sup>Dozier, 65.

and altitude (.33). That yields correlate positively with production and acreage, but not with percent of land in coffee is probably due in part to the relatively large size of some of the municipios. Thus, as in the West, the municipios of greater production and coffee acreage tend to have the highest yields. Unlike the West, and more like the Central-East Region, higher average altitudes show a tendency toward higher yields.

TABLE 23

## SIMPLE CORRELATIONS AMONG COFFEE VARIABLES: THE COBÁN REGION

Variables	Simple Correlations						
1. Yields	1.00						
2. Production	0.49	1.00					
3. Acreage	0.42	0.98	1.00				
4. Av. Farm Size	-0.03	0.49	0.56	1.00			
5. Altitude	0.33	-0.17	-0.19	-0.74	1.00		
7. Beneficios Secos	0.22	0.61	0.66	0.43	-0.16	1.00	
8. % Area in Coffee	0.25	0.63	0.63	0.36	-0.15	0.39	1.00
Variables:	(1)	(2)	(3)	(4)	(5)	(7)	(8)

Source: Calculated from unpublished data from ANACAFE.

A fairly strong relationship exists between average farm size and altitude. To a greater degree than in either of the other regions, those municipios with greater average farm size are at lower elevations. In fact, altitude alone explains 55 percent of average farm size. Production and acreage, combined with altitude, increase the explained variance of average farm size to 82 percent. As with the West, the data display virtually no relationship between yields and average farm size.

As elsewhere, the relationship between acreage and production is strong (.98). In explaining acreage, production alone results in an  $r^2$

value of .97, while average farm size, the next most important variable, merely increases the explained variance to .98. Reflecting the tendency for beneficios secos to be located on fincas, as in the West, but unlike the Central-East, the correlations between beneficios secos and production and acreage are relatively high (.61 and .66, respectively). The results of the statistical analyses tend to support the basic generalizations and observations concerning the Cobán Region and its relationship to the other coffee-producing regions.

#### Subregions within the Major Regions

Altitude is perhaps the most significant criterion for identifying subregions within the three principal coffee producing districts of Guatemala. Altitude influences variety and, especially, quality and prices. It is also a universal factor, readily identifiable from crop reports, topographic maps, and other sources of information.

Each of the three major coffee regions can be divided readily into two subregions, based primarily upon altitude. In each case, one of the two subregions represents what might be termed the "core". That part of the Western Region below 4,000 feet, for example, produces over three-fourths of the nation's Good Washed, Extra Good Washed, and Prime Washed coffees, and well over half of the Semi-Hard Bean and Hard Bean coffees. This subregion, moreover, includes 86 percent of the West's coffee farms. The subregion of high-grown Western coffees is not incorporated into the Central-Eastern Region primarily because of climatic differences, although depending upon one's objectives such incorporation might be



considered. Inclusion of the Western coffee areas with elevations over 4,000 feet as part of the Central-Eastern Region, however, would render the latter non-contiguous.

The Central-Eastern Region is even more obviously divided into two subregions: the Central and the East. With the possible exception of one or two municipios, the Central subregion consists of the departments of Chimaltenango, Guatemala, Sacatepéquez, and Sololá, and the East consists of Escuintla and Santa Rosa. Such a division coincides with farm size, the Central subregion being nearly devoid of large farms.

The two major subregions of Cobán include a higher, dispersed western subregion and a lower, more concentrated area in the Polochic Valley. Not only altitude, but climate and soils suggest such a division. Moreover, coffee experts in Guatemala recognize coffee from the two sources as distinctly different in quality and flavor, with the term "Cobáns" referring only to those coffees grown in the western subregion.

Smaller subregions within the major coffee zones are also evident. One is a rather small area west and southwest of Lake Atitlán, consisting primarily of two municipios, San Juan La Laguna, in Sololá, and Santa Tomás La Unión, in Suchitepéquez. Both municipios have especially high yields per acre, at least statistically. The subregion, however, is characterized by small producers selling to larger growers, who report the production but not acreage and thus falsely inflate the data on yields. The subregion is an Indian area which is isolated and traditional in many respects including coffee growing and processing methods.

For many years the Indians were exploited by buyers who, taking advantage of the monopsony situation resulting from the remoteness of the area, paid prices well below the going rate. Now ANACAFE has three cooperatives within the general area which have, or are constructing, *beneficios húmedos*. Plans are also underway to exert pressure for higher local prices by purchasing coffee at or slightly above market prices without regard to profit. Another subregion is an area around Antigua characterized by old, well-managed farms of small size producing quality coffee. The subregion is famous for "Antiguas," a special "Fancy Hard Bean" coffee of superior quality. The Antigua subregion is likewise an area of high yields per acre. This area may be a prime example of high yields, better management, and more intensive farming.

#### Outlying Areas

Those districts of coffee production located outside of the major regions are identified by the name of the department in which they are found. The most important of these is Huehuetenango. This district consists of three separate areas: One in the northeastern part of the department, focusing on the town of Barillas; one in the southwestern part of the department; and another, the largest, in the west-central part. Farms tend to be of small or medium size, with only one farm exceeding 540 acres. Yields per acre are average to good, except near Barillas where yields appear to be very poor. Huehuetenango accounts for about 2 percent of the nation's acreage under coffee and approximately the same percent of total production. Average altitude is high,

4,663 feet, and reflects the type of coffee produced. There is more Strictly Hard Bean than any other type. Although many of the larger farms have beneficios húmedos, apparently none have beneficios secos. The area is frequently considered to be one which produces quality coffee but in which poor processing techniques are employed. Nevertheless, in some recent years fincas in Huehuetenango have won the annual coffee contest sponsored by ANACAFE. Huehuetenango has six cooperatives and more cooperative members than any other department in Guatemala. All but one of the cooperatives, including the cooperative with the largest membership in the Republic, are located in the west-central part of the department.

The department of El Quiché also has several areas of coffee production, which are generally similar to the western Cobán subregion. Higbee, in fact, includes the coffee area around Barillas, Huehuetenango, the outlying district of El Quiché, and the western subregion of Cobán in a single agricultural region entitled "Cobán and Zona Reina Hills and Valleys."<sup>10</sup> Relatively low yields, extensive land use, dispersed and isolated areas of production, small farms and a few very large holdings, and altitudes above 4,000 feet typify the Quiché area. Some of the farms in this outlying area and in the western subregion of Cobán are among the most isolated coffee fincas in Guatemala.

Another outlying area is eastern Zacapa, in the municipios of La Unión and Gualán and extending into the municipio of Los Amates, Izabal. Four farms in the area exceed 540 acres under coffee, and several others

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<sup>10</sup>Higbee, 189.

are of intermediate size. The area accounts for about 1 percent of the nation's production and coffee acreage and produces several types of coffee. A unique feature of this area is that, due to a relatively dry climate, much of the coffee is processed by the dry method and marketed domestically as unwashed coffee.

Numerous very small areas of coffee production are scattered throughout the departments of Chiquimula, El Progreso, Jalapa, and Jutiapa. These widely dispersed enclaves of coffee production are comprised chiefly of small producers. Many that produce more than fifty quintales oro are not yet registered with ANACAFE, and many others produce only smaller amounts of coffee. Of the registered producers, the most important are in the municipios of Mataquescuintla, Jalapa, and Atescatempa and Moyuta, Jutiapa.

## CHAPTER VII

### COFFEE COMMERCE WITHIN GUATEMALA

The internal coffee trade includes all of the intricate commercial transactions between coffee production and export or domestic consumption. These transactions comprise a facet of the coffee industry as important as production or exportation per se and are equally in need of research and understanding by planners and policy makers. Consideration of these diverse business dealings and relationships constitute, moreover, an essential prelude to an examination of the geographic movement of coffee within Guatemala.

#### From Producer to Exporter or Domestic Consumer

Commercial coffee producers may be classified into five groups: (1) producer-exporters, (2) producers who sell primarily to one exporter, (3) producers who sell to more than one exporter and to domestic roasters, (4) small producers who sell primarily for export and, (5) small producers who sell primarily to the domestic market. Figure 3 is a schematic diagram of the commercial "paths" of coffee beginning with the five categories of producers. It should be noted that these categories are not, in reality, well-defined. The actual situation is a continuum. Moreover, discussion is here limited to commercial producers, those who sell at least part of their crop. Most producers retain some beans for personal use.

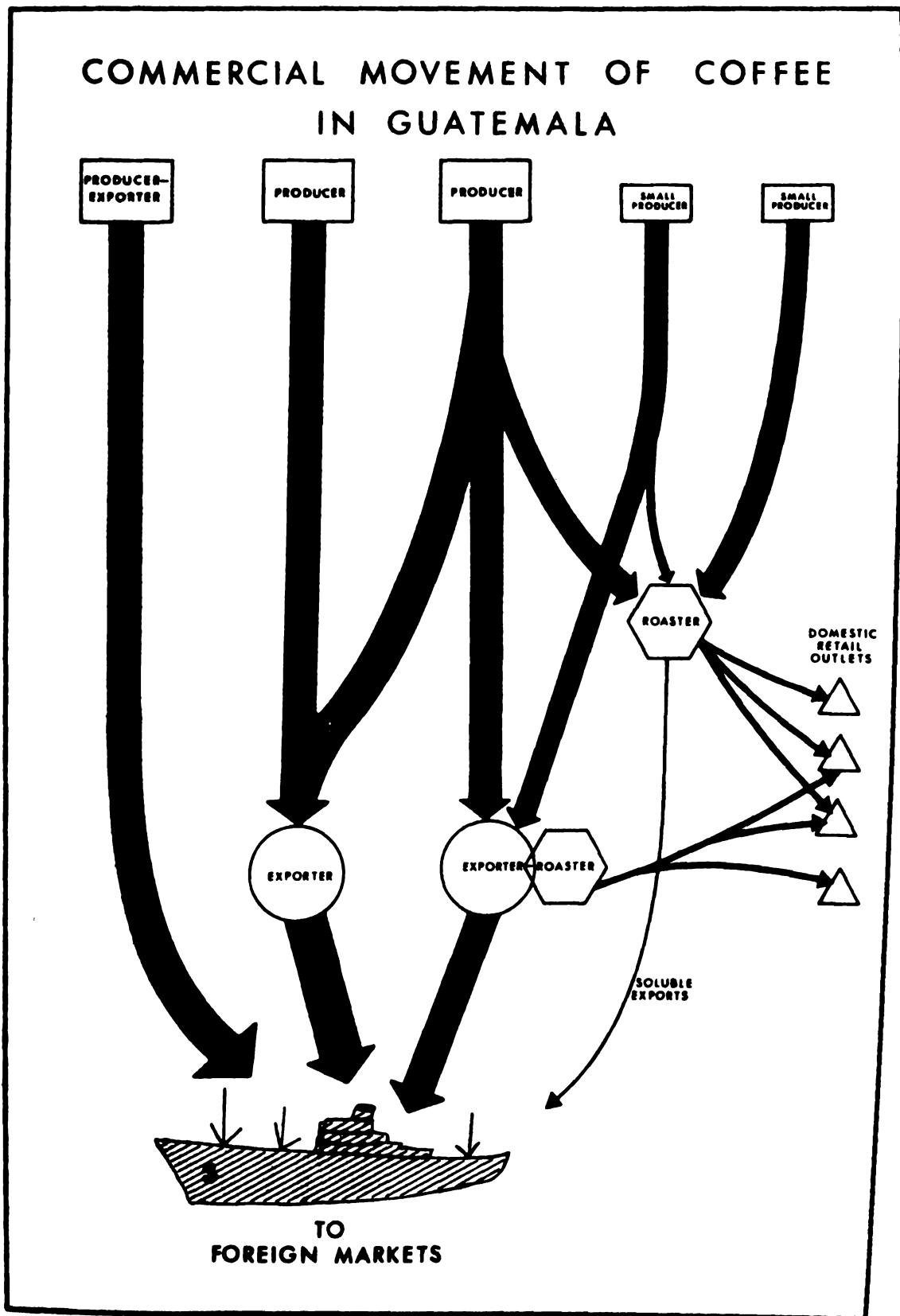


Figure 3

Producers who export their own crop conduct the least complicated domestic commercial transactions, because they do not deal with local buyers. Since these are usually large farmers, often with more than one finca, they tend to produce several types of coffee. Frequently they export the higher quality coffees, while selling those of poorer grades domestically. They may roast part of their coffee crop, not only for personal use but also for package or bulk sale to local shops or directly to consumers. They also may purchase coffee from small local producers, friends, or others for either export or domestic sale. The degree to which these local sales, roastings, or purchases occur may vary considerably from year to year depending upon the quality and quantity of the harvest and upon market conditions. Thus, the category includes those producers who export primarily their own coffee, but excludes those who are primarily exporters and merely produce some of their own coffee.

Producers who sell almost exclusively to one exporter often enjoy certain credit or other financial arrangements with a large exporting firm by virtue of family or friendship ties, or simply a long-standing business relationship. Such producers are usually fairly large and dependable suppliers of good quality coffee. They may sell some coffee to other exporters and some to domestic roasters. In years of large crops and promising market conditions they may even export some of their coffee. Producers in this group may purchase coffee from smaller neighbors as well. In most years, however, they sell primarily their own coffee to a single exporter.

Some producers sell to several exporters and/or domestic roasters. Producers in this group frequently seek the best market and are not bound to any one exporter. Considerable variation in procedure exists not only among growers, but for the same grower from year to year.

Producers of less than fifty quintales of coffee in oro may sell either primarily for export or for the domestic market. The quality often determines whether coffee is consumed locally or enters international trade, and a grower may not realize the same quality every year because of the effects of pests, diseases, and natural production cycles. Small growers are never able to export their product directly but must sell to larger producers, exporters, or firms supplying the domestic market. Cooperatives of small producers tend to sell directly to one or more exporters or to domestic roasters. None export coffee directly. Coffee from the Fincas Nacionales must, by law, be sold at public auction to exporters or local roasters.

In the main, then, producers sell to other producers, exporters or domestic roasters, any of whom may resell the coffee prior to export or domestic consumption. The sale of coffee by one grower to another is direct and is usually to a nearby farmer. Selling to exporters begets a greater number of alternatives. In the past, for example, and to a minor extent yet today, certain individuals earned a livelihood by purchasing coffee from remotely located smaller growers and selling to exporters. These middlemen were previously required to register with ANACAFE as "Class B Buyers," Class A being those who exported coffee and did not resell it locally. The registration of such buyers, of whom



there are now few, is no longer required. Large exporters often maintain agencies at various locations to act as receiving stations or at least as offices where contracts are concluded. Occasionally the agencies are coffee producers which receive the coffee of the respective finca and process and/or store it under contract with the exporter. Other exporters own farms which are used as agencies or have beneficios and/or warehouses, where coffee is received, at various locations. Some exporters send agents into the countryside to contract smaller producers for the coming crop. Although most coffee is contracted for prior to the actual harvest, some producers prefer to present samples of their coffee at the offices of the exporters and request a price quotation for a spot sale. These producers, actively seeking the best price, do not sell to the same exporter every year.

Another type of immediate market for the producer is the domestic roaster. Roasters are found in all parts of the country, but particularly in Guatemala City, where more than sixty local brands of coffee could be found in February, 1969. The larger roasters, frequently owned by coffee exporters, are of course relatively stable. Owners of smaller roasters apparently enter and leave the market with ease, judging from the widely fluctuating number of such businesses and brand names. Exporter-roasters generally export higher quality coffees and roast those of lower quality for domestic sale, after grinding and packaging. In such cases, the coffee destined for the local market is purchased through the same channels as the coffee for export. Other roasters, concerned solely with the domestic market, transact for coffee in similar fashion

except on a smaller scale, more often purchasing only lower grades of coffee. Many fincas roast and grind coffee for personal consumption as well as for sale in bulk to local merchants or even directly to consumers. Bulk coffee, usually of low quality, and sometimes with non-coffee additives such as ground maize or tortilla flour, can be purchased in the almost ubiquitous small shops or "tiendas" for as little as five cents per pound. The better local coffees, however, are sold in cellophane packages. The INCASA firm in Guatemala City purchases coffee from all parts of the country, roasts it, and manufactures soluble coffee, but only about 5 percent of it is marketed domestically.

ANACAFE purchases relatively small amounts of coffee from small producers and either roasts it for the local market, resells it, or exports it. There are plans to expand this program, which exists primarily to exert an upward pressure on prices paid to small producers. In the past, the Association has rented processing facilities, but the possibility of constructing or purchasing such facilities remains open. ANACAFE's finca, Buena Vista, includes a small beneficio húmedo. The Association also has its own roaster and retail outlet for packaged coffee on a small scale.

The Banco Agrario Nacional also purchases coffee from small producers and processes it on its fincas. Some of these farms were acquired through foreclosure, and others (Fincas Nacionales) were given to the Bank in payment of government debts. Like the coffee from National Fincas under INTA, that from these farms must be sold at public auction. Purchases of coffee by the Bank are likewise an attempt to encourage higher prices to small growers.

### Problems of Coffee Commerce in Guatemala

Four features of the internal coffee trade warrant special attention, not only because of their critical commercial roles, but also because in one way or another they represent serious problems to the industry: credit and finance, export quotas, taxation, and processing and storage. These are interrelated among themselves and with other phases of the industry. In many respects, they illustrate the most obvious needs for reform and are areas in which changes may be implemented to benefit the entire industry.

#### Credit and Finance

Agricultural credit in Guatemala, as in most developing countries, is difficult to procure. There is no comprehensive law or national program for agricultural financing. Nevertheless, since most of the banks are commercial, financing is somewhat more available for export crops than for other types of agricultural commodities. Long-term loans for diversification can usually be obtained only through government banks.

One method in which coffee growers obtain credit is by means of a "crop-loan." Under the crop-loan arrangement, the exporter legally assumes the responsibility of first paying the bank and then the grower at the time the coffee is purchased. Fincas may also be mortgaged to obtain credit in times of crises, but this hardly answers the need for such short-term financing as might be needed to harvest a crop. Mortgage

foreclosures, moreover, are usually undesirable from the bank's point of view, because the arrangement may involve operating a farm until such time as it can be sold.

Farmers are sometimes financed by exporters, who demand interest rates of about 12 percent. Banks, on the other hand usually get between 8 and 10 percent interest. An exporter financing a producer, usually on the anticipated crop, in time, naturally secures a kind of de facto control over him. In many cases the exporter is financed from the United States or Europe. Thus, he is not completely free to sell to whom he pleases, but is financially committed to the crediting firm. The latter is usually an importer, who may in turn be financed by another source. The result is a series of commitments involving greater or lesser degrees of control, which implies that foreign capitalists exert considerable indirect influence on the local coffee industry even down to the finca level. Another result is that coffee, even before it is harvested, is often already "owned" by a firm or company abroad. These financial entanglements are disliked by many Guatemalans who view such activities as "economic colonialism." The danger of such financial arrangements is obvious: the economic health of foreign financiers is paramount to the local industry. Unfortunately, without domestic sources of credit, there appears to be no reasonable alternative to foreign financing.

#### The Export Quota System

As a member of the International Coffee Agreement, Guatemala is assigned a basic export quota and also an annual export quota. The

latter is the basic quota adjusted to the current world supply and demand situation. Guatemala's 1968/69 basic quota was 1,800,000 bags (of 60 kilos), while its annual quota was 1,538,021 bags. The annual quota is divided into three-month periods, and adjustments are also made on a quarterly basis.<sup>1</sup>

The annual quota assigned to Guatemala is distributed among the individual coffee fincas. As at the international level, the size of the quota is dependent upon past production. Each finca was originally assigned a basic quota according to its best crop in the three-year period 1961-64. Attempts are under way, however, to improve the accuracy of quota distribution through field investigations and particularly through checks on requests for increased quotas. Since adjustments are made in the size of Guatemala's quota, modifications must likewise be made in the annual quotas of individual fincas. The basic quota remains the same, however, unless reason is found to adjust it on the basis of an unfair original allotment. It is significant that the quota is assigned to the finca, rather than to the owner, and remains with the finca if ownership is transferred. If a finca's quota is not filled for several years, it may be reduced. This condition leads to the purchase of coffee from smaller non-quota neighbors, or from neighbors whose production exceeds their quota, and resale as if it were produced on the finca. Also, a good profit can be realized from buying non-quota coffee

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<sup>1</sup>For a detailed explanation of the international quota system see World Coffee Information Center, International Coffee Agreement, 1968 (New York: Pan American Coffee Bureau, 1968); or Annual Coffee Statistics, 1968, No. 32 (New York: Pan American Coffee Bureau, 1969), 5-12.

and selling it with quota. Since new coffee plantings are prohibited by law, requests for quotas for new or expanded fincas per se do not constitute a problem.

In 1962, when the quota system was implemented, many coffee fincas in Guatemala were unregistered. The restriction of quotas to registered farms, however, accelerated the process of registration. Currently, most of the large fincas are registered, but the arduous task of registering small producers continues. The small growers have been particularly difficult to register not only because of inaccessibility and apathy, but because some producers and exporters who normally purchased coffee from these people spread false rumors about the registration. They tell the Indians, for example, that ANACAFE is taking a census of coffee trees in a plan to uproot some trees and to place a heavy tax on the others, that the registration will lead to a land tax, that plans are being made to force everyone to sell their coffee to the government at the lowest of prices, or that the registration is a cleverly devised method of conscription into the armed forces.

Why are rumors spread as an attempt to defeat the registration of small coffee growers? The reason is simply that "quota coffee," or coffee which can be included under a quota, is worth more money as an export to "traditional markets." That is, as members of the Agreement, the United States and many European countries cannot import non-quota coffee. Non-quota coffee can, however, be exported to "new markets" or countries that are not members of the Agreement, such as Japan. The non-quota markets are open to competition from all producing countries,

and therefore the export price of non-quota coffee is lower than that sold under quota. Without the registration of small producers, ANACAFE was forced to rely upon lists of small producers submitted by exporters, giving the quota directly to the exporter. Under this system the exporter could and, often did, falsely inflate the lists of producer names to obtain larger quotas. The exporter could then realize abnormally high profits by selling coffee at quota prices which was purchased at non-quota prices. The inflated lists also resulted in high estimates of the total number of small producers. Most estimates were between 40,000 and 50,000. Registration has led to revised estimates of 25,000 to 30,000 and will eliminate the opportunity for exporters to take advantage of the system in this manner. In fact, the small grower may gain an advantage. He may be able to sell the quota without the coffee, for example, if his crop fails or if he finds a market for non-quota coffee. However, this would not as seriously threaten the system as in the case of the exporter.

The quota, issued to the producer, accompanies the coffee when it is sold. The exporter must present the quota to obtain permission to export the coffee to a member country of the Agreement. Although the quota is not restricted to coffee from the finca to which it is assigned, it can only be used during the quarter for which it is intended. This means that although an exporter may buy all of a grower's coffee at one time, he may only export it according to the percentage allotted for each quarter. Thus, for example, if an exporter received an order for 1,000 bags of coffee, he might actually have to purchase 4,000 bags so as

to have sufficient quota to ship the 1,000 bags in one lot, or in one quarter. The quarter allocation of quota for a given finca is not usually 25-25-25-25, but perhaps 30-30-20-20 or 35-35-15-15. Moreover, the exporter must have the necessary types of coffee to fill a particular order. In summary, the quota system and, especially the four-quarter aspect of it, has substantially complicated the coffee export business.

In addition to complicating the export phase of the industry, the quota system has placed a more severe financial burden upon the producer. As usual, the small producer encounters the greatest difficulty. Since the exporter theoretically cannot ship all of a particular finca's coffee in one quarter, the farmer is often paid in quarterly installments, despite the fact that he may "sell" his coffee in one transaction. If the farmer has a crop-loan, the bank will probably get a large portion of the first quarterly payment. Frequently this leaves the farmer short of capital with which to complete the harvest or to do other essential work on the finca. Thus, he may be forced to negotiate another loan, if possible, to "tide him over." On this loan he must, of course, pay interest. The amount of interest represents a reduction of his profits as calculated prior to the quota system. A credit cycle has thus been initiated which will be difficult for the small farmer to elude and which makes him increasingly susceptible to the vagaries of the financial system.



### Taxation

Since exports and imports are from an administrative point of view more easily taxed than domestic transactions, Guatemalan coffee farmers tend to bear a disproportionately large share of the total tax burden. Moreover, since duties on coffee other than export taxes are not graduated in proportion to income or production, small producers feel the tax burden most keenly. Like other agriculturalists, the coffee farmer pays an income tax, a property tax, and special assessment taxes. All, however, are at relatively low rates. The exporter pays an income tax, an export tax, a tax to ANACAFE, a municipio tax, and an ad valorem government tax. The exporter passes all of these taxes, except the income tax, on to the producer in the form of lower prices. Thus, the producer actually pays the export tax, calculated ad valorem on the domestic price; a tax of twenty-five cents per quintal oro to ANACAFE; fifteen cents per quintal oro to the municipio; and a 1.5 percent ad valorem tax to the government.

The export tax, computed on the basis of the price of coffee quoted in the sale contract with the exporter, is collected when the contract is presented for registration to ANACAFE. For producers who export directly the tax is calculated from the F.O.B. price, but the final rate is similar. The twenty-five cent tax per quintal oro is paid directly to ANACAFE by the exporter. Prior to extending authorization to ship the coffee, ANACAFE requires verification of the payment of these taxes. The 1.5 percent ad valorem tax, however, is paid directly to the government, with the purchase of stamps required on the

bill of sale. If a producer exports his own coffee, there is no internal sale and the payment of this tax is thus avoided.

The exporter also pays the municipio tax of fifteen cents per quintal oro to the Instituto de Fomento Municipal (INFOM). The municipio in which the coffee was produced is then credited for the amount of the tax received by INFOM.

### Processing and Storage

Somewhere between production and exportation the coffee is processed. The location of processing varies regionally and with farm size. In general, large producers tend to sell in pergamino or oro, smaller growers in cherry. Producers who export their coffee, of course, process it to oro, usually on the finca. But, within limits, size does not seem to be as important a factor in determining whether or not a finca will have a beneficio húmedo as does accessibility. To sell coffee in cherry requires dependable transportation facilities. The weight-loss from cherry to pergamino varies according to altitude, but 250 quintales of cherry coffee will usually equal between fifty and sixty quintales in pergamino. Thus, the 5:1 weight-loss ratio will ultimately limit the distance that cherry coffee can be economically transported. However, in Guatemala, the need to process the cherries soon after harvesting seems to be more of a limiting factor than weight loss. With improved transportation, one would therefore expect fewer beneficios húmedos and more sales in cherry. Such a trend does appear to be in evidence, especially in the Central-Eastern Region. In El Salvador, where better roads, shorter distances, and a less rugged topography are

found, much more of the coffee is sold in cherry. From a standpoint of quality for Guatemala as a whole, the sale of coffee in cherry is advantageous, because fewer, more modern beneficios would yield a more uniform and higher-quality product. Coffee could, in addition, be more easily inspected by ANACAFE or the government. Changes in processing to pergamino between the producer and exporter have not, however, been altered in recent years as much as in processing from pergamino to oro.

Two facts are of outstanding commercial importance regarding the beneficio seco stage of processing: (1) the weight-loss ratio of converting pergamino to oro is not nearly as significant relative to transportation costs as is that from cherry to pergamino. The pergamino to oro ratio, although varying with altitude, is about 125 lbs. of pergamino to 100 lbs. of coffee in oro. Thus, 250 quintales cherry = 50 to 60 quintales pergamino = 45 to 50 quintales oro. (2) coffee can be stored for longer periods of time without loss of quality in pergamino form than in oro. Hence, whether the producer or the exporter processes the coffee is not so much influenced by transportation costs as by storage.

Prior to the quota system, many large and medium-sized fincas processed coffee to oro. In fact, in past decades farmers displayed a greater tendency to export their own coffee. The four-quarter quota system, however, has brought about the need for stocks. Since an exporter must purchase enough coffee to obtain sufficient quota for large shipments, he must be able to store the remainder for shipment in subsequent quarters. The exporter therefore prefers, and often insists upon, buying the coffee in pergamino. The added complications and greater

capital requirements brought about by the four-quarter quota system have tended not only to reduce the number of farmers exporting their own coffee, but also the total number of exporters. The exporter has likewise been encouraged to mill the coffee, since he purchases and stores it in pergamino. Another reason why exporters prefer to purchase in pergamino is that this permits them to make the necessary blends and mixes during the milling stage. Otherwise the coffee must be removed from the bags and mixed, thus increasing handling costs. Moreover, the more processing an exporter does, both in degree and amount, the more he can be assured of high and uniform quality.

The tendency for coffee to be processed to oro by the exporter is stronger in some regions than in others. Many farmers, although selling their best coffees in pergamino, continue to mill lower grades for the domestic market. Others insist upon processing the coffee to oro before selling it to the exporter. Some farmers mill the coffee because the beneficio seco facilities already exist on the finca from past decades when such equipment was necessary or economically advantageous. Hence, if available without investment, or at only minor costs of repair and upkeep, the farmer feels he can make a greater profit by using the machinery and selling in oro. But, the use of out-moded equipment in some cases impairs quality and may result in a lower price. Thus, there appears to be a definite trend for the exporter to perform the final milling operations, which wanes in years of particularly large crops and/or favorable market conditions. This trend can be influenced by domestic tax policy, such as the possibility of avoiding the 1.5 percent tax by direct exportation; transportation; the availability of capital;

and foreign market conditions. Another trend, less obvious, is toward less processing of cherry coffee by the producer, particularly as transportation conditions improve.

It is difficult to obtain data on internal prices paid for coffee because: (1) prices vary from week to week; (2) prices vary with regard to type, quality, and particular foreign market; (3) exporters are reluctant to disclose prices for fear of aiding competitors; (4) growers are usually aware of the fluctuating prices of only their particular type and grade; and (5) since the topic is so controversial, data are necessary from a variety of sources to be regarded as entirely dependable. Average prices are available from ANACAFE and the Banco de Guatemala. Such figures, however, are theoretical, obtained by conversion from average F.O.B. prices by means of standard conversion ratios based upon cherry-pergamino-oro weight loss relationships. In reality, prices may not be equal to the results of this method of computation, particularly with regard to the less well-informed smaller producers. Therefore, a precise evaluation of the economic advantages of processing coffee, as opposed to selling it unprocessed or partially processed, is virtually impossible. The following example, however, clearly illustrates at least the general price-cost relationships of the domestic coffee trade. The prices and costs are hypothetical, but reasonable, for the year 1967/68. All costs and prices are expressed in dollars per quintal.

Symbols:  $P_c$  = the price of cherry coffee  
 $P_p$  = the price of pergamino coffee  
 $P_o$  = the price of green coffee  
 $P_{fob}$  = the F.O.B. price of coffee  
 $C_h$  = beneficio húmedo costs  
 $C_s$  = beneficio seco costs  
 $T$  = transportation costs  
 $D$  = duties and taxes  
 $S$  = storage costs  
 $B$  = cost of empty bags  
 $H$  = port handling costs

Conversion Rates: 4.6 = the conversion rate for pergamino

1.235 = the conversion rate for oro

Formulae:  $P_p = P_c(4.6) + C_h$   
 $P_o = P_p(1.235) + C_s$   
 $P_{fob} = P_o + T + D + S + B + H$

Example:

\$ 5.00	.....	$P_c$	(varies \$3.00 to \$6.00)
<u>x4.6</u>	.....	Conversion rate	(varies from 4.25 for high grown to 5.25 for low grown coffee)
\$23.00			
<u>+\$2.50</u>	.....	$C_h$	(varies approx. \$2.25 to \$3.00)
\$25.50	.....	$P_p$	
<u>x1.235</u>	.....	Conversion rate	(varies from 1.2 for high grown to 1.3 for very low grown coffee)
\$31.49			
<u>+\$0.67</u>	.....	$C_s$	(varies from \$0.67 to \$0.75 as a rough estimate and does not include hand-sorting)
\$32.16	...	$P_o$	
	.....		
\$10.00	.....	According to data from the Banco de Guatemala,	
\$42.16	.....	$P_{fob}$	the average price in 1966 for coffee in oro was \$31.69 and for F.O.B. was \$41.02. Therefore, \$10.00 is the rough estimate for $T+D+S+B+H$ , and is added to $P_o$ .

The hypothetical nature of the above example must be emphasized. Prices and costs vary considerably, both regionally and through time. For example, wages of laborers working in a beneficio seco, including women who frequently hand-sort the beans after final processing, tend to decrease away from Guatemala City. Hand sorting is probably cheapest on fincas, where the wives of colonos are employed for that purpose. Two large exporting firms in the capital have found it economical to install expensive electronic sorting equipment, while others are hand-sorting only the higher quality coffees. It should be further noted that none of the estimated costs include such considerations as the initial investment of the beneficios, equipment, and warehouses, since on most fincas these were amortized long ago.

#### The Central Problem of Internal Coffee Commerce

The problem which concerns everyone in the coffee business, in one way or another, is the distribution of financial returns from coffee exports. International market prices are of greatest concern, but Guatemala can do little to affect world prices for coffee beyond participation in the International Coffee Agreement. But, the internal division of coffee profits among producers, laborers, transporters, exporters, and the government can be, and to a certain extent is, controlled by domestic policy. The crux of the problem lies between the two groups receiving the greatest share of the returns from coffee exports: producers and exporters.

Producers frequently point out that they pay disproportionately high taxes and that exporters receive an excessively large share of the

total income from coffee. Exporters, conversely, argue that the complications of the four-quarter quota system have resulted in higher costs and greater capital outlays. The Agreement has, in effect made profits more secure, while lessening the chances of speculative profits. Meanwhile, the export business has become more complicated, and greater financial reserves are necessary. In short, the argument cannot be resolved without detailed price and cost data. In all probability, the answers lie somewhere between the two positions. Large growers and large exporters appear to be doing well financially. The smaller producers, and to some extent the smaller exporters, seem proportionately less affluent.

Large exporters are in a position to "pass on" low market prices to producers during periods of depression and to expand their profits during periods of higher prices by simply not "passing on" a proportionate share of world price increases. The exporters, however, claim that competition forces them to pay the best possible prices to producers and that, therefore, the prices paid to the growers fluctuate in direct relationship with prices on the world market. Again, the truth probably lies somewhere between the two poles.

The quota system, in a sense, isolated Guatemalan producers from the world market and creates a situation potentially dangerous to the producers, particularly the small ones. To date, Guatemala has always been able to sell all of its coffee, either by quota or to "new markets" (non-member countries). In some years carryover stocks have existed, but long-term surpluses have not accumulated. Moreover, the Agreement includes a system of waivers which can be used to ease difficult surplus



situations within countries experiencing problems. If for some reason Guatemala should be unable to sell all of its coffee, however, the domestic price will be reduced through local surplus. The Agreement will have the effect of keeping world prices relatively stable. Thus, the domestic market may be isolated from the world market, with producers suffering low prices and exporters enjoying abnormally high profits. Guatemalan producers could easily double total production without increasing the acreage under coffee, but competition is becoming keener in the "new markets." Already the recipient of a substantial quota increase, plus the FAO-ANACAFE Diversification Project, Guatemala may not be able to obtain further quota augmentations. Moreover, the "isolated market" situation may already exist to some degree, particularly in years of large harvests and for lower quality coffees.

Solution of the problems of internal coffee commerce would not only help to alleviate specific difficulties, but could also stimulate overall economic development. It is well known that when the coffee business is healthy, Guatemala prospers. Logically, then, the industry should be stimulated, improved, and encouraged to generate capital for development purposes. Some of the most pressing needs are adequate credit, managerial skills, improved transportation, a progressive tax structure, increased labor productivity and higher wages, a closer regulation of the internal coffee trade, and improved coffee quality in conjunction with higher prices for small producers. Such ideas, of course, are neither new nor easily implemented, but the potential social and economic rewards appear to more than warrant the investment.

## CHAPTER VIII

### COFFEE TRANSPORT

Coffee is transported from virtually every producing area to each of the seaports, by a variety of routes, resulting in a crisscross pattern of internal flow. The complexities of the movement, geographically, arise in large part from the intricate and variable nature of the commercial transactions and buyer-seller relationships. Environmental and historical factors also help to account for the volume and direction of flow from producing areas to the ports of shipment.

#### Principal Modes of Transportation

The mode of intra-finca coffee transport depends upon the size of the finca, local topography, and management. On a small farm the pickers usually carry the cherries to the beneficio or finca headquarters, where the fruit is weighed and inspected. On larger fincas, workers may deposit the cherries at the nearest of several weighing stations, from which the coffee is transferred by truck, tractor, or animal power to the beneficio. Various innovations for intra-finca transport have been developed by progressive farmers. On at least one farm where the roads have been eroded to eight or ten feet below the normal ground level, pickers deposit the cherries into hoppers constructed over the roads and trucks are driven under the hoppers to receive the coffee fruit.

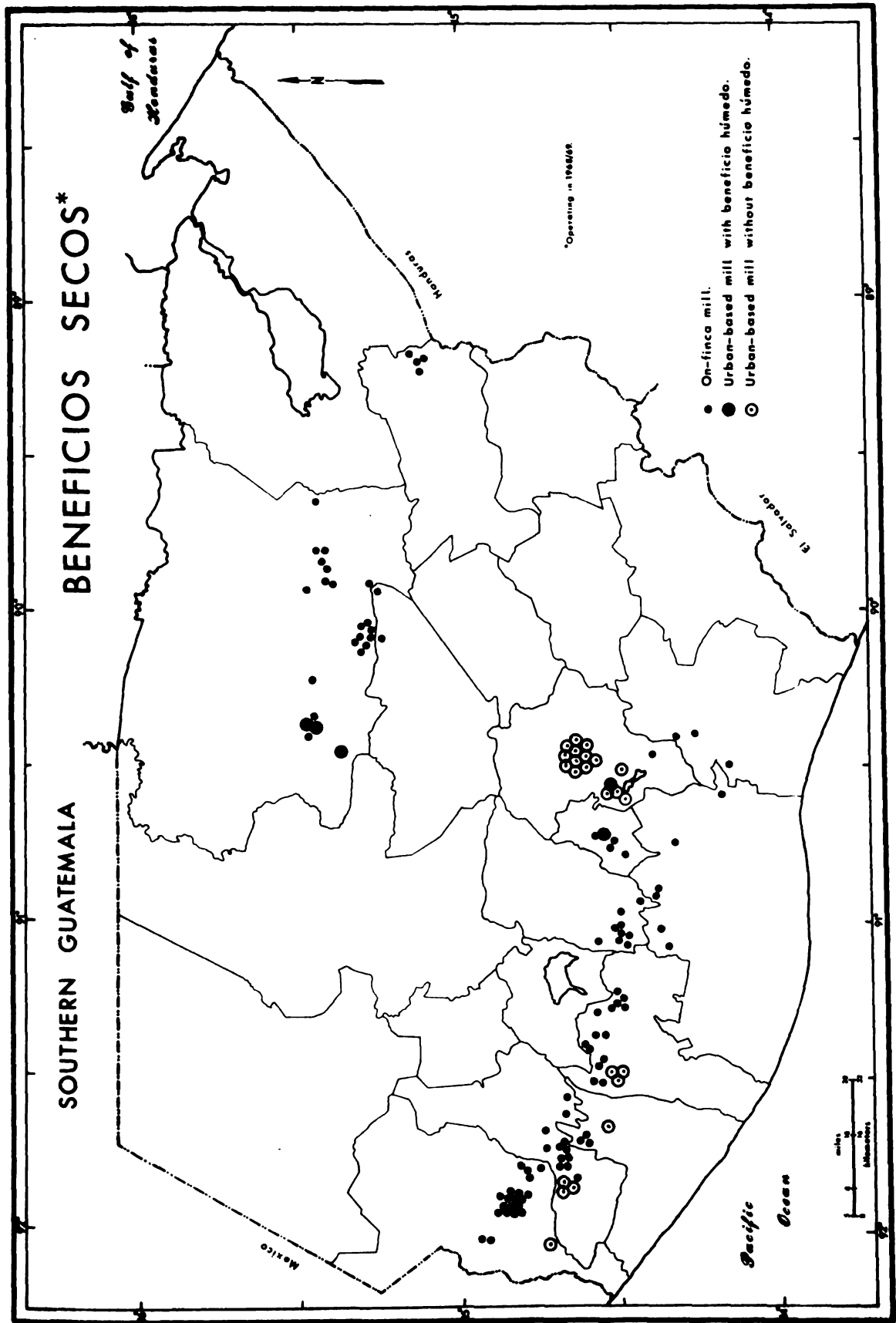
Conveyance of the beans in pergamino or oro to a beneficio seco, exporter's receiving warehouse, or directly to a port of shipment is usually by truck or rail. For short hauls, a tractor and wagon may be used. When a finca is not served by a road or trail suitable for mechanical transportation, the beans may be transported by mule, horse, or human labor, although the latter means is rarely employed today. Larger coffee fincas at considerable distances from roads are chiefly in the departments of El Quiché and Alta Verapaz. Small growers without access to roads are found throughout the producing areas and must generally transport the coffee themselves or on the backs of animals.

The final phase of internal movement, the transportation of coffee from the exporter's warehouse or mill to the port of shipment is accomplished by rail or truck except for that which moves by barge from El Estor. Many exporters have since the late 1950's turned from rail to truck for transporting the coffee to port. Reasons for the change include labor strikes and the general uncertainty of railroad transport. Those exporters who continue to ship by rail feel that truckers are less reliable than the railroad. Relatively few exporters mention the comparative costs of the two modes. None of the exporters operate trucks for the purpose of hauling coffee to the ports, those who use trucks relying upon various trucking firms. A few exporters own trucks which are used to transfer coffee on short hauls from warehouse to mill, or receiving point to mill, and these may also be used in an emergency to transport coffee to a port. The general concensus of the exporters, supported by shipping data, indicates a trend toward

the increasing use of trucks to transfer coffee to the ports. Nationalization of IRCA and subsequent policy may either reverse or strengthen this trend. The government now faces the dilemma of maintaining peace among the railroad workers, which would probably be difficult without the revenue from coffee transport, while satisfying the truckers who have earned an important part of their livelihood by hauling coffee to Matías de Gálvez exclusively. After many years of railroad dominance of coffee transport to the ports, trucking appeared after the mid-1950's to be making inroads into this business. With the 1969 nationalization of the railroad, the future of the rail and trucking interests vis-a-vis coffee transport depends upon government policy, which to date has not been clearly formulated. This uncertainty concerns only the mode of transportation, however, since the highway and railway follow virtually the same routes, and the direction of coffee movement to the various ports is dictated chiefly by foreign markets.

#### From Finca to Beneficio Seco

After the finca, the beneficio seco is the next major location at which coffee is handled prior to export. Cherry coffee is not transported great distances, with exceptions in the Central-Eastern Region, and therefore beneficios húmedos are less important in relation to the movement of coffee. The same is generally true of warehouses, since they are usually found on fincas, adjacent to beneficios secos, and in the ports. Thus, beneficios secos, of which there are currently about 125 operating in Guatemala, are the intermediate sites of importance. The locations of these mills are shown in Map 18.



Map 18

The beneficios secos are conveniently divided into two groups: on-farm and commercial urban-based mills. The on-farm beneficios are often used only to process the lower classes of coffee, while the better grades are likely to be sold in pergamino form. Some of the large farms, however, do process and export their own coffee. Fincas with milling facilities are also owned by exporters, who sometimes use the mills to process coffee purchased in the local area. Some exporters feel that it is economical to operate such fincas with beneficios secos strategically located to minimize transport costs, thereby taking advantage of the pergamino-to-oro weight reduction prior to long hauls. On-farm or rural labor, moreover, is less expensive than that in urban processing centers. Conversely, other exporters prefer to bring all or most of their coffee to Guatemala City or another urban site to be stored and milled. Such centralization facilitates the mixing of different coffees to make an exporter's "blend" and also reduces administrative costs. Hence, coffee processed in a beneficio seco located on a farm generally travels less distance prior to dry-stage processing than that processed in the usually larger, urban-based commercial mills.

The distribution of on-farm beneficios secos is related primarily to production and acreage under coffee. The average coffee area on farms producing at least fifty quintales oro is 204 acres. Fincas with operating beneficios secos, however, have an average of 860 acres under coffee, and fincas with beneficios secos but which do not purchase coffee have a corresponding acreage of 979.

Conditions at the time of construction of the on-farm beneficios secos, and the effects of topography upon transportation, have also influenced the location of the beneficios. Most of the on-farm mills are relatively old, having been constructed during periods when farmers were more apt to export their own coffee and when transportation facilities ranged from poor to non-existent. Many of these mills are now used only because they exist and "may as well be used." Although construction dates for all of the on-farm beneficios secos could not be discerned, almost 70 percent of those for which the dates are known were built prior to World War II. Some fincas have had milling facilities for more than one hundred years. Conversely, of the eleven commercial beneficios located in Guatemala City, only two predate World War II, and six have been built since 1960. Of the thirteen commercial mills in other urban centers, four were constructed between 1910 and 1938, four between 1940 and 1960, and two since 1960. The founding dates of the other three are unknown. A long-term trend toward fewer and larger exporters, with fewer farmers exporting directly, has been augmented by the International Coffee Agreement. This tendency, and the development of railroad and highway transportation to the Atlantic has led to Guatemala City's having the largest concentration of beneficios secos in the country. It is estimated that over 40 percent of Guatemala's export coffee is milled in the capital city. Not only is Guatemala City located on the sole rail and highway route between the main producing areas and the Atlantic ports, but it also offers advantages of commercial facilities, communications, and residential amenities

for the exporters. Other important commercial milling centers are Amatitlán, Coatepeque, Retalhuleu, and Mazatenango.

In summary, the locations of currently operating on-farm *beneficios secos* are explained chiefly on the basis of finca size, ownership by exporters, and historical factors. Many fincas have facilities which are unused, or underused, but which were at one time economical. Improved transportation and the changing nature of the coffee business have rendered these *beneficios* economically marginal or obsolete. The locations of commercial mills, on the other hand, are related primarily to accessibility, most being on the coastal or inter-oceanic highway or railway. The *beneficio* in Antigua, although not astride either of the two major routes, is served by good roads. The Antigua, Amatitlán, and Guatemala City sites also have climatic advantages for the storage of coffee, but this factor is incidental to transportation. The Cobán Region is not traversed by the main highway-railway system, but the commercial *beneficio* sites there also stem largely from regional accessibility or transportation advantages. The commercial mills in Cobán and San Cristóbal Verapaz are integrated and receive both cherry and *pergamino* coffee. Yet, these mills are located only on the periphery of the coffee producing area.

The movement of coffee resulting through transfers from one grower to another and from producers to on-farm *beneficios secos* operated by exporters usually represent short hauls. This is true for most of the coffee grown by small producers as well. Thus, other than the transfer of coffee from the exporter's mill to one of the seaports,



only one major haul is normally involved: the movement from a finca to the commercial, urban-based mill. Producers who export their own coffee, of course, create an exception. As previously noted, exporters tend to purchase the coffee in pergamino from growers and mill it in their own beneficios secos. Coffee is sometimes stored on the producer's farm, however, and processed to oro by the producer at such time as the exporter decides to prepare it for transfer to a port of shipment. A major exception is the transportation of cherry coffee to an exporter's beneficio húmedo, particularly in the Central-Eastern Region and, to a lesser extent, in the Cobán Region.

A greater proportion of the coffee produced in the Central-East is processed from pergamino to oro in commercial, urban-based mills because the fincas, generally lacking beneficios húmedos, tend not to have beneficios secos. Much of the cherry coffee of the region is processed in beneficios húmedos located in Antigua, Amatitlán, and Barberena, where it arrives by truck. This coffee, processed to pergamino at Antigua and Amatitlán, is also processed to oro at the same sites. In the case of Antigua the beneficio is integrated, while in Amatitlán the húmedo and seco facilities are separate but in close proximity. The coffee from the beneficio húmedo in Barberena, on the other hand, tends to move to Concepción, near Escuintla, by truck. From Concepción the coffee formerly traveled by rail chiefly to Puerto Barrios, but in recent years it has been transported mainly by truck to Matías de Gálvez.

Guatemala City, with eleven, has the largest concentration of commercial, urban-based beneficios secos in the Republic, followed by Amatitlán, Coatepeque, and Mazatenango with three each, Cobán with two, and Antigua, Pajapita, Retalhuleu, San Cristóbal Verapaz, and Villa Canales with one each. Because of the location and commercial importance of the capital, the mills there are supplied from all of the producing areas of the country. The three dry mills, and one beneficio húmedo, in Amatitlán are also supplied from all parts of the country but tend to draw proportionately less from the Cobán Region and scattered areas in the eastern departments than do the mills in Guatemala City. The same is true of the integrated wet and dry beneficio in Antigua. The owners of the Antigua facility, Beneficio San Lázaro, are the largest buyers of cherry coffee in Guatemala and this plant is the major receiving point of coffee sold in cherry form in the Central-East. San Lázaro is the largest and most modern integrated beneficio in Guatemala and perhaps in Central America. In addition to cherry coffee from the Central-Eastern Region, coffee in pergamino form is received from all parts of the country.

The remaining processing centers, Cobán, Coatepeque, Mazatenango, Pajapita, Retalhuleu, San Cristóbal Verapaz, and Villa Canales are supplied primarily from adjacent producing areas. Those located on the Pacific coastal highway serve many scattered producers, but draw particularly from the areas up-slope from their sites. Coatepeque, for example, is supplied primarily by coffee grown in the departments of

San Marcos and Quezaltenango. Moreover, virtually all of the coffee from the department of San Marcos passes through Coatepeque, by truck or rail, whether it is milled there or not. The mill at Villa Canales processes coffee from various parts of the Republic, while those of Cobán and San Cristóbal Verapaz receive no coffee from other major regions.

#### From Beneficio Seco to Seaport

The transportation of coffee in oro to the seaports generally represents the second major haul of coffee for export, the first being from finca to commercial urban-based beneficios secos. Since this is the final internal movement of coffee, and because pertinent port statistics and railroad data are available, this phase of coffee transport is amenable to more detailed analysis. Likewise, major changes in transportation infrastructure have occurred, and these are better recorded than is the case in other phases of coffee movement.

#### Historical Development

The completion of the inter-oceanic railroad, in 1908, marked the beginning of a new era in the internal transport of coffee in Guatemala. Previously, coffee moved by various routes to the Pacific coast from the Western and Central-Eastern regions, and to the Atlantic from the Cobán area via the Polochic River and Lake Izabal. After 1908, coffee was increasingly transported from west to east across the Republic by rail. Table 3, page 47, illustrates the expansion of Puerto Barrios as a coffee port following completion of the inter-oceanic rail line.

By 1930, the entire railway system of Guatemala, except the Pancajché-Panzós line, came under single ownership as the International Railways of Central America (IRCA). The history of IRCA has been stormy. Labor strikes, financial difficulties, and legal entanglements confronted the company throughout its existence. An economic survey mission of the International Bank for Reconstruction and Development noted, in 1951, that IRCA was one of the largest employers in the Republic, with 5,900 "regular employees," and that the railroad union was the most "powerful organized labor group" in Guatemala.<sup>1</sup> A foreign-owned monopoly, IRCA became the tool of political office seekers and the serious concern of many Guatemalans.<sup>2</sup> Since IRCA owned the port facilities at Puerto Barrios, the nearby port of Matías de Gálvez was constructed by the government in 1955 to provide an alternative outlet.

In 1957, the Atlantic Highway was completed from Guatemala City to Puerto Barrios and Matías de Gálvez. Called by some "the Route of Liberation," the highway was built in part to provide competition for IRCA, which had been charging "admittedly high" transportation fees. The railroad began to experience competition from trucking in the late

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<sup>1</sup>International Bank for Reconstruction and Development, The Economic Development of Guatemala, report of a mission sponsored by the IBRD in collaboration with the government of Guatemala (Baltimore: The John Hopkins Press, 1951), 170.

<sup>2</sup>See, e.g., René Arturo Orellana G. and Julio Lorenzo A., "Pronunciamiento del Colegio de Economistas, Contadores Públicos y Auditores de Guatemala, sobre la construcción del ramal ferroviario entre Puerto Barrios y Matías de Gálvez," Economía, Vol. I, No. 3 (June-December, 1962), 53-55; and Rafael Piedra-Santa Arandi, "La construcción de ferrocarriles en Guatemala y los problemas financieros de la IRCA," Economía, Vol. 6-7, No. 15 (January-March, 1968), 5-48.

1950's and was forced to reduce its rates. Table 24 illustrates the number of 70 kilo (154 lb.) bags hauled by rail from 1945 to 1963 and the corresponding revenue received. From 1950 to 1957, between 70 and 80 percent of Guatemala's coffee export volume left the country through Puerto Barrios. By 1962, the volume shipped via Puerto Barrios had fallen to 63 percent, while that accounted for by Matías de Gálvez increased to 24 percent. With the help of tax concessions and other government incentives, Matías de Gálvez in the 1960's gradually eclipsed Puerto Barrios in volume of imports. The new port also gained an increasing share of total exports, as well as for coffee, and a trend toward eventual dominance or at least parity of the Atlantic trade appeared to have been established.

TABLE 24

## GUATEMALAN EXPORT COFFEE MOVED BY IRCA, 1945-1963

Year	70 Kilo (154 lb.) Bags	Rail Revenue from Coffee	Average Revenue Per Bag
1945	703,330	\$ 618,320	\$0.879
1946	762,745	637,788	0.836
1947	740,753	657,257	0.887
1948	678,110	656,809	0.969
1949	758,946	859,590	1.132
1950	788,593	882,976	1.119
1951	730,515	848,763	1.162
1952	833,744	1,063,668	1.276
1953	789,540	1,010,382	1.280
1954	688,888	848,308	1.231
1955	860,060	1,152,211	1.340
1956	823,322	1,149,343	1.396
1957	1,028,636	1,259,390	1.328
1958	1,021,116	1,268,810	1.243
1959	1,178,397	1,272,928	1.080
1960	1,005,600	922,984	0.918
1961	1,040,579	864,752	0.831
1962	1,303,143	999,133	0.767
1963	1,087,553	943,905	0.868

Source: International Railways of Central America, Guatemala Division.

In 1969, the Guatemalan government expropriated the holdings of IRCA. Prior to expropriation a great deal of controversy existed over whether or not the government should permit IRCA to construct a rail link to Matías de Gálvez. Trucking companies and anti-IRCA interests were strongly opposed, arguing that such a link would benefit a foreign-owned company at the expense of domestic interests. Since expropriation, plans have gone ahead to connect Matías de Gálvez with the railway system. Hence the future of the two ports relative to each other will probably be altered, the government-vs.-IRCA conflict having ceased. Also relevant to the movement of coffee within Guatemala is the future of a segment of the former IRCA system in El Salvador and the portion of coffee from that country which has been transported through Guatemala, via Zacapa and Puerto Barrios, on IRCA lines.

The movement of coffee to the Pacific ports of Champerico and San José has not changed greatly since the 1950's. However, during the period 1963/64-1966/67, these ports each accounted for about 7 percent of all coffee exports, whereas in the 1950's Champerico accounted for slightly over 7 percent and San José handled about 15 percent. The decrease of about 8 percent in the volume of coffee shipped through the two Pacific ports is relatively minor, perhaps reflecting some shift in foreign markets.

Coffee from the Cobán Region has traditionally moved to the Atlantic via the Polochic Valley. Since the late nineteenth century this coffee has been transported by animals or vehicles to Pancajché,

from there to Panzós by rail, and from Panzós to Livingston by barge on the Río Polochic, Lake Izabal, El Golfete, and the Río Dulce. The Verapaz Railroad, which owned the barge service was

originally built by private interests, under a charter to "Lyman and Gordon" signed in 1884 for the purpose of hauling coffee out of this area. By agreements made in 1941 and 1944 it became government owned and operated. During the last ten years [c. 1953-63] it has hauled a maximum of 5,000 tons annually of which about 3,000 tons was seasonal coffee.<sup>3</sup>

The railroad ceased operations in 1963, whereas the barge line continues to function. Since completion of the all-weather road from Panzós to El Estor, however, the water transport operations have been transferred to the lake port at El Estor, which receives cargo from the upper area by truck. The volume of coffee, which is the principal commodity handled by the barge line, has remained relatively stable, but with some tendency to decrease. It is estimated that perhaps one-fourth of the coffee from the Cobán Region is transported by truck to El Estor and thence via Livingston by barge. In recent times the coffee has been taken by barge to Matías de Gálvez or Puerto Barrios, since Livingston is not a deep water port and goods transferred to ships directly from there must be lightered. Improvement of the highway between El Rancho and Cobán seems to have encouraged the trucking of coffee to the former site, from which it continues by truck to Matías

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<sup>3</sup>Transportation Consultants, Inc. Central American Transportation Study 1964-1965, a report prepared for the Central American Bank for Economic Integration (Washington, D. C.: T.S.C. Consortium, 1965), I, 271.

de Gálvez or by rail to Puerto Barrios. Small amounts of Cobán coffee also occasionally move to the Pacific ports, via El Rancho, by rail or truck.

### Geographic Movement

Data available for internal coffee transport are limited to green coffee moved by rail to seaports for shipment. The railroad data indicate only at what point coffee is loaded and at which port it is deposited. Thus, for example, the amount of coffee transported by rail during a given year from Guatemala City to Puerto Barrios may be known, but the origins of that coffee prior to its deposit in the capital cannot be discerned from the data. Furthermore, it is not known whether the coffee came to Guatemala City in pergamino or green form, but since there are no beneficios húmedos in the capital it is certain that it did not arrive there in cherry form.

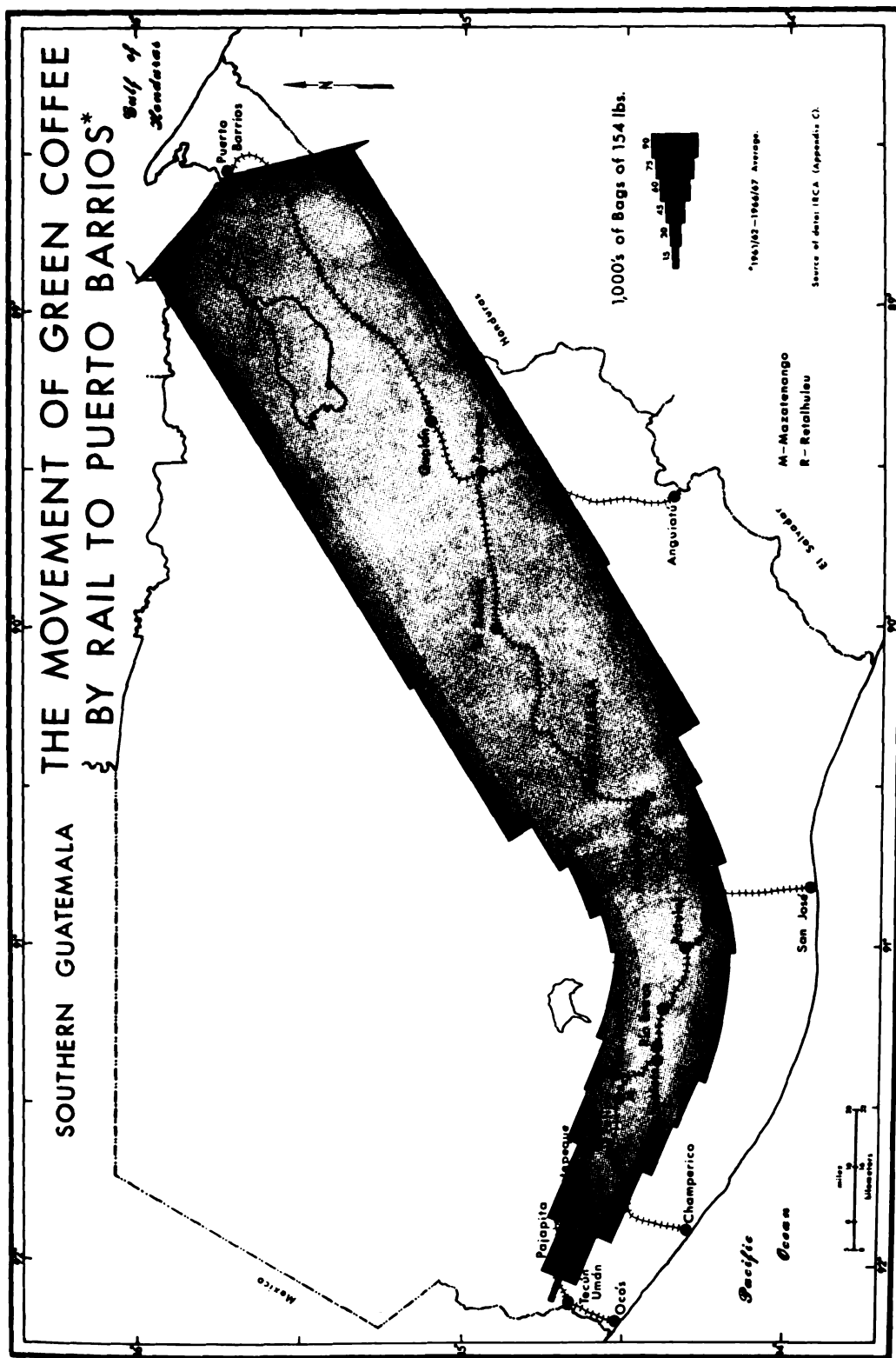
Valid and reasonably precise interpretations can be drawn from the railroad data on green coffee for export, assuming that the increased movement of green coffee by truck since the mid-1950's has not significantly altered the direction or volume of flow. The validity of this assumption is supported by two circumstances. First, the percent of the total national production of coffee accounted for by each department has changed only slightly since World War II, indicating that areal production patterns have remained basically the same. Second, the percent of coffee exported through the various ports has experienced relatively little change since the 1950's, with the



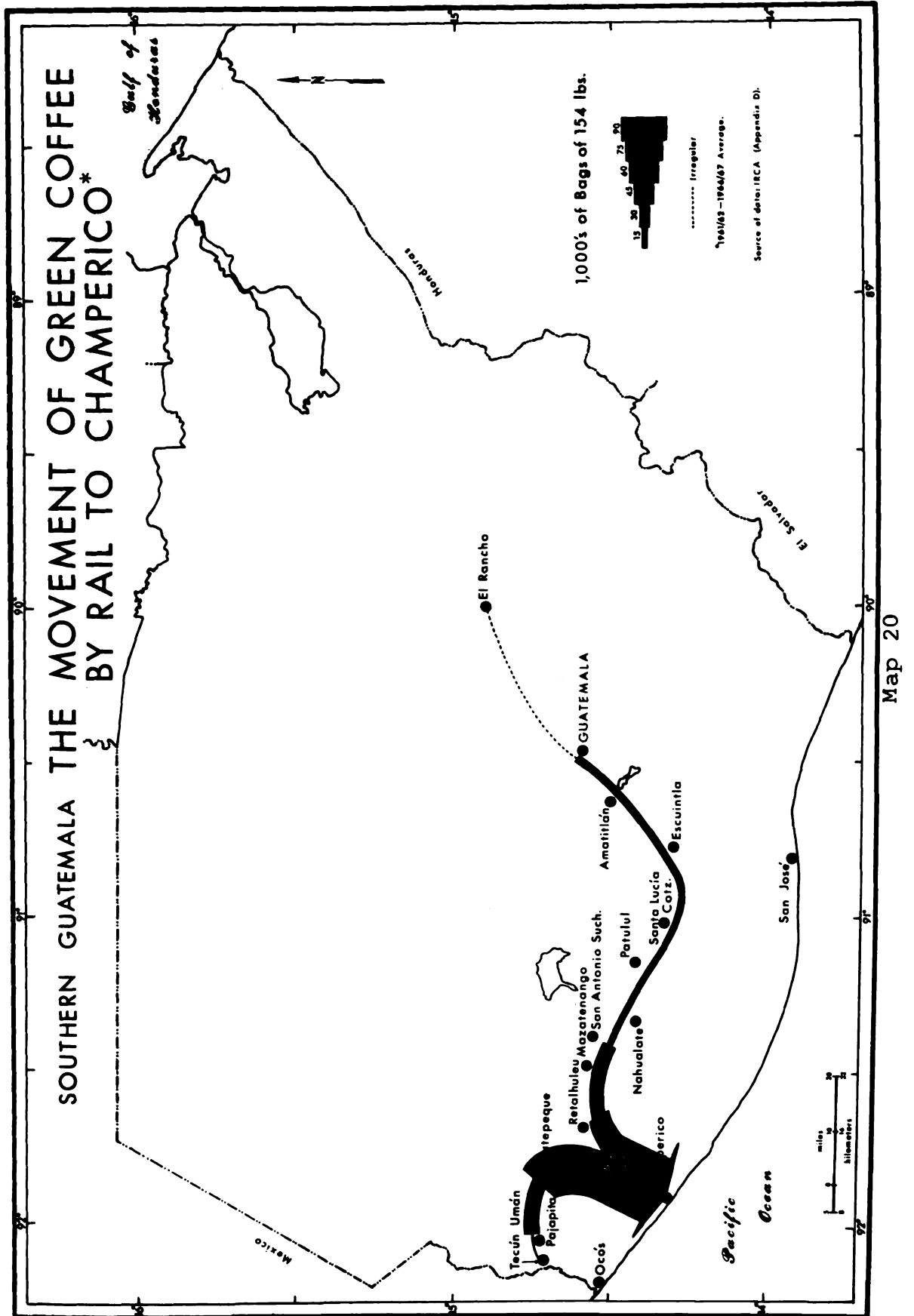
exception of Matías de Gálvez. Whereas this port did not begin to handle significant amounts of coffee until the late 1950's, it accounted for almost 30 percent of the total exports in 1963/64-1966/67. Of the 30 percent gained, only about 7 percent was due to a decrease in the amount of coffee going to San José. The remaining 23 percent is accounted for by a decrease in the volume of coffee exported through Puerto Barrios. Thus, since Matías de Gálvez is located adjacent to Puerto Barrios, the influence of the trucking industry has not greatly altered the internal movement of coffee except for the mode by which it is carried. It follows that the railroad data are representative of the direction and quantity of the total flow of green coffee for export.

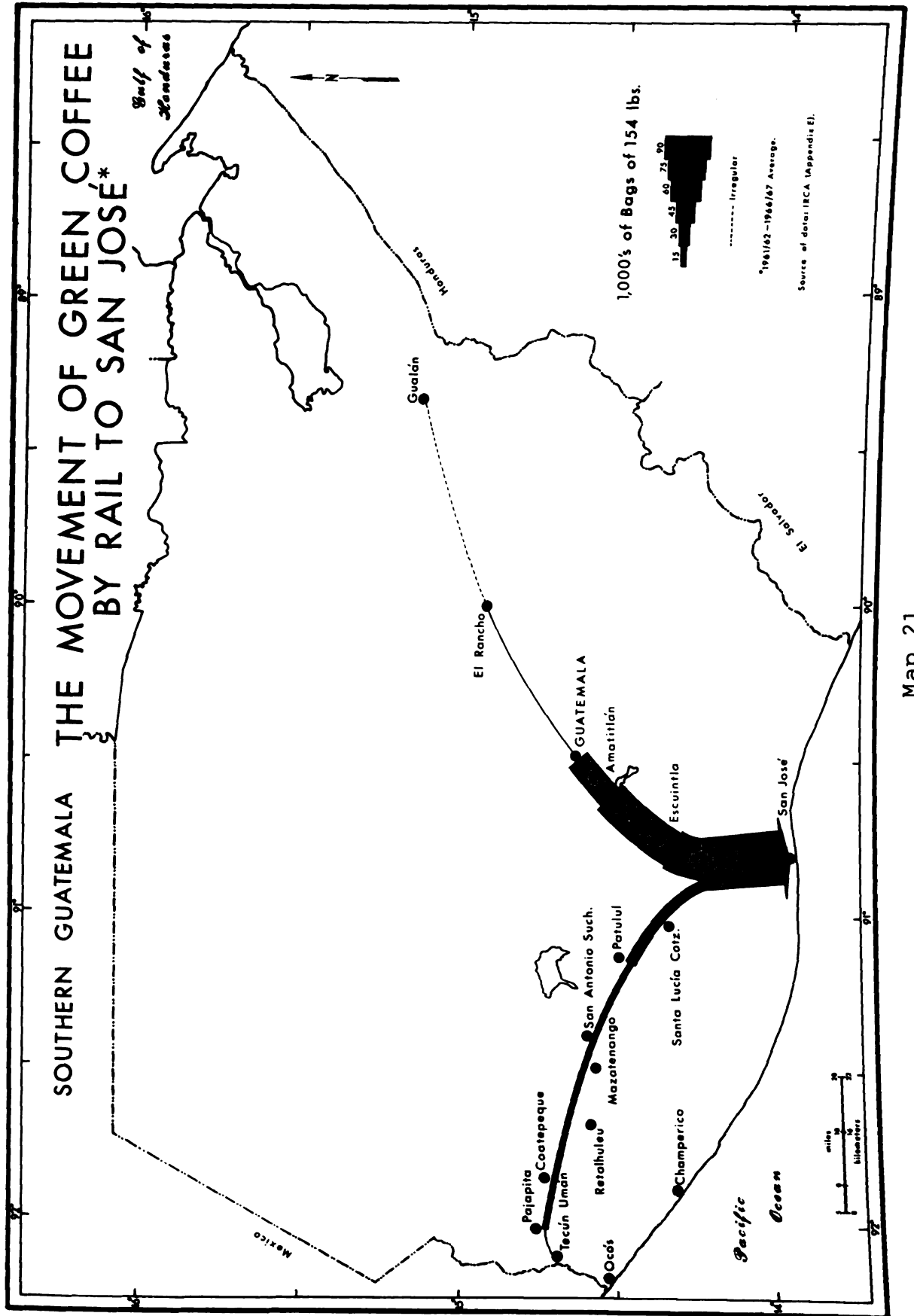
It can be further assumed that exporters attempt to minimize transportation costs by shipping their coffee the shortest possible distances and avoiding back-hauling whenever possible. The flow patterns of green coffee, therefore, in a general way approximate the internal movement of pergamino and, to a lesser degree, cherry coffee as well. It must be emphasized, however, that since exporters have specific foreign markets to satisfy, they must purchase certain types of coffee and meet certain demands which in some years require the buying of coffee from different and more distant areas than in other years. Naturally, this results in a complicated and varying pattern of internal movement of which only the general flows are identified in this study.

The movement of green coffee to Puerto Barrios-Matías de Gálvez, Champerico, and San José is illustrated in Maps 19, 20, and 21. The



Map 19





two Atlantic ports, Puerto Barrios and Matías de Gálvez, accounted for about 85 percent of the nation's total coffee export volume during the period 1963/64-1966/67. A yearly average of 663,193 bags of 70 kilos (154 lbs.) was transported to Puerto Barrios by rail during the same period. Approximately 90 percent of all coffee shipped via Puerto Barrios arrived there by rail. Of the amount brought to the port by rail, about 37 percent was shipped directly from the departments of San Marcos and Quezaltenango, the stations at Pajapita (10%), Coatepeque (19%), and Retalhuleu (7%) being of primary importance. Another 25 percent entered the flow pattern in the Mazatenango and Escuintla area, the important coffee stations being Mazatenango (3%), San Antonio Suchitepéquez (1%), Nahualate (2%), Patulul (4%), Santa Lucia Cotzumalguapa (4%), and Escuintla, including Concepción (10%). The station at Amatitlán accounts for 11 percent, with the nearby stations at Morán and El Zapote contributing another 1 percent. Thus, approximately 74 percent of the coffee transported to Puerto Barrios by rail is shipped directly from points south and west of Guatemala City. Some 24 percent is shipped from the capital, and only 2 percent originates at stations east of Guatemala City, chiefly at El Rancho from the Cobán Region and Gualán from the outlying district in eastern Zacapa and adjoining area of Izabal.

The stations from which large amounts of coffee are transported by rail directly to Puerto Barrios are located in towns which have relatively sizable concentrations of *beneficios secos*, such as Guatemala City, Coatepeque, and Amatitlán. But, there are several important

stations in urban centers which do not have beneficios secos, such as Nahualate, Pajapita, Patulul, and Santa Lucia Cotzumalguapa. Of these, Pajapita has one small beneficio seco, and the other towns have none. Therefore, all of the coffee which is loaded at these stations has been processed to oro in on-farm beneficios secos in the general area served by the station. Unfortunately for the present analysis, the converse is not true. It cannot be assumed that the coffee from the urban centers with mills has necessarily been processed in those mills, although surely a significant proportion must be. The owners of these mills are reluctant to furnish data regarding the amount of coffee processed in their facilities, fearing that such information might aid competitors and possibly lead to increased taxation.

The railroad data (Appendix C) indicate substantial changes in the average amounts of coffee transported from certain stations for 1951/52-1959/60 and 1961/62-1966/67. Because the basic patterns of movement have not changed greatly, the relative importance of the various stations can be assumed to be due to changes in mode of shipment. As noted above, the mode depends chiefly upon the predilections of the exporters, which, in turn, have been undergoing changes due to advances by the trucking industry and recent government policy *vis-a-vis* the railroad and the Atlantic ports.

The Central-Eastern Region is somewhat anomalous in terms of the production, commerce, and movement of coffee but fits into the general flow patterns illustrated in Maps 19, 20, and 21. Green coffee from this area tends to move by truck from the beneficios secos in Antigua, Amatitlán, Concepción, and Guatemala City to Matías de Gálvez, perhaps

to a greater degree than is true of coffee from other areas. The major buyer-exporters of cherry coffee in this region now ship most of their coffee to port by truck, chiefly to Matías de Gálvez. Because the coffee is of relatively high quality and therefore likely destined for the European market, it tends to go to Atlantic ports. Because it is transported by truck, it goes primarily to Matías de Gálvez rather than Puerto Barrios. However, this tendency may be disrupted or altered by future government policy regarding the railroad.

The Pacific ports of Champerico and San José present interesting contrasts with Puerto Barrios. During the period 1963/64-1966/67, approximately 14 percent of Guatemala's coffee exports went through these two ports, almost equally divided at about 7 percent each. An annual average of about 68,618 70-kilo bags arrived at Champerico by rail during the same period, representing 75 percent of the total coffee exported from that port. At San José, the average number of bags arriving by rail was 52,085, amounting to about 57 percent of the total coffee shipments from the port.

Maps 20 and 21, illustrating the internal flow patterns of green coffee exported through Champerico and San José, demonstrate the existence of a definite supply area for each of the two ports, in contrast with the flow pattern for Puerto Barrios. Of the coffee shipped through Champerico, for example, about 45 percent comes directly from the station at Coatepeque, 23 percent from Pajapita, 9 percent from Retalhuleu, and 8 percent from Mazatenango. Only about 6 percent of all coffee arriving at Champerico by rail is shipped directly from

stations east of San Antonio Suchitepéquez. The coffee transported by rail to San José, on the other hand, comes primarily from Guatemala City (47%), Amatitlán (22%), Escuintla and Concepción (7%), and Patulul (5%). Only 10 percent of the coffee entering San José by rail originates west of Río Bravo. Neither Pacific port receives much coffee from stations east of Guatemala City. However, coffee destined for Pacific shipment from the Cobán Region and other areas east of the capital is more likely to be exported through San José than Champerico. Coffee milled and/or stored in Guatemala City, regardless of where it is grown, is also more likely to be shipped through San José.

A final consideration in the movement of coffee within Guatemala is the time factor. Cherry coffee moves according to the harvest season, which varies regionally and by altitude. Since coffee is not normally processed to oro and transferred to the port of shipment until shortly before the actual date of export, the volume of exports by month for each port can be used to estimate peak periods in the movement of green coffee within the country. Prior to the Agreement and the four-quarter export quota system, almost all Guatemalan coffee was exported between October and May. Now, although December through April remains the peak period, coffee is exported year-round. Data on coffee exports from each port by month of shipment indicate relatively little variation among the ports, when monthly shipments are expressed as a percentage of the annual total for each port.



## CHAPTER IX

### COFFEE EXPORT

Traditionally, the export of coffee from Guatemala has been handled by private interests, with a minimum of government control or interference other than taxation. The history of government involvement has been much shorter and less intensive with regard to exports, for example, than with attempts to stimulate and improve coffee production. Membership in the International Coffee Agreement has, however, impelled the Guatemalan government to assume a more active interest in coffee exportation. The establishment of instruments of control affecting the export of coffee has led some exporters to complain of "increased socialization or nationalization" of the industry. The quota system, financing, and taxation have, no doubt, complicated the coffee export business. Nevertheless, coffee export, like the entire industry, remains basically private and free of government interference, especially relative to conditions in several other leading coffee-exporting nations.

#### The Exporters

A century of coffee exportation from Guatemala has witnessed not only a tremendous increase in volume, but also an increased degree of complexity and specialization. At one time, export was largely by growers who shipped their coffee under individual finca names, some of

which became well-known "brands" in foreign markets. Today, coffee is shipped primarily by export firms, although some large planters continue to export their own coffee. In addition to producer-exporters and exporting firms, coffee is sold to foreign markets by the Industria de Café, S. A. (INCASA) and by ANACAFE, the latter accounting for only small shipments. Each of these four, the producer-exporters, exporting firms, INCASA, and ANACAFE, has peculiar characteristics and occupies a distinct position in the export sector of the Guatemalan coffee industry.

#### Producer-Exporters

Producer-exporters are coffee farmers who export part or all of their own crop and who may also purchase coffee from other, usually nearby and smaller, farmers. Inasmuch as some export firms also operate coffee fincas, the distinction between the two groups is not always clear. However, producer-exporters as a rule do not maintain export offices in Guatemala City, except perhaps in their residences, nor do they normally own and operate commercial, urban-based beneficios secos. In no case does the volume or value of coffee purchases exceed that of their own coffee production. In short, the producer-exporter is primarily a grower, usually operating an on-farm beneficio seco to process the coffee to oro.

The number of producer-exporters varies from year to year, with a tendency to increase in years of bumper crops or particularly good market conditions. The long-term trend, however, is toward fewer

producer-exporters. During the years from 1963/64 to 1967/68, there were approximately 25, 18, 16, 11, and 16 producer-exporters, respectively. The exact number of producer-exporters in 1936/37 and in 1947/48 has not been determined, but the total number of exporters was 152 and 51, respectively.<sup>1</sup> The number of exporters during the years from 1963/64 to 1967/68 was 48, 41, 39, 30, and 35, respectively. Judging from the relatively small amounts of coffee shipped by many of the exporters in 1936/37 and 1947/48, and statements from a number of coffee businessmen, it seems likely that much of the decrease in the total number of exporters is due to a diminishing number of producer-exporters. During the period 1963/64-1967/68, producer-exporters accounted for only 3.5 percent of all coffee exports (Table 25).

TABLE 25

VOLUME OF COFFEE EXPORTED BY PRODUCER-EXPORTERS, 1963/64-1967/68

Year:	1963/64	1964/65	1965/66	1966/67	1967/68	Average
Quintales Oro	94,294	50,869	69,748	38,555	120,432	74,800
Percent of Total Coffee Exports	4.8	3.0	1.2	2.4	6.0	3.5

Source: Calculated from unpublished data from ANACAFE.

Since the Agreement, producer-exporters are able to ship only a fraction of their crop each quarter and must therefore store the remainder. Moreover, several small consignments are less economical and

<sup>1</sup>Revista Agrícola, Vol. XV, No. 3 (March, 1938), 177-85; and Revista Cafetalera de Guatemala, Vol. V, Nos. 41-49 (April-December, 1948), 11. The more recent figures in this chapter are from unpublished data from ANACAFE.

less convenient for both the exporter and the importer than are single large shipments. Some importers in the United States will no longer accept partial shipments or deal in small orders. Thus, many if not most of the producer-exporters work with relatively small shipments of good quality coffee and export largely to Europe. Whether selling on the European market or elsewhere, such exporters generally have well-established relationships with certain importers. Some producer-exporters maintain permanent business ties, but export only in years of large harvests or high prices. The quota system, however, has not only limited the size of shipments by these exporters, but has also tended to smooth out the international price curves for coffee and to avoid the high and low price extremes characteristic of international coffee trade prior to the Agreement in 1962. Furthermore, the European coffee market is apparently becoming more like that of the United States. Buyers are less interested in high quality and more concerned with quality control and an even, dependable supply, greater consumer convenience, plus higher trading volumes. Thus, both the Agreement and international market trends suggest that producer-exporters, and perhaps small exporting firms as well, will continue to diminish in number and importance.

#### Coffee Exporting Firms

Although coffee exporting firms may also operate fincas, they exist primarily to export. Approximately half of the twenty coffee exporting firms in 1968 operated coffee farms. The firms often do not

actually own the fincas, however. Instead, many of these properties are held by the men or families that comprise the firm. In one such case, two partners individually own seven coffee fincas, although the firm itself possesses none. This example, however, represents the maximum number of fincas owned by the members of any one firm. If the holdings of close relatives were included, the number of fincas "attached" to a firm would probably be greater in some cases.

Important facilities normally owned by exporting firms, or individually by its members, include offices, beneficios, warehouses, roasters and retail outlets. All of the twenty export firms maintain offices in the business district of Guatemala City. Slightly over half operate beneficios húmedos, most of which are located on farms. Several of the larger firms which purchase substantial amounts of coffee in cherry operate non-farm beneficios húmedos, but these are frequently located near the firms' beneficios secos. Only four of the firms own no beneficios secos and hence either lease processing facilities or purchase green coffee ready for export. Most of the twenty-seven commercial, urban-based beneficios secos in Guatemala are owned by exporting firms. Of the eleven in Guatemala City, seven are the property of exporting firms, while the remainder are relatively small mills rented to exporters or used to process coffee for the domestic market. Four of the exporting firms operate coffee roasting plants, and another plans to construct one in the near future. One firm has roasting facilities in Amatitlán, while the others are located in the capital. The four firms with roasters have retail outlets in Guatemala

City, but for each the domestic sale of roasted coffee is secondary to the export of green coffee.

In addition to unique operational features among the various firms, there exists a considerable diversity of business structure. Most of the firms export only coffee, but four export other agricultural commodities as well. For at least one firm, coffee is not the principal agricultural export item. Several firms began as other types of businesses and have expanded to include the exportation of coffee. Some have switched to coffee exclusively. One firm combines a sizable wholesale business with coffee export, while one of the largest exporters of coffee is also involved in import trade.

The founding dates or the dates when firms began to export coffee are variable and indicate that the "mortality rate" for coffee exporters is rather high. Of the exporters (including producer-exporters) operating in 1947/48, only about 35 percent are exporting coffee today. The corresponding figure for 1936/37 exporters is only about 20 percent.<sup>2</sup> The oldest coffee exporting firm currently in operation was founded in 1881 and has no competitors for the claim to longevity. The remaining firms have been established since 1935, except for one founded "prior to 1930." Nine of the twenty firms have been in business only since 1950, and four have been established since 1960.

Determination of the relative importance of the various coffee exporting firms is complicated by (1) annual variations in the total number of firms, (2) annual variations in the percentage of the total

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<sup>2</sup>Revista Agrícola (March, 1938), 179-83; and Revista Cafetalera de Guatemala (April-December, 1948), 11.

coffee exports accounted for by each firm, and (3) the practice by some exporters of shipping coffee under names other than those of their own firms. Table 26 indicates the number of actual coffee exporting firms from 1963/64 to 1967/68 and the total number of names under which coffee was exported. The latter is commonly confused with the number of exporting firms. The names under which coffee is exported exceed the actual number of firms for several reasons. One, firms occasionally export coffee under the name of one or more members of the firm. Two, firms have in two instances merged and the partners continue to export under their respective names for marketing purposes. One of the largest coffee exporting firms in Guatemala, for example, is composed of two former firms, and the coffee which is shipped to Europe goes under the name of one of the former firms, while that sent to the United States is marketed under the name of the other. Three, at least one firm has an exclusive contract with a German importer, and therefore when that firm desires to sell coffee to some other German buyer it does so under a different name.

TABLE 26

## NUMBER OF NAMES AND ACTUAL FIRMS BY WHICH COFFEE IS EXPORTED

Year	Number of Actual Firms	Number of Names	Percent shipped by Actual Firms
1963/64	21	24	93.8
1964/65	21	26	95.8
1965/66	21	26	94.8
1966/67	20	24	95.4
1967/68	20	22	95.7
Average	21	24	95.1

Source: Calculated from unpublished data from ANACAFE.

Eighteen exporters, each of which accounts for at least 1 percent of Guatemala's coffee exports, together handle over 98 percent of the total. The number shipping at least 1 percent of all coffee exports has been relatively stable during the period 1963/64-1967/68, being 17, 17, 16, 17, and 18, respectively. These shippers included one producer-exporter and INCASA. Export data for the eighteen largest exporters, and data pertaining to the names under which coffee was exported, are presented in Table 27.

Not only has the number of exporting firms varied little during the period 1963/64-1967/68, but the percentage of the total coffee exports accounted for by each exporter has also been relatively constant. Sixteen exporting firms, INCASA, and one producer-exporter, all of which individually handle at least 1 percent of the total volume of Guatemala's coffee exports, together accounted for about 98 percent of the exports. In 1967/68, ten of the firms marketed at least 5 percent of the total coffee exports, but only one firm exported more than 10 percent of the total.

The ten largest exporters, each handling over 100,000 quintales or more annually, accounted for approximately 77 percent of the nation's total coffee exports during the period 1963/64-1967/68. The relative position of the ten firms, in terms of volume shipped during this five-year period, varied considerably. Table 28 lists these firms according to the average percentage of coffee shipped during the period.



TABLE 27

COFFEE EXPORTS IN 1967/68, BY EXPORTING FIRMS AND BY NAMES 1/

	Exporting Firms		Names Under Which Coffee Was Exported <u>2/</u>			
	Quintales Oro	Percent of Total	Exporting Firm	Quintales Oro	Percent of Total	
1	230,215	11.5	A (2)	195,063	9.7	
2	195,063	9.7	B (3)	188,041	9.4	
3	188,041	9.4	C (4)	162,256	8.1	
4	162,256	8.1	D (5)	147,671	7.3	
5	147,671	7.3	E (6)	139,094	6.9	
6	139,094	6.9	F (7)	131,886	6.6	
7	131,886	6.6	G (8)	129,840	6.5	
8	129,840	6.5	H (1)	121,742	6.1	
9	106,396	5.3	I (1)	108,473	5.4	
10	102,757	5.1	J (9)	106,396	5.3	
11	90,100	4.5	K (10)	101,707	5.1	
12	88,805	4.4	L (11)	90,100	4.5	
13	77,882	3.9	M (12)	88,655	4.4	
14	67,889	3.4	N (14)	67,889	3.4	
15	35,802	1.8	O (13)	44,154	2.2	
16	33,321	1.7	P (15)	35,802	1.8	
17	24,349	1.2	Q (13)	33,728	1.7	
18	21,912	1.1	R (16)	33,321	1.7	
			S (17)	24,349	1.2	
			T (18)	21,912	1.1	
Totals	1,972,079	98.1		1,973,279	98.2	

1/ For firms handling at least 1 percent of total coffee exports. Number 18 is a producer-exporter, the largest in Guatemala; the remainder are exporting firms, including number 16, INCASA. Four exporting firms are excluded, since they individually account for less than 1 percent of the total coffee exports.

2/ Coffee exported under the names designated herein as "H" and "I" is actually shipped by a single firm designated as "1" on the left side of the table. Thus, although the statistics normally show two "exporters" handling 6.1 and 5.4 percent of the total, they are in fact only one firm accounting for 11.5 percent--the largest in Guatemala. Likewise, "O" and "Q" are firm "13" on the left, thus reducing to eighteen the total number exporters handling at least 1 percent of the nation's coffee exports. Other variations between the left and right sides of the table result from smaller amounts of coffee shipped under different names being added to the firm's total.

TABLE 28

PERCENTAGE OF TOTAL COFFEE EXPORTS BY THE TEN LARGEST EXPORTING  
FIRMS IN GUATEMALA, 1963/64-1967/68

Exporter	1963/ 64	1964/ 65	1965/ 66	1966/ 67	1967/ 68	Change: 1963/64- 1967/68	1963/64- 1967/68 Average
1	14.1	14.9	9.9	11.0	9.7	-4.4	11.9
2	9.7	12.4	9.9	10.6	11.5	+1.8	10.8
3	10.5	9.5	8.9	7.8	6.5	-4.0	8.6
4	9.4	10.7	7.6	7.7	6.9	-2.5	8.5
5	3.5	6.3	8.4	9.8	9.4	+5.9	7.5
6	6.3	7.6	7.4	7.6	8.1	+1.8	7.4
7	7.0	5.5	9.1	7.1	7.3	+0.3	7.2
8	4.7	5.2	7.5	9.9	6.6	+1.9	6.8
9	5.8	3.7	4.8	4.5	5.1	-0.7	4.8
10	1.9	2.8	4.5	5.2	5.3	+3.4	3.9
Totals	72.9	78.6	78.0	81.2	76.4	+3.5	77.4

Source: Calculated from unpublished data from ANACAFE.

For the five years 1963/64-1967/68, there appears to be a slight inverse relationship between total coffee exports and the aggregate percentage accounted for by the ten largest exporters. Thus, when total coffee exports are down, as in 1964/65 and 1966/67, the ten largest exporters account for a larger percentage of the total coffee exports, and vice versa. The tendency is barely discernible, however, and data for a greater time span are needed to verify the relationship, if indeed one exists. On the other hand, the relationship is consistent with the fact that more producers tend to export a greater volume of coffee during years of bumper crops and favorable market conditions.

Time series data are insufficient to accurately assess the concentration of the coffee export business in detail. During 1936/37-1937/38, the ten largest exporters handled only about 60 percent of the

nation's total coffee exports, while by 1946/47-1947/48, they shipped about 84 percent.<sup>3</sup> The average volume accounted for by the ten largest exporting firms during the period 1963/64-1967/68 was 77.4 percent of the total, a decrease of 7 percent. Unfortunately, data could not be found for the 1950's. It seems likely, however, that a long-term trend toward an increasing concentration of coffee exports by a relatively few large firms was interrupted by the unfavorable market conditions of the later 1950's. Although the data at hand are inconclusive, other salient factors support the hypothesis. A need for additional capital to maintain a coffee exporting business under conditions of the Agreement, as well as the domestic complications and international coffee trade trends noted above, encourage the growth of large coffee exporting firms and the demise of small concerns. The producer's ability to avoid the 1.5 percent ad valorem tax on domestic transactions by exporting his own coffee, however, is a factor which encourages producer-exporters and thus a greater total number of exporters. Direct exportation also eliminates the middle man, saving the exporter's profits for the producer. On the whole, the circumstances which favor the concentration or consolidation of the coffee export business in the hands of a smaller number of firms appear likely to prevail.

It is noteworthy that four of the five exporting firms registering the greatest growth during the years 1963/64-1967/68 are also those which purchase the largest amounts of coffee in cherry form. These four, moreover, are among the very largest coffee exporters in

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<sup>3</sup>Ibid.

Guatemala. Thus, available data would appear to be consistent with the earlier suggestion that the purchase of coffee in cherry form is gradually increasing and is likely to continue to do so. Secondly, the data support the notion that the coffee export trade is gradually becoming more concentrated in a relatively small number of firms.

### INCASA

The Industria de Café, S.A. (INCASA) is a privately owned company, with 51 percent of its capital originating in the United States and the remaining 49 percent in Guatemala. INCASA exports only soluble coffee and is the sole producer and exporter of soluble coffee in Guatemala.<sup>4</sup> The company, which commenced operations in 1958, is located on the Atlantic Highway immediately outside of Guatemala City. INCASA instant coffee is marketed throughout Guatemala and has only a small number of imported brands as competitors for the domestic market. Yet, about 95 percent of the firm's coffee is sold to foreign buyers. Most INCASA coffee for export arrives at Matías de Gálvez by truck, for shipment to New Jersey. This coffee is shipped in 60 pound plastic bags, placed in cardboard cartons, and is packed in jars in the United States. A relatively small amount of the instant product is shipped directly in jars to the west coast of the United States, as well as to various other countries.

Due to quota restrictions, the INCASA plant currently operates well below its capacity for producing instant coffee. However, through

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<sup>4</sup>Throughout this study, the exports of INCASA are expressed as quintales oro. The conversion ration from oro to soluble is 3:1.

business agreements with several food companies, INCASA has expanded and diversified to include a substantial number of food lines. Only about 65 percent of its total 1968 business involved coffee, and this figure apparently will be further reduced. INCASA exported an average equivalent of 32,470 quintales oro during 1963/64-1967/68, accounting for 1.6 percent of the nation's total coffee exports during that period.

Employing approximately 300 people, the INCASA plant is one of the most modern and well-equipped food manufacturing facilities in Guatemala. The company has one beneficio seco, but since the dust created by its operation damages the other food products, it is no longer used. Coffee is therefore purchased primarily in oro. The lesser quantities purchased in pergamino, are processed in beneficios secos leased for this purpose. As is generally true of all companies producing soluble coffee, INCASA purchases chiefly lower grades of coffee. The roasters and other facilities for manufacturing instant coffee are located inside the plant but do not interfere with the processing of other products.

#### ANACAFE

The National Coffee Growers Association (ANACAFE) possesses one finca, Buena Vista, in the Municipio of San Sebastián, Retalhuleu, which has a small beneficio húmedo. However, ANACAFE usually leases beneficios to process the small amounts of coffee that it purchases. The Association also operates a small roaster in Guatemala City and maintains a retail outlet for its roasted and ground product, which is

among the best quality coffee entering the domestic market. Coffee is bought and sold strictly to encourage local dealers to increase the prices paid to small producers, and to invite improvements in the quality of the locally marketed product. The latter, it is felt, will stimulate domestic consumption of higher quality coffees.

Purely as an exporter, ANACAFE is of little consequence. The Association exported no coffee in 1966/67 or 1967/68. For the three previous years, the amounts shipped totaled 160, 12, and 42 quintales oro, respectively. These consignments represented less than one-half of 1 percent of Guatemala's total coffee exports in each of these years. Other occasional exporters of a public nature are the University of San Carlos, through its ownership of two former National Fincas, and the Eastern Coffee Growers Association (ACOGUA).

#### Ports of Shipment

The history of Guatemalan seaports, *vis-a-vis* relative volumes of coffee exports, is divided into two periods. Prior to the completion of the interoceanic railroad in 1908, coffee from the Western and Central-Eastern regions was exported through Pacific ports, while that from Cobán left the country via the Atlantic port of Livingston. Foreign destination had virtually no effect upon the choice of port from which a given consignment was shipped. Since Puerto Barrios was rendered accessible by virtue of the interoceanic railroad, however, foreign markets have played a key role in determining from which ports, Atlantic or Pacific, coffee embarks.

The choice of Atlantic or Pacific ports is less influenced by transportation costs per se than by the amount of time the coffee must remain aboard ship. The cost of transporting coffee from a Pacific port to Europe via the Panama Canal approximates that of transporting it from the Western Region to one of the Atlantic ports by truck or rail and thence to Europe. The difference in delivery time between these two general routes, however, is substantial. Vessels which call on Champerico or San José normally make numerous stops prior to arrival at a United States east coast or European destination. Ships leaving Matías de Gálvez or Puerto Barrios, on the other hand, are more frequent and tend to proceed directly to the United States east coast, to Europe, or to Europe after one or two calls at United States ports. Transport time is a crucial factor not only because of business schedules, but also because it often affects bean quality. However, this consideration may be offset by importer preferences toward certain shipping lines, such as the lines of their respective countries.

Whether Pacific-bound coffee exits via Champerico or San José is decided to a large extent by the relative proximity of the exporter's storage and processing facilities. The choice between the Atlantic ports of Matías de Gálvez and Puerto Barrios, on the other hand, is based primarily upon the mode of internal transportation an exporter elects to use. Both sets of choices are likely to be altered in the near future, however. Plans for the construction of a deep-water facility at Champerico are under consideration and, if implemented, will probably lead to that port's dominance of Pacific-bound coffee exports.

Government nationalization of the railroad, and the subsequent construction of a railroad line to Matías de Gálvez, may likewise modify the relative positions of the two Atlantic ports regarding the export of coffee.

An examination of the relative importance of the various seaports, concerning the volume of coffee exports, reveals a gradually increasing prominence of the Atlantic ports since 1908. In the 1890's, for example, only about 7 percent of Guatemala's coffee exports left the country from an Atlantic port. The remainder was shipped through the Pacific ports of Champerico, San José, and Ocós. The volume of coffee exports accounted for by Puerto Barrios and Livingston increased from about 40 percent in 1912 to 56 percent in 1939. By the late 1940's, Puerto Barrios was the port for approximately 75 percent of all coffee exports. Table 29 illustrates the growth of the Atlantic ports since 1950, when their rate of increase in shipments began to diminish. Guatemala's chief coffee markets have always been, and will undoubtedly continue to be, the eastern United States and Europe. Hence, dominance of the coffee traffic by Matías de Gálvez and Puerto Barrios seems assured for the foreseeable future. Improved techniques in the storage of coffee aboard ship would be especially beneficial to the Pacific ports.

A second trend, the increase of coffee shipments from Matías de Gálvez at the expense of Puerto Barrios, has a less certain future. Figure 4 illustrates the volume of coffee handled by the various ports from 1950 to 1967/68. Although Matías de Gálvez has been gaining in



the Atlantic coffee trade at a remarkable rate, much will depend upon the outcome of the truck-versus-railroad competition. Matías de Gálvez may expand its share even further, since it is now served by both truck and rail, and because it offers improved storage and handling facilities built by the Guatemalan government.

TABLE 29  
PERCENTAGE OF GUATEMALAN COFFEE EXPORT VOLUME BY  
PORTS OF SHIPMENT, 1950-1967/68 1/

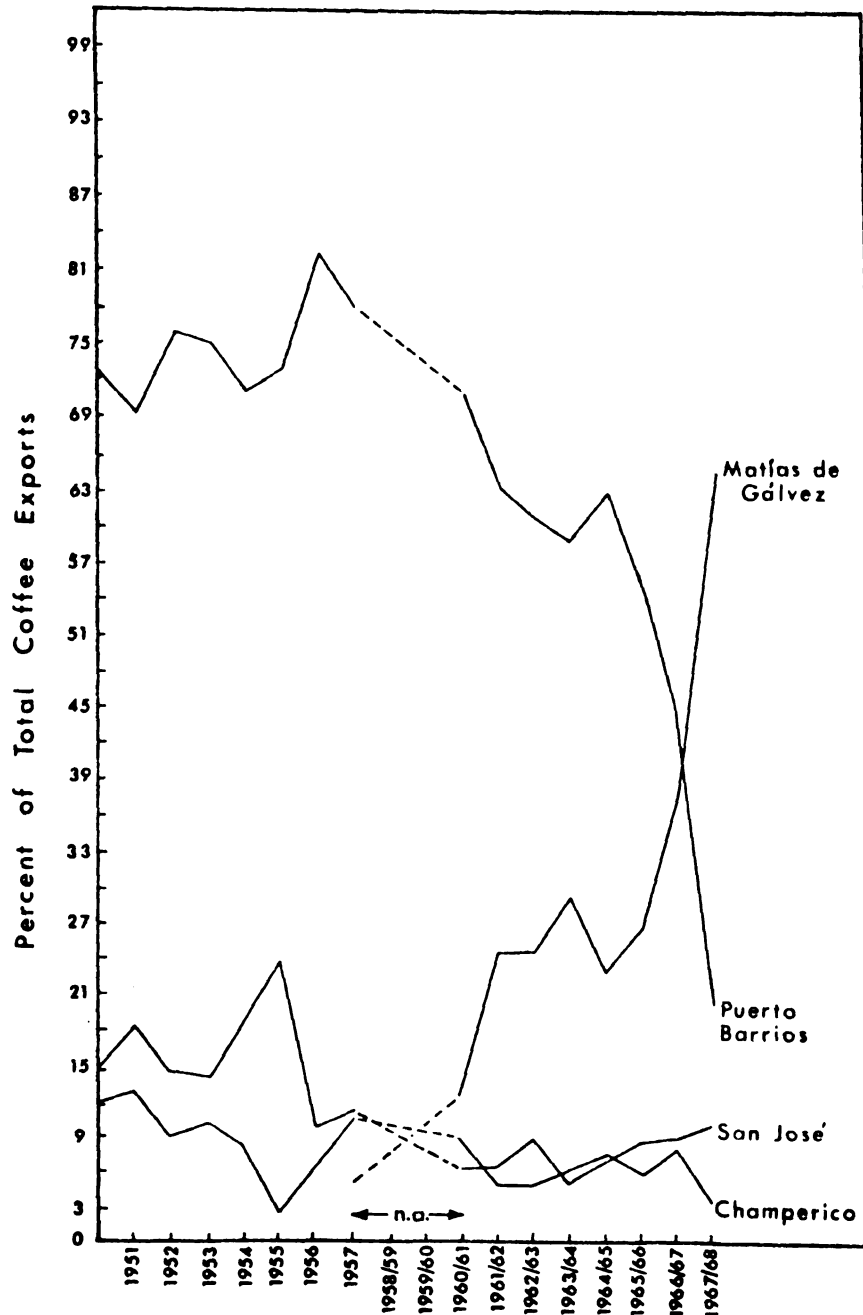
Year	Puerto Barrios	Matías de Gálvez	San José	Champerico	Total Atlantic	Total Pacific
1950	73.1	---	15.0	11.9	73.1	26.9
1951	69.0	---	18.5	12.5	69.0	31.0
1952	76.3	---	14.9	8.8	76.3	23.7
1953	75.2	---	14.5	10.2	75.2	24.7
1954	71.8	---	18.5	9.6	71.8	28.1
1955	73.5	---	24.0	2.5	73.5	26.5
1956	83.1	---	10.4	6.5	83.1	16.9
1957	78.2	---	10.8	11.0	78.2	21.8
1958	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1959	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1960/61	71.2	13.1	6.4	9.3	84.3	15.7
1961/62	63.5	24.7	5.4	6.4	88.2	11.8
1962/63	60.6	25.3	5.0	9.1	85.9	14.1
1963/64	58.6	29.6	6.4	4.7	88.2	11.1
1964/65	63.1	22.8	7.6	6.5	85.9	14.1
1965/66	58.3	27.3	7.8	6.5	85.6	14.3
1966/67	44.2	38.4	8.2	9.2	82.6	17.4
1967/68	20.0	64.8	10.4	4.6	84.8	15.0

1/ Data for 1958, 1959, and most of 1960 are not available.

Source: 1950-1957, Banco de Guatemala; 1960/61-1967/68, calculated from unpublished data from ANACAFE.

It should be noted that small amounts of coffee also leave Guatemala through three other ports. La Aurora, the Guatemala City airport, is the most important of the three, yet accounts for less than 1 percent

# PERCENT OF TOTAL COFFEE EXPORTS FROM GUATEMALAN PORTS, 1950-1967/68



Source of data: ANACAFE.

Figure 4

of total coffee exports. Nearly all of the coffee leaving the country via La Aurora is INCASA soluble. In 1958/59, the first year of INCASA operations, all of the instant coffee exports were shipped by air. This percentage gradually declined, however, and in recent years most of the soluble coffee has been exported through Matías de Gálvez. Neither of the other ports, Pedro de Alvarado and Mechor de Mencos, witness the export of coffee on a regular basis. At least the available statistics do not include data for these border cities, except for 1967/68 when a small amount of soluble coffee was exported through each of the two.

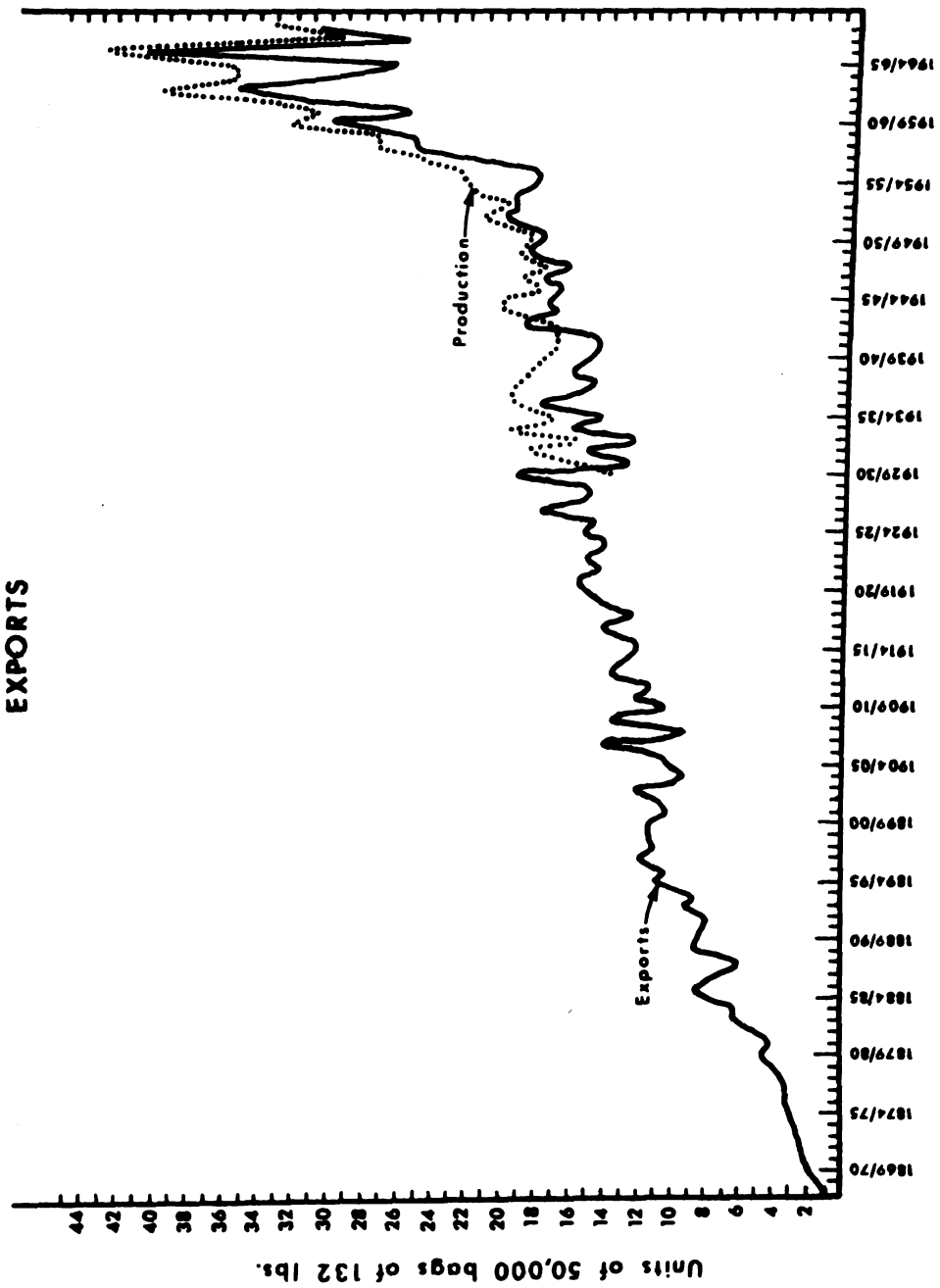
#### Volume of Coffee Exports

Generally, the volume of Guatemalan coffee exports mirrors the production of that commodity, substantiating the claim that Guatemala has experienced only minor and temporary surpluses of coffee. Such dissimilarities as exist between coffee production and export data prior to the late 1950's, as shown in Figure 5, may be attributed largely to inaccuracies in production statistics. It is possible, however, that coffee exports actually exceeded production around 1943, since coffee from El Salvador and Honduras was purchased by Guatemalans and shipped to the United States by rail during World War II.<sup>5</sup> The pre-Agreement practice of marketing coffee grown in Honduras as Guatemalan or Salvadoran has, at least ostensibly, ceased since prohibited by the International Coffee Organization in 1962.

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<sup>5</sup>IRCA data indicate that 5,441, 43,257, and 74,024 bags of 70 kilos (154 lbs.) were exported from Guatemala via Tecún Umán in 1941, 1942, and 1943, respectively.

# GUATEMALAN COFFEE PRODUCTION AND EXPORTS



Source: Production, Appendix A (FAO and USDA); Exports, Appendix B.

Figure 5

The relatively wide margin between production and exports in the mid-1950's reflects the world coffee crisis of that period. Otherwise, discounting annual and biannual fluctuations due to the natural cyclical production pattern of the coffee tree and the vagaries of weather and disease, the volume of both production and exports in Guatemala grew at a relatively steady pace until the middle and late 1950's respectively. The great increase in production at this time, common to most coffee-producing nations, reflected rapidly rising world coffee prices. Trees planted in the various countries in anticipation of great profits during the years of rising prices matured to full production in the mid-1950's. Thus, world coffee prices peaked in 1954, then fell drastically due to over-supply as many countries experienced coffee surpluses.

The other significant dissimilarity between production and exports occurred in 1964/65. The decline of production was caused in large part by a severe attack of the "coffee-leaf miner," a serious threat to coffee trees throughout much of Guatemala. In 1964/65, however, coffee exports declined more than did production, which follows the principle that exports tend to fall more markedly than production in years of poor harvest. The decline of both production and export was reversed by the record crop of the following year. This bumper crop resulted in a surplus of 449,746 bags of 60 kilos (132 lbs.), by far the largest carry-over since the Agreement and one which apparently aided

Guatemala in its petition to the International Coffee Organization for a higher basic export quota.<sup>6</sup>

The volume of coffee exports is unevenly distributed throughout the year. The monthly exports increase from October through December, peak from January through April, and decline during the remainder of the crop-year (Table 30). The effects of the export quota system are evident in two ways. First, as noted previously, the quota system causes coffee to be exported from Guatemala year-round, whereas prior to the Agreement almost all coffee was shipped between October and May. Second, the first month of each quarter, namely October, January, April, and particularly July, reflect relatively heavy volumes of coffee export traffic.

TABLE 30

## MONTHLY COFFEE EXPORTS FROM GUATEMALA, 1963/64-1966/67

Month	1966/67	1965/66	1964/65	1963/64	Average
October	1.6%	9.7%	2.5%	4.0%	4.5%
November	10.3	7.6	9.0	8.1	8.8
December	13.2	6.3	8.9	10.5	9.7
January	13.8	12.4	12.3	11.9	12.6
February	14.5	11.8	19.5	8.5	13.6
March	8.8	13.9	16.8	11.3	12.6
April	17.4	11.3	10.5	12.9	13.0
May	5.2	9.6	5.6	10.5	7.7
June	0.1	7.5	1.0	7.2	3.9
July	13.8	5.4	12.6	7.7	9.9
August	0.9	2.5	1.2	5.2	2.5
September	0.5	2.0	0.1	2.2	1.2
Totals	100.0	100.0	100.0	100.0	100.0

Source: Calculated from unpublished data from ANACAFE.

<sup>6</sup>El problema nacional del café (Guatemala: ANACAFE, April 1967), 64.

Although three of the principal ports of shipment display no major variations from the annual pattern of coffee exports, a fourth does (Figure 6). Champerico is the exception, in that a greater percentage of the annual exports from that port tend to be shipped in the first half of the crop year. This tendency reflects the fact that most of the coffee exported via Champerico comes from San Marcos and Quezaltenango, where the fruit matures earlier than in other parts of the country.

During the first half of the crop year coffee exports from Puerto Barrios are greater than those of Matías de Gálvez, while in the second half the reverse is true. As a port of shipment for Atlantic-bound coffee, Matías de Gálvez has been increasing in importance at the expense of Puerto Barrios. And, cognizant of the relatively strong emphasis upon quality in the European market, exporters prefer to use the improved facilities of Matías de Gálvez for the high altitude choice coffees exported primarily to Europe. Such coffees, maturing later, tend to be shipped in the latter half of the crop year. Importers maintain that coffee shipped via Matías de Gálvez arrives in better condition than that from Puerto Barrios, probably in part because the warehouses at Puerto Barrios are more exposed to the humid sea breezes than are those of Matías de Gálvez.

#### Destinations of Coffee Exports

The United States and Germany together take approximately three-fourths of Guatemala's coffee exports (Table 31). The United States has been the principal market for Guatemalan coffee since World War I,

MONTHLY VOLUME OF COFFEE EXPORTS,  
BY PORT OF SHIPMENT, AS A PERCENT  
OF THE ANNUAL TOTAL FOR EACH PORT\*

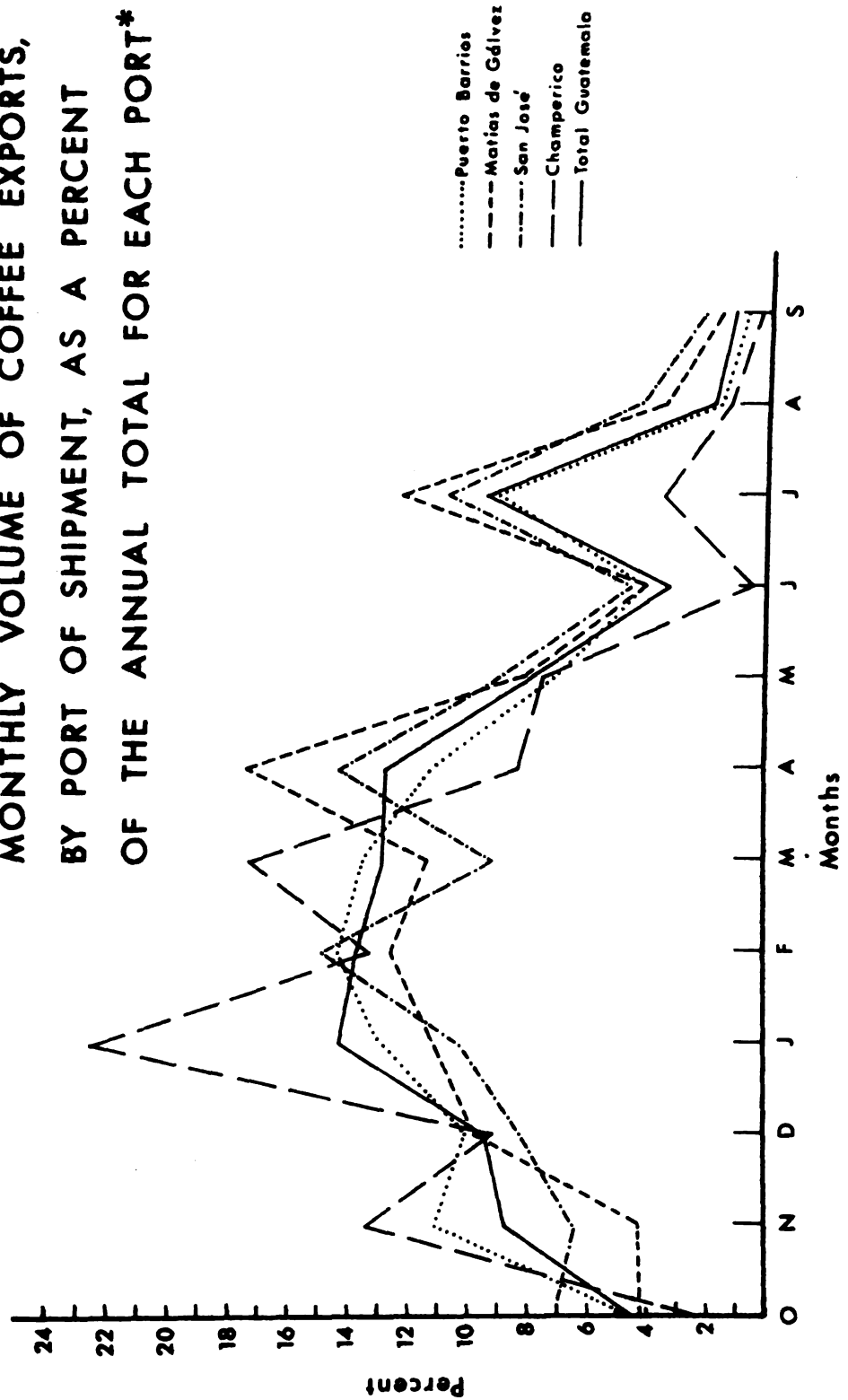


Figure 6



TABLE 31

## DESTINATION OF GUATEMALAN COFFEE EXPORTS, 1963/64-1967/68

Country	1963/64	1964/65	1965/66	1966/67	1967/68	Average
United States	62.2%	61.7%	52.4%	56.9%	47.9%	56.2%
Germany	20.7	21.5	17.4	22.0	15.9	19.5
Netherlands	7.3	5.0	4.5	5.7	5.3	5.6
Finland	1.6	1.1	2.4	4.5	4.0	2.7
Belgium	2.5	2.2	1.9	2.8	2.9	2.5
South Africa	0.1	0.1	5.5	0.1	2.7	1.7
Jordan	0.2	1.3	4.7	0.3	1.2	1.5
Japan	0.3	1.2	1.6	1.1	2.5	1.3
Sweden	1.2	0.9	1.1	0.8	0.9	1.0
Italy	0.9	0.6	0.6	0.7	1.0	0.8
Spain	0.3	1.3	0.8	1.4	0.4	0.8
Sudan	0.0	0.6	1.3	0.0	2.0	0.8
Switzerland	0.8	1.0	0.8	0.6	0.7	0.8
Poland	0.0	0.0	0.0	0.0	3.4	0.7
Canada	0.4	0.3	0.7	0.6	1.1	0.6
Iraq	0.0	0.0	0.0	0.0	2.8	0.6
Norway	0.6	0.6	0.7	0.9	0.4	0.6
France	0.2	0.1	0.1	0.8	0.6	0.4
Denmark	0.4	0.3	0.3	0.2	0.3	0.3
Kuwait	0.0	0.0	1.4	0.0	0.0	0.3
Rumania	0.0	0.0	0.0	0.0	1.6	0.3
Thailand	0.0	0.0	0.0	0.1	1.6	0.3
United Kingdom	0.1	0.1	0.1	0.3	0.3	0.2
Malaysia	0.0	0.0	0.8	0.0	0.0	0.2
Austria	0.2	0.1	0.1	0.2	0.1	0.1
Others 1/	0.0	0.0	0.8	0.2	0.4	0.2
Totals	100.0	100.0	100.0	100.0	100.0	100.0

1/ Fifteen countries in addition to those above had averages of less than 0.1 percent, most of them only occasional markets for Guatemalan coffee. See Appendix D for amounts of coffee shipped to the various countries.

Source: Calculated from unpublished data from ANACAFE.

while Germany has resumed its traditional position as a major buyer only since the late 1950's. During the years 1950 to 1956 the Netherlands, Sweden, Belgium and Luxembourg, and Canada usually surpassed Germany as markets for Guatemalan coffee.<sup>7</sup> Germany accounted for about 4 percent of the world's coffee imports from 1951 to 1955, and 7 percent from 1956 to 1960. During the same periods that country took about 3 percent and 14 percent of Guatemala's coffee exports, respectively. Thus, Germany's coffee imports from Guatemala increased almost twice as rapidly as its total coffee imports during the 1950's.<sup>8</sup> This trend continued into the 1960's, albeit more slowly. In 1967 and 1968, Germany took 19 percent of Guatemala's coffee exports, while receiving only about 9 percent of total world coffee imports. The United States, on the other hand, shows a relative decline in importance as a market for Guatemalan coffee. Not only has the European market for coffee been expanding more rapidly than that of the United States, but Guatemala has been striving to lessen its dependence upon the United States as a trading partner.

Other than the United States and Germany, the percentage of Guatemalan coffee exports taken by any one country is small. The European nations excluding Germany, together receive approximately 17 percent of Guatemala's coffee exports and about 37 percent if Germany is included. The Netherlands, Finland, and Belgium each took an average of more than 2 percent during the period 1963/64-1967/68. The new

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<sup>7</sup>The United Nations Food and Agriculture Organization, The World Coffee Economy, Commodity Bulletin Series, 33 (Rome, 1961), 67.

<sup>8</sup>Ibid., 51.

market countries, to which non-quota coffee may be sold, naturally tend to receive more of Guatemala's coffee during years of bumper harvests.

The markets for Guatemalan coffees differ not only in volume, but also according to type. The United States imports some 92 percent of Guatemala's "Good Washed" and "Extra Good Washed" coffees, but only 4.5 percent of the "Strictly Hard Bean" and virtually none of the "Maragogype" coffees (Table 32). Germany, on the other hand, is the major destination of "Strictly Hard Bean" coffee, while Belgium takes the greatest proportion of the "Maragogype" type. The higher grown coffees are sold to a relatively greater extent on the European market, whereas the lower grown types are purchased primarily by United States importers. This generalization is not unique to Guatemala but is representative of the pattern of world coffee trade in general.

The distribution of Guatemalan coffee exports by port of shipment supports the conclusion that Guatemalan coffee tends to move to the ports nearest the foreign market destination. Puerto Barrios ships coffee to the greatest number of foreign markets, followed by Matías de Gálvez, San José, and Champerico (Table 33). The destinations of coffee exported via Puerto Barrios and Matías de Gálvez are similar, as might be expected, since the two ports are virtually identically located relative to foreign markets. It is also noteworthy that the United States imports a higher percentage of Guatemala's Pacific-bound coffee, relative to the Atlantic, although it receives a greater total volume from the Atlantic ports. This situation is due to the Atlantic ports handling most of the coffee destined for Europe, thereby lessening the

TABLE 32

DESTINATION OF GUATEMALAN COFFEE EXPORTS, BY TYPE, 1963/64-1966/67 <sup>1/</sup>

Country	Good Washed	Extra Good Washed	Prime Washed	Extra Prime Washed	Semi-Hard Bean	Hard Bean	Strict. Hard Bean	Marago- type
United States	91.4%	92.4%	84.9%	74.6%	65.9%	47.3%	4.5%	---
Germany	0.8	2.1	2.9	6.0	11.4	25.6	62.9	28.0
Netherlands	1.0	0.7	2.2	4.8	6.3	9.8	10.0	13.7
Finland	---	---	0.5	0.2	0.8	2.7	8.6	---
Belgium	0.7	0.9	1.0	1.7	2.0	1.8	4.1	44.6
South Africa	0.2	---	1.4	3.3	0.9	1.5	0.8	---
Jordan	2.0	---	2.7	0.3	1.2	1.6	0.6	---
Japan	2.2	0.8	0.5	0.4	1.3	1.6	0.4	0.4
Sweden	0.4	0.2	0.1	2.1	1.0	2.0	1.3	1.5
Italy	0.4	0.1	0.2	1.3	0.8	0.8	0.9	5.6
Spain	---	---	1.8	0.4	2.7	---	---	---
Sudan	---	---	---	1.0	---	0.7	1.0	2.1
Switzerland	---	---	0.1	0.4	0.3	0.4	2.8	3.5
Canada	0.7	1.1	0.5	0.5	1.4	0.6	0.1	---
Norway	---	0.1	0.1	0.5	1.2	1.7	1.1	---
France	0.1	---	0.1	0.6	0.4	0.5	0.2	0.4
Denmark	---	0.9	0.1	1.4	0.3	0.1	---	0.1
United Kingdom	---	0.1	0.2	0.1	0.1	0.2	---	---
Austria	---	---	---	---	0.1	0.3	0.5	---
Others	0.1	0.6	0.7	0.4	1.9	0.8	0.2	0.1
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of All								
Coffee Exports	2.6	4.3	28.1	16.7	10.2	13.6	21.2	0.7

<sup>1/</sup> The countries are listed according to importance of total coffee imports from Guatemala.

About 2.6 percent of the exports were comprised of other types of coffee.

Source: Calculated from unpublished data from ANACAFE.

relative importance of Atlantic-bound coffee destined for the United States. More coffee for the Canadian market, on the other hand, is exported through Pacific ports than from those on the Atlantic.

Virtually all of the coffee destined for Japan and other Asian markets, is shipped through San José and Champerico.

TABLE 33

GUATEMALAN COFFEE EXPORTS, BY MAJOR PORTS AND COUNTRY OF DESTINATION, 1963/64-1966/67

	Puerto Barrios	Matías de Gálves	San José	Champerico
United States	58.8%	52.3%	63.6%	78.4%
Germany	20.5	30.0	1.1	---
Netherlands	7.2	5.3	---	---
Belgium	2.4	3.2	---	---
South Africa <u>1/</u>	2.0	---	---	1.7
Jordan	1.7	2.1	---	---
Switzerland	1.2	---	---	---
Finland <u>2/</u>	1.0	1.7	15.0	3.0
Spain	1.0	---	---	---
Sweden	---	---	5.6	7.6
Japan	---	---	9.8	4.1
Canada	---	---	2.6	3.6
Norway	---	---	1.4	---
Others	4.2	5.4	0.9	1.6
Totals	100.0	100.0	100.0	100.0

1/ the figure 1.7 for Champerico is misleading in that coffee was actually shipped from that port to South Africa during only one of the years under consideration.

2/ The figure 15.0 for San José is not representative, since an unusually large amount of coffee was shipped to Finland from that port in 1966/67. The average for the other three years is 5.8 percent.

Source: Calculated from unpublished data from ANACAFE.

The single consistent exception to the general pattern of coffee movement from Guatemala, and minor in the total scheme, is the coffee destined for Scandinavian countries. Much, and in some years most, of

the coffee sold to Denmark, Norway, Sweden, and Finland is exported through Champerico and San José. This exception is explained by the proclivity of Scandinavian importers to use national shipping lines, which do not always call at the Atlantic ports of Guatemala.

## CHAPTER X

### GUATEMALAN COFFEE IN THE NATIONAL AND WORLD ECONOMIES

For almost a century, the historical, political and economic fabric of Guatemalan life has been closely tied to the production and export of coffee. Spurred by the demise of cacao, indigo, cochineal, and cotton exports, and abetted by its inherent assets of transportability and marketability, coffee assumed preeminence among Guatemalan exports as early as the 1870's. The one hundred years since then have witnessed a change of government policy from ardent encouragement and financial support for expanding coffee acreage, to the prohibition of planting new lands to coffee. But, although modern government planning emphasizes agricultural and export diversification, coffee continues to play a leading, if diminishing, role in the Guatemalan economy. Guatemalan coffee, of course, is not nearly as significant a factor in world coffee trade as it is in the national economy. Nevertheless, Guatemala occupies a relatively important position among the coffee producing nations of Latin America and the world. No country vies with Brazil or Colombia in the production of coffee, but among the nations of secondary importance Guatemala compares favorably.

#### Coffee in the Guatemalan Economy

Although its general importance is obvious, the real significance of coffee in the Guatemalan economy is not easily reckoned. No single

measure can accurately assess the role of so vital an industry. The importance of a commodity is traditionally measured by the proportion of total exports which it comprises, yet the relative importance of an item among a country's exports is, at best, a general indicator to be interpreted with caution and in conjunction with other information.

Since the mid-1950's, the value of coffee exports as a percent of total Guatemalan export value has declined (Table 34). The average percentage accounted for by coffee in the 1950's was 77, whereas the corresponding figure for the period 1960-1968 is 51. This relative decrease is partially due to lower world coffee prices since 1954. More recently, however, Guatemala has achieved some diversification of exports. Cotton, the most outstanding example, rose from about 4 percent of the total export value in the 1950's to 19 percent in 1966.<sup>1</sup> Sales of manufactured goods to Central American Common Market countries have also increased.<sup>2</sup> Most notable is the fact that the decline in the proportion of total exports accounted for by coffee occurred during a concurrent rise in the absolute value of coffee exports. The average value of coffee exports from 1950 to 1959 was approximately \$73,000,000, while that for 1960-1966 was \$79,000,000.<sup>3</sup>

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<sup>1</sup>Klaus W. Berg, "Guatemala's Coffee Economy, Its Coffee Surplus Problem and Diversification Possibilities," final report of the Agricultural production economist for the UNDP-FAO-ANACAFE Diversification Project in Guatemala (unpublished), May, 1968, 28.

<sup>2</sup>Inter-American Development Bank, Socio-Economic Progress in Latin America, Social Progress Trust Fund: Eighth Annual Report, 1968 (Washington, D. C.: IDB, 1969), 181.

<sup>3</sup>Berg, 27.



TABLE 34

COFFEE EXPORTS AS A PERCENT OF TOTAL GUATEMALAN EXPORTS,  
BY VALUE, 1947-1968

Year	Percent of Exports	Comparative Rank 1/	Year	Percent of Exports	Comparative Rank 1/
1947	61.2	n.a.	1958	75.5	2
1948	61.2	n.a.	1959	74.8	2
1949	71.5	n.a.	1960	69.8	2
1950	78.0	n.a.	1961	62.8	2
1951	76.8	n.a.	1962	62.4	3
1952	81.8	n.a.	1963	49.5	4
1953	76.7	3	1964	45.7	6
1954	77.5	4	1965	49.4	4
1955	76.5	3	1966	55.5	2
1956	79.0	1	1967	34.5	6
1957	75.6	3	1968	33.0	5

1/ Rank among Latin American countries according to the percent of total exports accounted for by coffee.

Source: 1947-1959, Solicitud de Guatemala, al fondo especial de las Naciones Unidas para la diversificación de cultivos en condiciones económicamente marginales (Guatemala: ANACAFE, 1963, 17, and Annual Coffee Statistics, Vols. 17-23 (New York: Pan American Coffee Bureau, 1953-59); 1960-1968, USDA, Foreign Agriculture Circular: Coffee, Washington, D. C.: USDA-FAS (February, 1966 and January, 1970), 7 and 9, respectively.

The value of coffee as a percentage of total export value appears to be diminishing more rapidly in Guatemala than in other Latin American producing nations. Table 34 illustrates this trend, which was interrupted in 1965, and particularly in 1966, when only Colombia exceeded Guatemala in the relative importance of coffee among total exports. The Guatemalan coffee harvests of these two years were large and world prices had been somewhat strengthened by small Brazilian crops beginning in 1964. The four Latin American nations in which coffee ranked higher than in Guatemala as a percentage of total export value in 1968 were

Colombia (67.7%), El Salvador (42.7%), Brazil (41.7%), and Haiti (38.9%). In that year coffee also constituted a greater proportion of total exports in four African countries: Uganda (54.6%), Ethiopia (51.4%), Angola (48.8%), and the Ivory Coast (34.2%).<sup>4</sup>

Reflecting the absolute increase in the value of coffee exports, the contribution of coffee to the Guatemalan Gross National Product has remained fairly constant despite the decline of coffee exports relative to total exports. Coffee comprised an average of 7.8 percent of the GNP in 1950-1959 and 8.1 percent in the period 1960-1966 (Table 35). The proportion of the GNP accounted for by agriculture has also been stable, around 30 percent, as has the percent of agricultural output accounted for by coffee. Total agricultural output increased from approximately \$225 million in 1950 to \$407 million in 1966, or by 81 percent (at 1958 market prices). During the same period, the value of coffee production increased from approximately \$58 million to \$105 million, or also by 81 percent. It should be added, however, that:

Agricultural output declined by almost 1 percent between 1966 and 1967 because of reductions in the production of exportable coffee and cotton, which together represent almost half of the total. These crops declined by 20 percent and 13 percent, respectively, because of adverse climatic factors and unfavorable developments in international markets.<sup>5</sup>

Although it accounts for over one-fourth of the total value of agricultural production, and despite its relatively extensive use of the

<sup>4</sup>USDA, Foreign Agriculture Circular: Coffee, (January, 1970), 9.

<sup>5</sup>IDB, Socio-Economic Progress in Latin America, 180.

TABLE 35  
COFFEE PRODUCTION IN GUATEMALA RELATIVE TO THE GROSS NATIONAL PRODUCT  
AND TO TOTAL AGRICULTURAL OUTPUT (AT 1958 MARKET PRICES)

Year	GNP 1/ Agriculture 1/	Total Agriculture 1/	Green Coffee 1/ Agriculture 1/	Agriculture: % of GNP	Coffee: % of Agriculture	Coffee: % of GNP
1950	731.5	224.8	58.0	30.7	25.8	7.9
1951	742.4	222.9	54.2	30.0	24.3	7.3
1952	754.5	230.4	63.4	30.5	27.5	8.4
1953	781.0	239.1	60.5	30.6	25.3	7.8
1954	806.1	240.3	57.7	29.8	24.0	7.2
1955	827.7	235.2	63.6	28.4	27.0	7.7
1956	908.3	252.3	67.4	27.8	26.7	7.4
1957	947.0	258.9	67.3	27.3	26.0	7.1
1958	962.2	277.1	76.3	28.8	27.5	7.9
1959	998.9	293.6	88.2	29.9	29.5	8.8
1960	1,027.2	308.4	87.7	30.9	28.4	8.5
1961	1,053.8	315.1	85.6	29.9	27.2	8.1
1962	1,085.5	326.4	88.3	30.1	27.1	8.1
1963	1,193.8	379.0	103.0	31.7	27.2	8.6
1964	1,301.6	381.9	97.8	29.3	25.6	7.5
1965	1,318.9	388.5	105.3	29.5	27.1	8.0
1966	1,362.9	406.7	104.8	29.8	25.8	7.7

1/ In millions of U.S. dollars.

Percentages calculated before rounding.

Source: Berg, 16 and 17.

land, coffee culture occupies only a small fraction of the total acreage in Guatemala. It is estimated that about 592,800 acres are planted to coffee, representing some 2.2 percent of the total area and 8.9 percent of the total agricultural land.<sup>6</sup>

Coffee production is a major source of employment in Guatemala. In 1960, the Banco de Guatemala estimated that 226,357 workers were employed in the production of coffee, of which 74,490 were colonos, 147,725 seasonal migrants, and 4,142 coffee finca employees not directly involved in coffee production.<sup>7</sup> The total represents an increase of 24 percent since the 1950 census. This estimate, however, is perhaps conservative, apparently being based upon information exclusively from registered fincas and not taking into account 25,000 to 30,000 small growers who realize a considerable portion of their cash income from the sale of coffee. Thus, a minimum estimate of 250,000 workers and small farmers, earning a major portion of their cash income directly from the production of coffee, would seem more realistic. Considering the families of these workers and small producers, it seems reasonable to assume

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<sup>6</sup>This estimate of total coffee acreage, quoted in various publications in Guatemala (235,000 or 240,000 hectares are the figures usually given), appears to be somewhat high, perhaps by some 30,000 acres. It should be noted, however, that an acre, a manzana, or a hectare "of coffee" are not rigorously defined terms and are open to considerable latitude in interpretation, particularly in areas of small producers and inter-cropping.

<sup>7</sup>Guatemala: información sobre los diversos aspectos de la economía cafetera, an unpublished report of a mission from the International Coffee Organization (February, 1967), 29.

that the total number of Guatemalans directly dependent upon coffee production for a livelihood may approximate one million, or about one-fifth of the total population.

There are no estimates of the numbers of people who earn a living from the processing, transportation, storage or financing of coffee, nor are data available for the number of people affected indirectly by the incomes and wages generated from coffee. It is certainly safe to conclude, however, that the livelihood of at least one-third of all Guatemalans is affected by the health of the domestic and international coffee trade.

As a source of government revenue, coffee appears to be gradually waning. Receipts from coffee exports have declined both absolutely and relative to total revenues (Table 36). The general reduction in the level of government revenue accruing from coffee reflects changes in Guatemala's coffee tax structure, which were apparently made for the purpose of maintaining a competitive position among producing nations. In 1962, the base for computing the export tax on coffee was shifted from New York market prices to prices quoted in local contracts, and in 1967 the export tax on coffee destined for new markets was eliminated. These tax modifications raised producer incomes, while an income tax introduced in 1963 had little effect on coffee growers since they are permitted to deduct export taxes from income taxes. Also, farmers with annual incomes under \$15,000 are exempted from the income tax. Thus, coffee taxes per se, aside from export taxation, are not a significant source of federal revenue. Part of the decline in revenue from coffee

export relative to total government receipts may also stem from coffee's diminishing proportion of the value of total exports. Yet, while accounting for an average of only 46.5 percent of the value of all exports in the three-year period 1965-1967, coffee comprised over 90 percent of the taxes from all exports during these years.<sup>8</sup>

TABLE 36

COFFEE EXPORT TAXES AS A SOURCE OF GOVERNMENT REVENUE IN GUATEMALA 1/

Year	Total Government Receipts	Government Receipts From Coffee Exports	Coffee Export Tax as a Percent of Total Government Receipts
1951/52	\$ 57,400,000	\$ 8,500,000	14.8
1952/53	61,500,000	10,500,000	17.1
1953/54	63,600,000	10,500,000	16.5
1954/55	68,700,000	14,500,000	21.1
1955/56	74,200,000	13,700,000	18.5
1956/57	84,800,000	15,200,000	17.9
1957/58	82,300,000	11,500,000	13.9
1958/59	81,600,000	10,300,000	12.6
1959/60	78,500,000	9,600,000	12.2
1960/61	77,300,000	8,200,000	10.6
1961/62	76,300,000	8,800,000	11.5
1962/63	74,000,000	6,100,000	8.2
1963/64	88,600,000	5,800,000	6.5
1965	109,100,000	8,100,000	7.4
1966	108,100,000	8,100,000	7.5
1967	112,600,000	5,700,000	5.1

1/ Exclusive of donations, loans, and other extraordinary receipts.

Source: Berg, 23, and Boletín Estadístico, Banco de Guatemala (April, May, and June, 1968), 48.

The level of capital investment generated from coffee production in Guatemala has been neither measured nor estimated. It is apparent,

<sup>8</sup> Calculated from data in the Boletín Estadístico, Banco de Guatemala (April, May, and June, 1968), 50.

however, that it is low, both relatively and absolutely. An average of only 11.2 percent of the GNP was invested in agriculture during the years 1960-1966. And, in 1966, the amount invested in agriculture was equal to only 4.4 percent of the total value of agricultural production.<sup>9</sup> It is known, moreover, that Guatemalan coffee farmers invest little in machinery or fertilizers, that the land on coffee fincas in most cases was amortized many years ago, and that large expanses of new lands are not being planted to coffee. Some capital from coffee has obviously been invested in commercial, urban-based beneficios secos and roasting facilities in recent years. Investments of coffee-generated capital in the non-agricultural sectors are not estimated, but are believed to be minor.

#### Guatemala's Role in the World Coffee Economy

The proportion of the total volume of world coffee production accounted for by Guatemala has remained remarkably constant for at least forty years (Table 37). Guatemala produced an average of 2.61 percent of the world's coffee during the period 1929/30-1968/69, and an average of 2.68 percent in 1960/61-1968/69. Since 1930, the proportion of the world's coffee produced by Guatemala has varied within a range of only 1.6 percent, from a high of 3.7 percent in 1944/45 to a low of 2.1 percent in 1959/60. Nor do these proportions of world production differ greatly from those of earlier decades. Guatemala produced approximately 3.4 percent of the world's coffee between 1885 and 1910.<sup>10</sup>

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<sup>9</sup>Berg, 24 and 25.

<sup>10</sup>Calculated from data in Mosk, 12.

TABLE 37

GUATEMALA AS A COFFEE PRODUCER BY RANK AND PERCENT OF WORLD  
TOTAL, BY VOLUME, 1929/30-1968/69

Year	Rank Among Producers			Percent of Production		
	World	Latin America	Central America	World	Latin America	Central America
1929/30	7	6	2	1.7	1.8	29.2
1930/31	6	5	2	2.6	2.9	28.5
1931/32	5	4	1	2.3	2.5	38.4
1932/33	6	5	2	2.5	2.9	32.7
1933/34	4	3	1	2.3	2.5	36.4
1934/35	6	5	2	2.7	3.1	34.7
1935/36	6	5	2	2.6	3.0	35.7
1936/37	7	6	2	2.3	2.6	34.9
1937/38	7	6	2	2.4	2.7	34.5
1938/39	6	5	2	2.3	2.6	33.3
1939/40	7	6	2	2.5	2.9	33.0
1940/41	5	5	2	2.7	3.0	31.6
1941/42	5	5	2	2.7	3.1	34.0
1942/43	5	5	2	3.0	3.5	32.9
1943/44	5	5	2	3.2	3.7	36.4
1944/45	4	4	2	3.7	4.3	36.4
1945/46	5	5	2	3.0	3.5	36.3
1946/47	4	4	2	2.9	3.4	37.5
1947/48	4	4	1	2.6	3.1	36.0
1948/49	5	5	2	2.6	3.1	29.8
1949/50	5	5	2	2.6	3.0	32.5
1950/51	5	5	2	2.5	3.0	30.4
1951/52	4	4	1	2.7	3.3	35.5
1952/53	5	5	2	2.4	2.9	28.9
1953/54	6	4	1	2.6	3.2	34.2
1954/55	6	5	2	2.7	3.4	29.9
1955/56	7	5	2	2.3	3.0	32.6
1956/57	7	5	2	2.9	3.9	30.7
1957/58	6	5	2	2.6	3.3	32.3
1958/59	8	5	2	2.3	2.9	30.3
1959/60	8	5	2	2.1	2.5	32.7
1960/61	8	5	2	2.4	3.1	30.1
1961/62	9	5	2	2.3	3.0	29.9
1962/63	8	4	1	2.8	4.0	34.5
1963/64	9	5	2	2.5	3.6	31.2
1964/65	10	5	2	3.2	5.3	29.4
1965/66	8	4	1	2.5	3.4	35.2
1966/67	10	5	2	2.8	4.1	29.5
1967/68	9	5	2	2.7	4.1	27.9
1968/69	10	5	2	2.9	4.6	29.7

Source: Calculated from data in FAO, World Coffee Economy, 1961, 45-6; UN, UNCTAD Commodity Survey, 1966, 90; and Foreign Agriculture Circular: Coffee, USDA-FAS (Feb., 1966; Jan., 1968; and Jan., 1970), 2.



Guatemala's share of Latin American coffee production has gradually increased since 1930, primarily because of a decline in the relative volume of Brazilian production. During 1960/61-1968/69, an average of 3.9 percent of all coffee grown in Latin America was produced in Guatemala. Meanwhile, the proportion of Central American coffee produced by Guatemala has remained stable, comprising an average of 32.7 percent during the period 1929/30-1968/69, and 30.8 percent during 1960/61-1968/69. In all probability, Guatemala will continue to account for a relatively constant share of world and Central American coffee production, while its proportion of Latin American coffee production gradually increases.

The rank-position of Guatemala among the coffee producing nations of the world has been declining, particularly since about 1953. Its rank among Latin American and Central American producers, on the other hand, has remained relatively stable. The diminishing rank among world producers is explained by the rapidly increasing production of several African nations. Guatemala has thus been displaced as the fifth largest producer in the world since the early 1950's. These relationships between Guatemala and other coffee producing nations of the world reflect a relative shift in coffee production from Latin America to Africa, which has become increasingly apparent since the mid-1950's. Latin America accounted for an average of 91 percent of world production during the period 1929/30-1933/34; 85 percent during 1945/46-1949/50; 78 percent during 1955/56-1959/60; 71 percent during 1960/61-1964/65;

and only 65 percent during 1964/65-1968/69.<sup>11</sup> The relative growth in African production resulted largely from Brazilian valorization schemes, encouragement from European colonial powers, and the increasing popularity of soluble coffees for which the robusta coffees of Africa are suitable.

Prior to World War II, Guatemala usually ranked sixth or seventh among world coffee producers, after Brazil, Colombia, Indonesia, El Salvador, Venezuela, and sometimes Mexico. The War eliminated Indonesia as a major coffee producer, however, and Guatemala subsequently occupied a fairly consistent fifth position among both world and Western Hemisphere producers during the 1940's and early 1950's. During this period, Venezuela gradually faded to lesser importance as a producer, while Mexico slowly increased in rank, and Guatemala occasionally out-produced either or both El Salvador and Mexico to assume third or fourth place. But in the 1950's, the Ivory Coast, Angola, and Uganda began to preempt the fifth, sixth, and seventh positions, and in the 1960's Indonesia and Ethiopia also displaced Guatemala in some years.

Since Guatemala has consistently accounted for about 2.6 percent of world coffee production, it is obvious that its decreasing rank among world producers has not meant an actual decline as a world supplier of coffee. Rather, the relative increase in African production has come chiefly at the expense of Brazil, thereby affecting the rank of Guatemala, but not the percent of world production accounted for by that country.

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<sup>11</sup>Calculated from data in USDA, Foreign Agriculture Circular: Coffee (various issues), and from data in FAO, The World Coffee Economy, 45-6.

As an exporter of coffee, Guatemala follows much the same general pattern relative to other exporting nations as in the case of production (Table 38). Guatemala's share of Central American coffee exports is almost identical with that of production. During 1960-1968 Guatemala accounted for 30.5 percent of the coffee exports from Central America. However, relative to the rest of the world and to Latin America, Guatemala tends to account for a slightly greater percent of the total volume of exports than of the total production, perhaps reflecting a relatively low level of domestic consumption and/or unreported production. During the years 1960-1968, Guatemala accounted for an average of 3.1 percent of world coffee exports and 4.6 percent of Latin American coffee exports, by volume. This production-export relationship is particularly in contrast with that of Mexico, a country which ranked ahead of Guatemala in production in each year 1964/65-1968/69, but which ranked after Guatemala in export volume in three of the five years. Prior to the early 1950's, Guatemala tended to rank higher as an exporter than as a producer, while the reverse has been true since that time, again reflecting the tendency for two or three nations (often Mexico, Indonesia, and/or Ethiopia) to out-produce but not out-export Guatemala. Indicative of the quality of coffee exported from Guatemala, however, is the higher rank of that country in terms of the value of coffee exports. The average rank of Guatemala in value of coffee exports was fifth in 1960-1966, while the corresponding rank in volume was seventh.

TABLE 38

GUATEMALA AS A COFFEE EXPORTER BY RANK AND PERCENT  
OF WORLD TOTAL, BY VOLUME, 1929-1968

Year	Rank Among Exporters			Percent of Exports		
	World	Latin America	Central America	World	Latin America	Central America
1929	6	5	2	3.1	3.4	35.1
1930	5	4	2	3.7	4.1	36.4
1931	6	5	2	2.2	2.4	27.6
1932	5	4	1	3.4	4.0	41.3
1933	7	6	2	2.2	2.5	26.1
1934	5	4	2	3.2	3.7	36.1
1935	6	5	2	2.5	2.9	30.1
1936	5	4	1	3.1	3.6	37.2
1937	5	4	2	3.1	3.7	29.5
1938	5	4	2	2.7	3.1	34.2
1939	5	4	2	2.5	2.9	31.5
1940	4	4	2	3.0	3.4	31.1
1941	4	4	1	3.4	4.0	36.1
1942	3	3	1	5.1	6.0	38.7
1943	4	4	2	3.7	4.2	34.5
1944	4	4	2	3.3	3.7	34.6
1945	4	4	2	3.1	3.6	35.2
1946	3	3	1	2.8	3.3	38.5
1947	4	4	2	3.3	3.8	37.0
1948	6	4	2	2.5	2.9	32.3
1949	5	4	2	2.7	3.1	34.5
1950	5	4	2	3.1	3.8	32.7
1951	7	5	2	2.7	3.3	31.9
1952	5	4	2	3.1	3.8	34.4
1953	6	5	2	2.7	3.3	31.4
1954	6	5	2	3.0	3.9	33.0
1955	7	5	2	2.9	3.7	30.7
1956	8	5	2	2.7	3.7	35.0
1957	9	5	2	2.9	3.9	29.9
1958	8	5	2	3.3	4.6	30.7
1959	7	3	1	3.3	4.4	34.5
1960	9	5	2	3.1	4.4	31.9
1961	8	5	2	3.1	4.4	33.0
1962	8	5	2	3.0	4.3	29.6
1963	7	4	2	3.3	4.8	33.3
1964	8	5	2	2.7	4.2	27.6
1965	8	4	2	3.5	5.7	32.1
1966	6	3	1	3.6	5.7	35.5
1967	7	4	2	2.7	4.2	25.8
1968(Pre.)	8	5	2	2.7	3.9	25.7

Source: Calculated from data in World Coffee Economy 1961, 55-6; UNCTAD Commodity Survey, 1966, 92-3; and Foreign Agriculture Circular: Coffee, (June, 1963; July, 1966; and July, 1969), 9, 7, 11, respectively.

The importance of Guatemala as a supplier of coffee is perhaps most accurately measured by the country's export position relative to other nations exporting the same kind of coffee. The International Coffee Organization classifies the coffee-producing nations of the world into four categories: (1) Colombian Milds, (2) Other Milds, (3) Non-Washed Arabicas, and (4) Robustas. Guatemala is in the category "Other Milds," shown in Table 39.<sup>12</sup> "Other Milds" countries accounted for 57 percent of the exports of all milds coffees, and 36 percent of total world coffee exports of all kinds during the five years 1963-1967.

TABLE 39  
COFFEE EXPORTS FROM "OTHER MILDS" COUNTRIES

Country	1963-1967 Average 1/	% of Total 1963-1967	1955-1959 Average 1/	% of Total 1955-1959
El Salvador	1,757	17.8	1,279	17.0
Guatemala	1,538	15.7	1,133	15.1
Mexico	1,374	13.9	1,331	17.8
Costa Rica	916	9.3	566	7.6
Ecuador	675	6.8	437	5.8
Peru	646	6.5	207	2.8
India	460	4.7	179	2.4
Dominican Republic	446	4.5	400	5.4
Nicaragua	415	4.2	337	4.5
Haiti	365	3.7	412	5.5
Honduras	364	3.7	193	2.6
Venezuela	326	3.3	487	6.5
Others <sup>2/</sup>	585	5.9	523	7.0
Totals	9,867	100.0	7,484	100.0

1/ 1,000's of bags of 60 kilos (132 lbs.).

2/ Includes Burundi, Cuba, Jamaica, Panama, and Rwanda.

Source: Calculated from data in USDA, Foreign Agriculture Circular: Coffee (July, 1966 and July, 1969), 7 and 11, respectively.

<sup>12</sup>The first category consists of Colombia, Kenya, and Tanzania; the second of the countries listed in Table 39; the third of Brazil, Ethiopia, Paraguay, and Bolivia; and the fourth of the remaining African producers, plus Indonesia and Trinidad and Tabago.

Guatemala is the second most important exporter of "Other Milds," after El Salvador, accounting for approximately 16 percent of the exports from this group of countries. In exports of all milds coffees, Guatemala is third, after Colombia and El Salvador, accounting for about 9 percent during 1963-1967. Thus, Guatemalan coffees exert a greater influence upon international coffee prices and trade than is apparent from a general consideration of that country among the various producing nations without regard for the kind of coffee exported. Coffee export quotas for "Other Milds" countries, for example, are adjusted quarterly on the basis of the movements of the average price of three coffees: Guatemala Prime Washed, El Salvador Central Standard, and Mexico Prime Washed.

Guatemala's role in the coffee world is reflected in the participation by that country in international coffee organizations. Guatemala has been an active member of the Pan American Coffee Bureau since 1937, the founding date. The Bureau's members consist of the major coffee-producing nations of Latin America, and its principal objective is to promote coffee consumption, particularly in the United States. Member countries were active in the establishment of several regional and international agreements regarded as precursors of the International Coffee Agreement of 1962.

Along with the other Central American states and Mexico, Guatemala became a charter member of the Federación Cafetalera Centro América y Mexico (FEDECAME) in 1945. The first general assembly of FEDECAME

convened in Guatemala City in 1946. The Federation admitted to membership Cuba, the Dominican Republic and Haiti in April, 1948, and Ecuador, Peru and Venezuela in October of the same year. The name was then changed to Federación Cafetalera de América, but the initials remained the same. Excepting Colombia, the major milds producers of the Western Hemisphere were represented. The exclusion of Colombia was by design, to give the smaller milds producers a stronger international voice in coffee matters.<sup>13</sup> The organization was dissolved in 1968, however, principally because its functions were in large part duplicated by those of the International Coffee Organization.

As a member of the International Coffee Agreement, Guatemala has a basic export quota of 1.8 million bags of 60 kilos (132 lbs.), the seventh largest quota as of 1968. With thirty-two votes, the same number as Mexico, Guatemala is also seventh in voting power among the nations designated as net exporters. Six importing countries, however, also have more than thirty-two votes, making Guatemala thirteenth in overall voting strength within the Agreement. Two importing nations, Canada and the United Kingdom, have the same number of votes as Guatemala. Thus, the thirteenth position is actually shared by Guatemala, Mexico, Canada, and the United Kingdom. Sixty-six nations comprise the voting membership (1968), of which forty-two are net exporters and twenty-four are net importers. Briefly summarized, the primary objective of the International Coffee Agreement is to achieve long-term

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<sup>13</sup>Agustín Ferreiro, "FEDECAME: origin y significado," Revista Cafetalera, Vol. 1, No. 6 (February, 1962), 35-6 + 38.

equilibrium between world supply and demand for coffee, thereby maintaining international prices at levels acceptable to both exporting and importing nations, and avoiding exaggerated price rises and depressions.



## CHAPTER XI

### SUMMARY AND CONCLUSIONS

In retrospect, the findings of this study have supported some basic assumptions and shown others to be incorrect. The research has underlined the value of regional investigation and planning. Major regional divisions previously contemplated were found to exist in fact, but were in need of precise delimitation. The anticipated sources of data and the means of obtaining information had been well-conceived. Conversely, the uncomprehended diversity of the Guatemalan coffee industry invalidated a number of preconceptions. Beneficios do not serve readily definable supply areas, exporters do not purchase from limited zones or exclusive districts, and coffee does not move primarily to the nearest port of shipment. In brief, the overall complexity of the industry comprises that aspect of the findings least anticipated on the basis of preliminary investigation.

#### Summary

Coffee is exceeded in value of production by a number of the world's major commercial crops, but ranks second only to petroleum among all commodities in international trade. In Guatemala coffee has dominated exports for almost a century, accounting at times for over 80 percent of the total export value.

The cultivation and processing of coffee are among the most complicated and varied procedures of any agricultural products. The various phases of cultivation and preparation for export are particularly important in Guatemala, an exporter of high quality "milds" coffees. Most Guatemalan coffee is grown under shade, at elevations between 1,500 and 5,000 feet. The beans are hand-picked, beginning in August at lower elevations and terminating in April at higher altitudes. Processing consists of the removal of the outer skin, pulp, mucilage, parchment and silverskin, in addition to drying and grading. The beans are usually stored in pergamino form and processed to green coffee shortly before export. While most of the Guatemalan crop is exported, numerous roasters and grinders exist to serve the domestic market.

Coffee was first cultivated in Guatemala about the middle of the eighteenth century, probably by Jesuit missionaries in the vicinity of Antigua. Its early use was not commercial, but ornamental. Initial coffee culture on a commercial scale occurred near Guatemala City around 1800, spreading to its present areal distribution from the early Antigua-Amatitlán-Guatemala City core area. Dependence upon a single export commodity prevailed long before the emergence of coffee as the mainstay of the national economy. Early coffee farming actually filled a void left by the failure of its predecessors, such as indigo and cochineal, and was therefore encouraged by the government and other interested organizations.

The incipient coffee industry, from 1850 onward, was characterized by a markedly inadequate transportation infrastructure, involvement by

extra-nationals, government sponsorship, and a growth rate gradual at first but increasingly rapid after about 1870. The tempo of growth was evident in both the areal dispersion of coffee acreage and in the expanding volume of exports, the latter commencing on a regular basis during the 1850's.

The period from 1880 to 1944 is described as the era of German influence. Foreign settlers were attracted in large numbers after 1830, and, although not the most numerous, German immigrants came to control over half of the importing and exporting firms in Guatemala by 1900. Gradually, capital generated by these businesses and by a vigorous German economy was invested in the local coffee industry. By 1914, nearly 50 percent of Guatemala's coffee was produced by foreign nationals, with some 170 German proprietors accounting for more than one-third of the total number. Coffee trade, thus, became subject in large part to German and other foreign hegemony. In the wake of several decades of encouraged immigration, the Guatemalan government and people grew increasingly disillusioned with foreign and particularly German "exploitation." During World War II, following years of resentment, Guatemala expropriated the German holdings, prompted apparently by a reaction against an influx of pro-nazi propaganda and sentiment as well as prodding from the United States.

The rapidly expanding coffee industry of the period 1880-1944, fostered considerable internal development. Roads and railroads were built in response to the need for coffee transport, nearly all of the rail system being constructed between 1884 and World War I. Numerous

disadvantages also developed. By 1880, coffee dominated the national economy, rendering the country highly susceptible to the vagaries of the international market. Realization of this vulnerability led to intermittent attempts by the government to stimulate the production of alternative export crops.

A much slower rate of growth characterized the Guatemalan coffee industry during the post-war years, owing in part to nationalization of German holdings, disruption of trading patterns by the War, and a more cautious outlook for the future of coffee farming. With possession of the former German holdings, the Guatemalan government became the nation's largest coffee producer. Declining output, political machinations, and policy vacillation beset the National Fincas from their inception. The United States took a greater proportion of Guatemala's coffee exports after the War, with sales to Germany relatively unimportant until the late 1950's. World coffee events, particularly the fluctuating supply-demand disequilibrium and attempts to rectify the situation through an international coffee pact, exerted a great influence on the Guatemalan industry and thus on national development as well.

The spread of coffee culture in Guatemala profoundly affected the geographic distribution and way of life of the Indian peoples. Some were impelled to live and work on coffee fincas, while others were obliged to migrate seasonally to labor in the coffee harvests. Coercion was both direct by means of labor and vagrancy laws and indirect through



population pressure on a diminishing resource base. Inasmuch as coffee has been the predominant commercial crop in Guatemala during the past century, the history of rural labor and agrarian reform is closely tied to it. Labor constitutes one of the major traditional inputs and problems of the Guatemalan coffee industry. Productivity is markedly low, with labor accounting for 50 percent or more of a typical finca's operating costs despite minimal wages.

Agrarian reform has in recent years been concerned almost exclusively with rural cooperatives, the National Fincas, and colonization in non-coffee areas. Of some two hundred agricultural cooperatives in Guatemala, about thirty-three are primarily coffee cooperatives administered by ANACAFE. Several National Fincas have been converted to cooperatives, but erratic policies for these farms have caused some to revert to state farms after abortive attempts at cooperatives. A number of National Fincas have been turned over to banks and individuals in payment of debts incurred by the government and the status of such holdings remains uncertain and vacillating. Hence, only the twenty-four fincas administered by INTA are here considered as Fincas Nacionales, of which twenty-one produce coffee.

The Asociación Nacional del Café, established in 1960, is the most important institution directly concerned with the Guatemalan coffee industry. Supported by membership fees and taxes, this non-profit corporate entity provides services of research, technical assistance, promotion, testing, arbitration, registration, and data maintenance. ANACAFE also distributes quotas, regulates exports, and represents the

country in international matters pertaining to coffee. The central offices of ANACAFE are in the capital, while regional offices are maintained in the major producing zones. In recent years ANACAFE, in collaboration with the United Nations Food and Agriculture Organization, has been involved with the FAO-ANACAFE Diversification Project. The goal of the project is to encourage the production of substitute crops, particularly in areas considered "marginal" for coffee. To date, pilot programs have been established for oil palm, tea, fruit, dairying, and beef cattle.

The location of coffee production in Guatemala is dependent upon a number of environmental and economic factors. Most coffee is produced in areas with average annual temperatures between 60° and 70° F., altitudes from 1,500 to 5,000 feet, and average annual precipitation from 70 to 150 inches. A light, deep, fertile soil with a porous subsoil is optimal for the coffee tree, and this type of soil has developed from volcanic material on the Pacific piedmont.

The patterns of spatial distribution of coffee production in Guatemala appear to be relatively static. Land and labor, the two most important inputs, do not appear to affect spatial distribution to a significant degree. Most coffee fincas were established many years ago, and the planting of new areas to coffee is legally prohibited. Diversification, or a change from coffee to an alternative crop, in almost every case requires more investment of capital, more careful management, and more intensive use of the land. Thus, although returns to the land

may be increased through diversification, total net income may actually decline. This is especially true if the proprietor must discontinue off-farm employment or hire a competent manager for the finca. Similarly, neither labor nor transportation appear to significantly affect patterns of spatial distribution.

Three major regions, several subregions, and a number of outlying areas can be identified on the basis of temperature, precipitation, soil, production, acreage, yields, farm size, altitude, and percentage of total area planted to coffee. The Western Region, accounts for 58 percent of the total acreage devoted to coffee and 63 percent of total production. Second in importance, the Central-Eastern Region includes 26 percent of the total area under coffee and 26 percent of total production. The Cobán Region has 10 percent of the coffee acreage and 6 percent of production.

In general, the West is characterized by more rainfall, higher temperatures, deeper volcanic soils, lower altitudes for coffee, greater production, higher yields, larger farms and a higher percentage of total area planted to coffee. The Central-East, in contrast, has less precipitation, a more well-defined dry season, higher average altitudes and cooler temperatures, smaller farms, and a higher quality coffee. Third, and quite different from the other major regions, the Cobán zone is well-known for its light but steady year-round precipitation, relatively poor soils, lower labor costs, production of coffee with a distinct flavor which is preferred in Germany, and low yields.



Coffee moves from producer to port of shipment in a variety of ways. Some large fincas process their own coffee and transport it directly to the port of shipment. These fincas, possessing private beneficios may buy and/or process coffee from smaller producers in their locale. More typically, a grower sells to a large exporter who receives the coffee at his beneficio, processes it, and transports it by truck or rail to the port of shipment. Ten large exporting firms ship nearly 80 percent of the total coffee exports. Most of the country's coffee, although produced in southwestern and south-central Guatemala, is exported through Puerto Barrios and Matías de Gálvez on the Atlantic coast. The major flows of coffee are (1) from the Western and Central-Eastern Regions via Guatemala City to Matías de Gálvez and Puerto Barrios; (2) from the West and Central-Eastern Regions to Guatemala City and then Champerico or San José, or to these Pacific ports from a large finca or an urban-based processing mill along the south coastal highway; (3) from the Cobán area to El Rancho and thence to Puerto Barrios or Matías de Gálvez; and (4) from the Cobán zone to Livingston via the Río Polochic and Lake Izabal, and thence to Puerto Barrios or Matías de Gálvez. At least some coffee, however, moves from every major producing area to every port.

Guatemala exported an average of 1,543,716 bags of 60 kilos (132 lbs.) during the period 1963/64-1967/68, of which some 85 percent moved through Puerto Barrios and Matías de Gálvez. Nearly all of the remainder was shipped via San José or Champerico. The pivotal factor in determining the port from which a given lot of coffee is to be shipped is

the foreign destination. Since the principal markets for Guatemalan coffee are eastern United States and West Europe, most coffee is shipped through the Atlantic ports of Puerto Barrios and Matías de Gálvez.

The role of coffee in the Guatemalan economy defies precise measurement although several acceptable indicators are available. As a result of export diversification and lower prices, the value of total Guatemalan exports accounted for by coffee declined from 77 percent in the 1950's to an average of 51 percent during the period 1960-1968. In some recent years coffee has comprised less than 40 percent of the total export value. Moreover, as a percent of total exports, coffee appears to be declining at a faster rate than in other Latin American nations. The contribution of coffee to the Guatemalan Gross National Product has remained relatively constant, reflecting an absolute increase in the value of coffee exports. Coffee comprised 7.8 percent of the GNP during 1950-1959, and 8.1 percent during 1960-1966. The percent of agricultural output accounted for by coffee is also stable at about 26 percent. Despite the importance of coffee in the national economy, the acreage devoted to its cultivation occupies only about 2 percent of the total national area and 9 percent of the agricultural land. Coffee, although still the major base for export taxes contributes a declining share of government revenue. On the average, it accounted for about 7 percent of government receipts during 1963-1967.

Guatemala produced, on the average, 2.7 percent of world production and 3.1 percent of world exports during the 1960's. In the same

period, it accounted for nearly 4 percent of the production and 4.6 percent of the exports of coffee from Latin America. As a producer, Guatemala in 1968/69 ranked tenth in the world, fifth in Latin America, and second in Central America. Its respective rank for coffee exports in 1968 was eighth, fifth, and second. Among suppliers of "milds" coffees Guatemala ranks third, after Colombia and El Salvador, exporting about 9 percent of the world total in 1963-1967.

### Conclusions

Lacking a sizable domestic market, Guatemalan commercial agriculture has featured the predominance of a single export crop. Coffee was an early choice because of its marketability and transportability. Hypothetically, the non-existence of coffee would merely have resulted in the adoption of the next most advantageous crop. Given the limited local market and industrial development, it is highly probable, perhaps inevitable, that the Guatemalan economy would come to depend upon a small number of export crops. The fact that a single agricultural commodity came to so completely dominate the economy reflects the remarkable advantages of producing and marketing coffee relative to other commercial crops.

Coffee has contributed much to the development of Guatemala. Many, if not most, of the rail lines were constructed primarily to haul coffee. Farmers built and maintained roads while developing lands not previously exploited commercially. As the backbone of the economy, coffee has even contributed much to the nation's urban development. Coffee farming

has likewise been in large part responsible for the locational and cultural displacement of the indigenous population. The effect of coffee farming upon the native people of Guatemala is commonly underestimated. Coffee farmers have, in general, inhibited agrarian reform and rural unionization. Thus, the preponderance of the coffee industry, now and during the past century, has rendered it responsible for much of Guatemala's economic and social progress as well as the ills which retard such development.

The spatial distribution of coffee production in Guatemala is determined by physical factors to a far greater extent than purely economic considerations. Historically, roads and railroads were constructed to serve the coffee areas, as opposed to coffee being grown along pre-established routes of transportation. As Guatemala develops economically, however, certain competitive land uses will appear near the larger cities and along major transportation arteries, in some cases displacing coffee cultivation. Total coffee acreage is likely to decrease as a result of agricultural diversification, with production intensified on the remaining coffee land. Thus, it can be expected that economic factors will have an increasing effect upon the spatial distribution of coffee production and that the strength of this influence will probably increase with economic development.

Diversification of coffee land will not occur uniformly throughout the zones of coffee production. Since the size of holdings, type of coffee produced, management, intensity of land use, labor costs,

transportation facilities, and environmental conditions vary spatially, it can be assumed that diversification will likewise demonstrate areal differences. Government policies and plans are almost certain to have different effects in the various regions, indicating the need for regional as well as national planning.

Climate appears to be the single most important determinant in the regional variation in coffee production. Intra-regionally, however, altitude is more significant. Elevation influences the variety, yields, farm size, processing and other aspects of the industry, as well as virtually dictating quality.

There is a tendency for coffee to be sold in cherry form in zones of good roads, less rugged terrain, small farms, and seasonal water difficiencies. Overall quality and product uniformity is enhanced by the processing of coffee in fewer large beneficios, rather than in numerous smaller on-farm facilities. Improvements in transportation are likely to reinforce this trend. It seems likely that crop diversification may also spur the sale of cherry coffee, since a greater range of crops is likely to demand an increased number of man hours and overhead. This, in turn, might encourage specialization in agricultural production, leaving processing to others.

A trend also exists for producers to sell in pergamino form, rather than processing the coffee to oro before either selling it or exporting directly. This inclination has been fostered by the export quota system and by the predilection of exporters to purchase coffee in pergamino form. Given this condition and the ever increasing

complications of international market connections and financing, the trend will in all probability continue. It is probable that the coffee export business will likewise become increasingly concentrated in a small number of large firms, which may also accelerate the tendency for coffee to be sold in cherry.

It appears likely that the government will become increasingly involved in the coffee business. The National Fincas may eventually be eliminated as such, but government policy in general is likely to be geared toward the alleviation of economic and social problems which confront the industry. Attempts to make the coffee industry a strong force for national development seem probable. In fact, increased government "intervention" or attention appears almost certain.

The internal movement or geographic flow of coffee is unlikely to change in the near future. The construction of a deep-water port at Champerico will not greatly affect the movement of coffee unless the markets for Guatemalan coffee change radically. Innovations in coffee storage aboard ship, plus faster and more direct ocean transport, are likely to have a greater effect upon patterns of internal movement than are non-governmental factors within the country. The predominant future mode of internal transport is not yet evident and may eventually be either rail or truck, depending to a significant degree upon government policy.

Although assured of a major role for many years, the relative importance of coffee in the Guatemalan economy is decreasing. Moreover,

the crop appears to be diminishing more rapidly as a proportion of the total value of exports in Guatemala than elsewhere in Latin America. No tendency for coffee to increase in importance is displayed by the indicators for which data are available, including (1) percent of total exports, (2) proportion of GNP, (3) percent of agricultural output, (4) proportion of total and agricultural land, and (5) source of government revenue. Employment is an apparent exception. More people earn a living from coffee today than in 1950. However, the proportion of the total population engaged in activities related directly to coffee has declined.

By virtue of the International Coffee Agreement export quota system, Guatemala's position among world coffee suppliers is not likely to change very much. Nevertheless, should that nation fail to remain competitive, a gradual erosion of its markets may occur. Less certain, is the future relative position of Guatemala as a supplier of the expanding traditional markets and "new markets." In summary, the position of Guatemala among world coffee producers and exporters is unlikely to be altered significantly, except perhaps gradually and in the long run.

## APPENDICES



# APPENDIX A

## GUATEMALAN COFFEE PRODUCTION, 1929/30-1968/69

Crop Year		Bags of 60 Kilos (132 lbs.)	
1929/30		685,000	<u>3/</u>
1930/31		763,333	
1931/32		916,667	
1932/33		748,333	
1933/34		968,333	
1934/35		840,000	
1935/36		935,000	
1936/37		963,333	
1937/38		941,667	
1938/39		896,667	
1939/40		873,333	
1940/41		831,667	
1941/42		830,000	
1942/43		863,333	
1943/44		985,000	
1944/45		998,333	
1945/46		891,667	
1946/47		928,333	
1947/48		845,000	
1948/49		945,000	
1949/50		926,667	
1950/51		903,333	
1951/52		1,050,000	
1952/53		971,667	
1953/54	1,140,000	<u>1/</u>	1,046,667
1954/55	1,080,000		1,088,333
1955/56	1,117,000		1,108,333
1956/57	1,250,000		1,226,667
1957/58	1,350,000		1,350,000
1958/59	1,394,000		1,333,333
1959/60	1,746,000		1,600,000
1960/61	1,645,000	1,500,000	<u>2/</u>
1961/62	1,676,000	1,675,000	
1962/63	1,962,000	1,900,000	1,489,930
1963/64	1,740,000	1,790,000	<u>4/</u>
1964/65	1,753,000	1,630,000	1,360,501
1965/66	2,101,000	2,050,000	1,437,594
1966/67		1,670,000	1,795,112
1967/68		1,850,000	1,416,287
1968/69		1,740,000	

Source: 1/ World Coffee and Tea, Vol. 7, No. 2 (April, 1967), 43;  
2/ USDA, Foreign Agriculture Circular: Coffee, various issues, 1960-1970. 3/ FAO, The World Coffee Economy, 1961, 46-7; 4/ ANACAFE, unpublished data for registered fincas only. Note: These figures are approximate, having been converted to a common unit from a variety of other units, which in themselves, are estimates.

## APPENDIX B

## EXPORTS OF COFFEE FROM GUATEMALA, 1854/55-1967/68

Crop Year	Bags of 60 Kilos	Crop Year	Bags of 60 Kilos	Crop Year	Bags of 60 Kilos
1854/55	72	1892/93	458,774	1930/31	601,619
1855/56	n.a.	1893/94	437,578	1931/32	754,959
1856/57	n.a.	1894/95	530,224	1932/33	586,962
1857/58	n.a.	1895/96	498,495	1933/34	806,543
1858/59	358	1896/97	578,843	1934/35	678,581
1859/60	1,177	1897/98	557,916	1935/36	881,109
1860/61	4,225	1898/99	566,601	1936/37	781,471
1861/62	9,128	1899/00	497,100	1937/38	721,317
1862/63	15,320	1900/01	518,428	1938/39	790,099
1863/64	12,315	1901/02	593,416	1939/40	747,612
1864/65	16,956	1902/03	443,832	1940/41	706,008
1865/66	24,593	1903/04	496,540	1941/42	720,542
1866/67	26,569	1904/05	621,624	1942/43	938,675
1867/68	57,539	1905/06	524,713	1943/44	831,044
1868/69	54,692	1906/07	691,527	1944/45	855,018
1869/70	86,808	1907/08	436,783	1945/46	822,123
1870/71	100,595	1908/09	675,912	1946/47	874,907
1871/72	107,716	1909/10	509,487	1947/48	784,371
1872/73	115,387	1910/11	593,837	1948/49	917,493
1873/74	123,880	1911/12	554,309	1949/50	900,275
1874/75	125,410	1912/13	671,923	1950/51	872,774
1875/76	159,006	1913/14	637,378	1951/52	996,564
1876/77	160,972	1914/15	594,649	1952/53	949,050
1877/78	160,507	1915/16	670,599	1953/54	950,940
1878/79	193,211	1916/17	692,999	1954/55	890,389
1879/80	222,150	1917/18	599,931	1955/56	899,433
1880/81	199,618	1918/19	687,445	1956/57	1,031,428
1881/82	239,407	1919/20	720,312	1957/58	1,250,044
1882/83	309,793	1920/21	770,698	1958/59	1,248,612
1883/84	284,667	1921/22	717,112	1959/60	1,485,536
1884/85	398,909	1922/23	733,504	1960/61	1,275,983
1885/86	406,141	1923/24	680,802	1961/62	1,542,989
1886/87	366,765	1924/25	742,614	1962/63	1,761,933
1887/88	280,905	1925/26	714,954	1963/64	1,523,461
1888/89	423,497	1926/27	873,951	1964/65	1,313,807
1889/90	389,925	1927/28	735,807	1965/66	2,054,354
1890/91	402,112	1928/29	731,920	1966/67	1,266,732
1891/92	376,924	1929/30	945,163	1967/68	1,560,224

Sources: 1854/55-1929/30, Revista Agrícola de Guatemala, Vol. XVI, Nos. 9-10 (October-November, 1939), 222-23; 1930/31-1959/60, Revista Cafetalera, Vol. 1, Nos. 1-3 (January-March, 1961), 53; 1960/61-1961/62, Boletín Estadístico (ANACAFE), Nos. 21-23 (February-April, 1963), 25; 1962/63, El problema nacional del café (ANACAFE) (April, 1967), 64; and 1963/64-1967/68, unpublished data from ANACAFE. These figures are approximate, having been converted to a common unit from a variety of other units.

## APPENDIX C

## GREEN COFFEE TRANSPORTED TO PUERTO BARRIOS BY IRCA

Loading Station	Bags of 70 Kilos (154 lbs.)	
	1951/52-1959/60 Average	1961/62-1966/67 Average
Santa Inés	11	94
Iguana	2,463	2,271
Gualán	3,748	5,328
Zacapa	89	40
El Rancho	9,524	6,809
Guatemala	61,026	44,787
Pamplona	78,270	118,979
Morán	17,479	6,317
Zapote	4,798	224
Amatitlán	53,368	75,094
Palín	416	---
San Fernando	535	---
Concepción	4,882	64,419
Escuintla	13,878	6,284
Obispo	801	565
Santa Lucia Cotzumalguapa	5,872	27,926
Pantaleón	135	---
Patulul	18,275	25,196
Guatalón	5,572	440
Río Bravo	209	6,463
Nahualate	2,880	15,422
Palo Gordo	202	919
San Antonio Suchitepéquez	10,555	8,190
Mazatenango	70,522	22,411
Chitalón	1,290	865
San Felipe	2,635	---
San Sebastián	4,306	2,461
Retalhuleu	63,023	50,068
San Miguelito	---	446
Las Animas	3,157	2,185
La Esperanza	272	---
Alianza	1,332	---
Génova	125	96
Coatepeque	138,890	130,151
Pajapita	77,353	67,209
Tecún Umán	12,350	5,022
Total	670,243	696,681

Source: International Railways of Central America, Guatemala Division.

## APPENDIX D

## GREEN COFFEE TRANSPORTED TO CHAMPERICO BY IRCA

Loading Station	Bags of 70 Kilos (154 lbs.)	
	1951/52-1959/60	1961/62-1966/67
	Average	Average
El Rancho	6	17
Guatemala	10	608
Pamplona	135	717
Morán	155	---
Zapote	31	---
Amatitlán	371	313
Concepción	---	227
Escuintla	---	91
Santa Lucia Cotzumalguapa	31	275
Patulul	3,801	553
Guatalón	914	---
Río Bravo	---	164
Nahualate	386	1,754
Palo Gordo	71	83
San Antonio Suchitepéquez	897	2,017
Mazatenango	6,601	6,043
Chitalón	63	255
San Felipe	514	---
San Sebastián	640	---
Retalhuleu	11,173	6,627
San Miguelito	---	149
Las Animas	2,241	2,318
Alianza	555	---
Génova	23	---
Coatepeque	36,482	32,598
Pajapita	14,405	17,111
Tecún Umán	2,920	1,042
Total	82,425	72,962

Source: International Railways of Central America, Guatemala Division.

# APPENDIX E

## GREEN COFFEE TRANSPORTED TO SAN JOSE BY IRCA

Loading Station	Bags of 70 Kilos (154 lbs.)	
	1951/52-1959/60 Average	1961/62-1966/67 Average
Gualán	338	58
El Rancho	778	217
Guatemala	16,067	4,856
Pamplona	31,543	20,207
Morán	14,472	1,417
Zapote	1,229	257
Amatitlán	22,203	11,931
Palín	48	2
San Fernando	25	---
Concepción	1,161	3,791
Escuintla	3,885	165
Obispo	---	303
Santa Lucia Cotzumalguapa	226	1,979
Pantaleón	84	83
Patulul	5,140	2,396
Guatalón	140	---
Río Bravo	---	13
Nahualate	148	---
San Antonio Suchitepéquez	917	83
Mazatenango	761	978
Chitalón	---	34
San Felipe	6	---
San Sebastián	169	---
Retalhuleu	886	359
Alianza	125	---
Génova	31	---
Coatepeque	6,593	1,747
Pajapita	2,092	2,084
Tecún Umán	188	148
Total	109,255	53,108

Source: International Railways of Central America, Guatemala Division.

## APPENDIX F

DESTINATION OF GUATEMALAN COFFEE EXPORTS, 1963/64-1967/68  
(In Quintales Oro) 1/

Destination	1963/64	1964/65	1965/66	1966/67	1967/68	Average
United States	1,220,329	1,044,394	1,388,512	928,042	962,219	1,108,699
Germany	407,681	364,041	460,210	361,926	320,389	382,849
Netherlands	143,539	85,218	120,416	93,263	106,504	109,788
Finland	32,608	19,327	63,349	73,875	79,440	53,720
Belgium	48,466	36,483	49,692	44,894	58,643	47,636
South Africa 2/	1,302	1,117	144,715	300	54,775	40,442
Jordan 2/	4,500	21,525	123,638	4,500	21,534	35,139
Japan 2/	5,662	19,476	42,158	17,756	49,518	26,914
Sweden	24,041	15,261	29,883	13,625	18,788	20,320
Sudan 2/	---	9,916	34,500	---	40,601	17,003
Spain	5,443	21,740	22,000	22,261	8,000	15,889
Switzerland	16,125	16,560	20,621	10,586	14,889	15,756
Italy	16,794	9,734	16,556	12,049	20,491	15,125
Poland 2/	---	---	---	---	68,761	---
Norway	11,444	9,774	17,827	14,107	8,968	12,424
Canada	7,087	5,099	17,926	10,078	21,270	12,292
Iraq 2/	---	---	---	---	55,982	11,196
Kuwait 2/	---	---	37,294	---	---	7,459
France	4,500	2,302	3,953	13,550	12,504	7,362
Thailand 2/	---	---	---	---	32,625	6,525
Denmark	7,249	5,730	8,853	3,820	5,888	6,308
Rumania 2/	---	---	---	---	31,428	6,286
Malaysia	---	---	20,250	---	---	4,050
United Kingdom	1,987	1,770	3,780	4,357	6,512	3,681
Saudi Arabia 2/	---	825	11,726	---	---	2,510
Austria	3,870	1,980	2,385	2,524	1,598	2,471
Ceylon 2/	---	---	4,575	---	---	915
Hungary 2/	---	---	---	---	3,000	600
Bahrein 2/	---	---	331	---	2,479	562

## Appendix F (Continued)

Destination	1963/64	1964/65	1965/66	1966/67	1967/68	Average
British Honduras	32	129	355	409	1,063	398
Iran 2/	---	---	1,500	---	---	300
Muscat & Oman	---	---	---	---	1,500	300
New Zealand	150	420	300	---	150	204
Nicaragua	---	---	---	---	639	128
Ireland	300	67	---	75	150	118
Formosa 2/	---	---	60	166	237	93
Monaco	---	---	150	---	---	30
Australia	---	137	---	---	---	27
Jamaica	61	---	---	---	---	12
Costa Rica	---	4	---	---	59	12
Honduras	---	---	---	---	---	<1
Uruguay	3	---	---	---	---	<1
Puerto Rico	---	1	---	---	---	<1
Total	1,963,173	1,693,030	2,647,515	1,632,163	2,010,604	1,989,297

Source: Unpublished data from ANACAFE.

1/ One quintal equals approximately one hundredweight.

2/ New market countries.

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