

GEOGRAPHY OF COSTA RICA

By

SAMUEL MORGAN HARRIS

Bachelor of Arts

Oklahoma Agricultural and Mechanical College

Stillwater, Oklahoma

1956

Submitted to the faculty of the Graduate School of
the Oklahoma State University of Agriculture and Applied Sciences
in partial fulfillment of the requirements
for the degree of
MASTER OF SCIENCE
May, 1958

NOV 5 1958

GEOGRAPHY OF COSTA RICA

Thesis Approved:

Edward A. Kees
Thesis Adviser

Ralph E. Birchard

Robert M. W. See
Dean of the Graduate School

409885

PREFACE

When one first arrives in Costa Rica, there is an immediate recognition of a distinctive national character of the country which differs from that of the rest of Central and South America. There is an expected urgency of friendliness and cooperation in an atmosphere of self-confident vitality which contrasts with much of Latin America. Its people are self-assured, dynamic, and possess a quiet confidence in themselves.

While a member of the United States Air Force, the writer was assigned to the Inter-American Geodetic Survey, a division of the Army Map Service. The various duties performed with that agency required extensive travel through all of Central and South America, living and working with a great number of native peoples in the various countries. A considerable amount of that time was devoted to personal research and experiences with the native peoples.

Through the period of November, 1949, through May, 1952, the writer had innumerable visits in Costa Rica, and during the same period had occasion to work and live in several communities, including San José, Puerto Limón, and Puntarenas, for several months. Much indebtedness is due many friends and co-workers in these several areas.

It was the national character of Costa Rica which first attracted the attention of the writer to this small country. Inculcated with a historic heritage of freedom and independence, Costa Rica was an obvious selection for further study. Although very little has been written about

this small country, all available government publications, books, and periodicals have been used in compiling this research.

The writer wishes to express his gratitude to Professor Edward E. Keso for his constant supervision and assistance which made this study possible; Drs. Ralph E. Birchard, Robert C. Fite, and David C. Winslow for their suggestions and criticism; to Professor Ray L. Six for his assistance and criticism of the physiographic section of the study; and to Max Holloway for his able cartographic work.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
Geographical Location	1
Early Ethnic Development and Colonization	3
Organization of Study	5
II. THE PHYSICAL CHARACTERISTICS OF THE COUNTRY	7
Physiography	7
Climate	11
Vegetation	16
III. THE PEOPLE	19
Growth in Population	20
Racial Characteristics	22
Major Occupations	24
Population Distribution	25
IV. AGRICULTURE	27
Basic Crops	28
Lumber	29
Livestock	30
Agricultural Education and Progress	31
Plantation Agriculture	33
Coffee	33
Bananas	35
Cacao	37
Abaca	38
Rubber	39
V. TRANSPORTATION AND COMMUNICATION	40
Railroads	41
Ports and Waterways	42
Highways	46
Airlines	47
Communications	48

TABLE OF CONTENTS (Concluded)

Chapter	Page
VI. INDUSTRY AND FOREIGN TRADE	50
Factories	51
The Tourist Industry	53
Water Power	53
Mining	54
Foreign Trade	55
VII. SUMMARY AND CONCLUSION	61
BIBLIOGRAPHY	65

LIST OF TABLES

Table	Page
I. Climatological data for Puerto Limón	13
II. Climatological data for Miravalles	13
III. Climatological data for Hacienda Mojica	14
IV. Climatological data for San José	14
V. Vertical Zonation of Vegetation and Climate	17
VI. Population Increase	22
VII. Racial Proportions in the Three Regions of Costa Rica and Foreign Population	23
VIII. Major Occupations	24
IX. Population by Provinces	25
X. Major Agricultural Crop Production	32
XI. Principal Exports, 1953	33
XII. Principal Imports, 1953	51
XIII. General Trade of Costa Rica	56
XIV. Foreign Trade in 1955	57
XV. Exports by Commodities	58
XVI. Imports by Commodities	59

LIST OF ILLUSTRATIONS

Figure	Page
1. Location--Political Map of Costa Rica, insert Middle America .	2
2. Physiography	8
3. Temperature Zones	12
4. Rainfall Zones	15
5. Transportation--Railroads and Highways	45

CHAPTER I

INTRODUCTION

Costa Rica is a small, relatively unknown country, unique in character, and radically different from the other countries which have evolved from the remnants of the once-great Spanish empire. Unlike the other areas of Latin America, Costa Rica was colonized, not conquered, which helped to establish a basis from which it has risen to be a stable, democratic, and economically viable nation.

Geographical Location

Costa Rica is the second smallest of the five Central American republics, with an area of 19,695 square miles, of which 43 square miles represent nearby islands. Cocos Island, about 300 miles off the Pacific Coast, is also under Costa Rican sovereignty. Although it is mostly tropical jungle, it is of potential strategic importance in the defense of the Panama Canal.

Costa Rica is bounded on the north by Nicaragua, on the northeast by the Caribbean Sea, on the southeast by Panama, and on the southwest and west by the Pacific Ocean.

San José, the capital city, is the largest city of the country, and is near the geographical center. It is located at 9° 56' North Latitude and 84° 4' West Longitude, 340 miles west-north-west of Panama City, Panama, and approximately 1575 miles south-south-east of New Orleans, Louisiana.

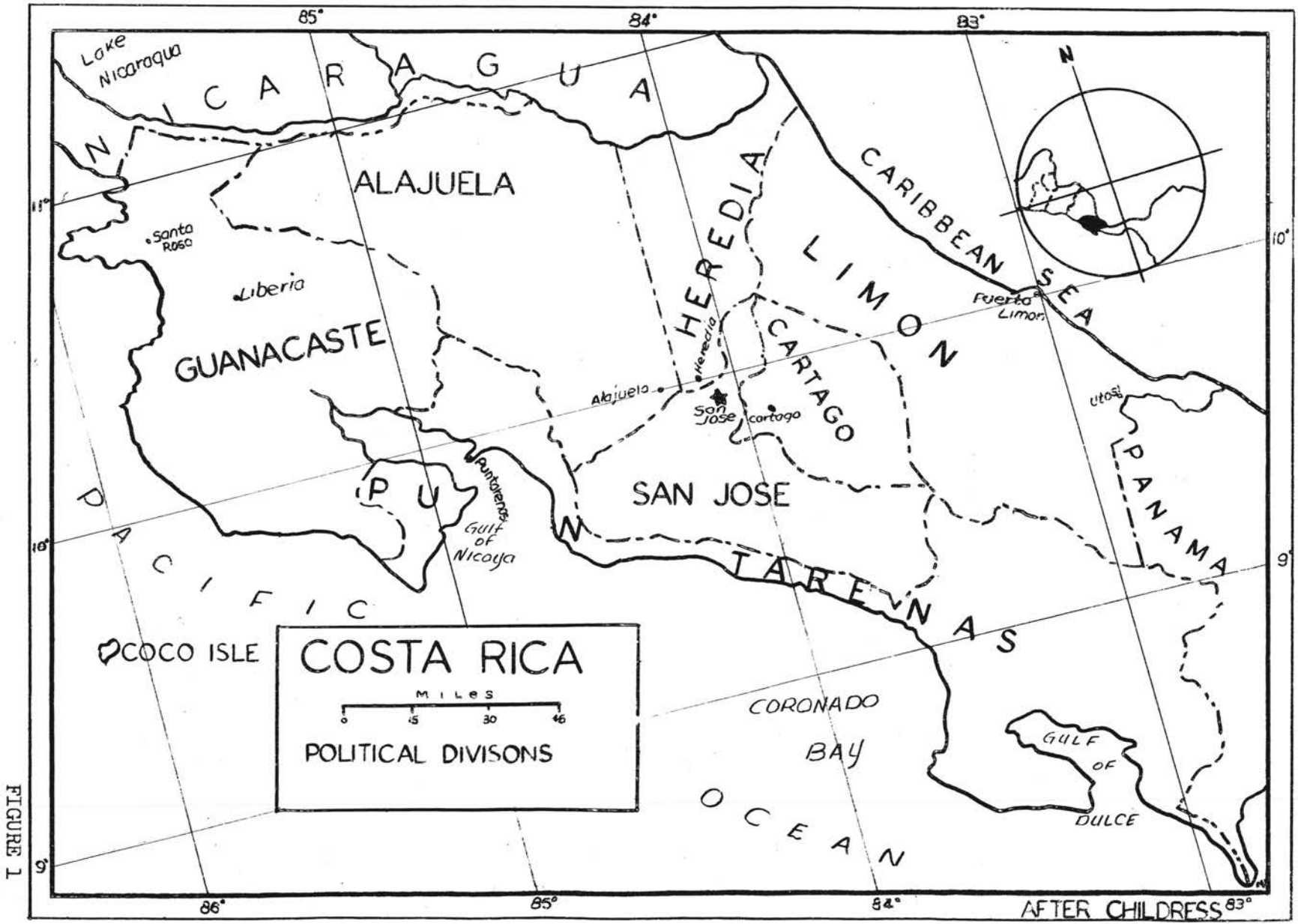


FIGURE 1

The country is an elongated isthmus, located where North America narrows to form the Panamanian isthmus before joining the South American Continent. The country's greatest length is 280 miles from Puerta Congrejo to Punta Burica, and its greatest width is 153 miles from San Juan del Norte (Greytown) to Punta Blanca.

Early Ethnic Development and Colonization

Unlike Mexico and Peru the countries of Central America at the time of the conquest were held by Indian peoples who had no settled agriculture and no well developed urban centers. The several tribes who occupied the lands were as a rule widely dispersed, with little contact between the tribes. Although it is difficult to determine the exact racial stock of the people, they were probably allied to the Chibcha race of the northwest portion of South America. Other groups appear to have been of the Carib stock of Venezuela.

On his fourth and last voyage to the New World, Christopher Columbus discovered Costa Rica when a sudden storm drove his small ship into Cariari Bay, on September 18, 1502. The parties which explored the land which is now Costa Rica found that the Indians inhabiting the land were peaceful, agricultural tribes, raising such crops as corn, beans, yucca, and cotton. They were also skilled in the arts of weaving, stone carving, and fashioning of gold jewelry and ornaments. It was the sight of the gold that led the early explorers to believe that they indeed had discovered a "rich coast," and so named the land, Costa Rica.

The land, however, belied the name which it was given. There was little gold, or any other easily exploitable resources to be found, and attention soon turned to other areas for development. Few, if any, new

immigrants came to Costa Rica after the first impetus, and those who remained were extremely poor, and by necessity were isolated from most of the rest of the world. Costa Rica was described as being the

.... most benighted, woeful province in the whole Spanish empire. Its colonist, ignorant and indigent, clothed with the bark of trees, had been reduced to this condition of misery through being cut off from communication with the outside world for generation after generation and the century-long ravages of pirates from Europe and marauding bands of Indians from the Mosquito coast.¹

On September 15, 1821, the end of colonial rule was proclaimed, along with the independence of the other Central American colonies. Less than four months after proclaiming independence, Costa Rica, along with the other former colonies, was brought into union with the Iturbide empire of Mexico. This dependence lasted until 1824, when the experimental union failed. Genuine independence began at that time.²

Around the nucleus of concentration of population in the Central Plateau, the Costa Ricans have built a state which is notable for its coherence and for the orderliness of its economic, social, and political life. Costa Rica has become one of the most thoroughly democratic states of the Western Hemisphere. Even in the early period of extreme poverty the state acknowledged and declared that it could not postpone and would not shirk its duty to provide for the education of its people. The late nineteenth and the first half of the twentieth century have seen great strides in cultural and material advances for the people of Costa Rica. Costa Rica has the highest literacy rate of any Central American republic.³

¹Ralph Hancock, "Costa Rica," Latin America (New York, 1943), p. 100.

²Chester Lloyd Jones, The Caribbean Since 1900 (New York, 1936), p. 171.

³Hancock, p. 101.

It holds the leading position among Latin American nations in regard to public instruction, and it can no longer be called a poor country. Every Costa Rican who cares to do so can own valuable property of some sort, and the foreign commerce field is held to be far from being contemptible. Costa Rica has a press that is free, literate, outspoken, and widely read.⁴ The communications and transportation systems are being continually improved, contributing greatly to the advancement of the economic and industrial position of the country.

Organization of Study

Costa Rica has long been known as one of the most thoroughly democratic countries in the Western Hemisphere. Although it is the second smallest country in Central America, it has shown outstanding leadership qualities. It is a highly diversified country, with many contradicting influences of both physical and cultural environments.

One of the most important factors governing the growth and development of Costa Rica has been its physical characteristics. It has been an isolated country, cut off from its neighbors, with little immigration, in which the physical development of the country has followed closely the cultural and ethnic evolution of its peoples. The physical characteristics of the highlands have affected the peoples living on the Central Plateau to such an extent that the population has assumed a national character far different from that of the rest of Latin America.

Agriculture throughout the different regions of the country is a direct reflection of the physical setting. Land utilization is efficient,

⁴A. Curtis Wilgus, ed., The Caribbean: Its Political Problems (Gainesville, 1956), p. 102.

with governmental leadership and a high degree of literate communication between the communities accounting for a higher degree of agriculture and industry in the country. Unfortunately, Costa Rica has very few productive industrial minerals or the means for industry. Most of the industrial capacity and manufacturing activity is directed towards agricultural processing, marketing, or distribution.

The development of increased transportation and communication facilities within the country has been responsible for a great deal of Costa Rica's advancement in the past fifty years. Roads, railways, and airline routes connect and unite the entire country with its capital city, centers of population, agricultural districts, and the major ports and harbors, stimulating economic activity and providing the means for transportation of goods for foreign trade.

Thus, the physical characteristics of the country coupled with a singular type of people which it has produced reflect the cultural and physical history of the land. This study presents in sequential order a geographical format proposed by the resulting achievements formulated by the historical and cultural developments by geographic influences.

CHAPTER II

THE PHYSICAL CHARACTERISTICS OF THE COUNTRY

Costa Rica is a distinct tropical country with an extremely rugged highland area which almost completely dominates the entire country. It is very similar in its physical characteristics to the rest of Central America, but subtle differences in topography, climate, and vegetation mark Costa Rica as a completely individualistic entity.

Physiography

The physiography or topography of Costa Rica is unusually complex, a result of extreme tectonic forces. The mountain systems of Costa Rica represent tectonic arcs generally parallel to those of Guatemala and Honduras, but independent of them in structure. In Costa Rica, it was during the late Tertiary Period that the most marked volcanic episode of the Isthmian region took place. This vulcanism was accompanied by intrusions of syenite and granite, and followed by uplift and erosion, which have now exposed the batholiths.¹

Important mountain systems follow the middle of the isthmus from one end of the country to the other, dividing it longitudinally into three physiographic provinces: (1) the Caribbean Plain, (2) the middle Cordillera, and (3) the Pacific Coastal Ranges and Valleys.²

¹Charles Schubert, Historical Geology of the Antillean-Caribbean Region (New York, 1935), p. 40.

²Ibid., p. 592.

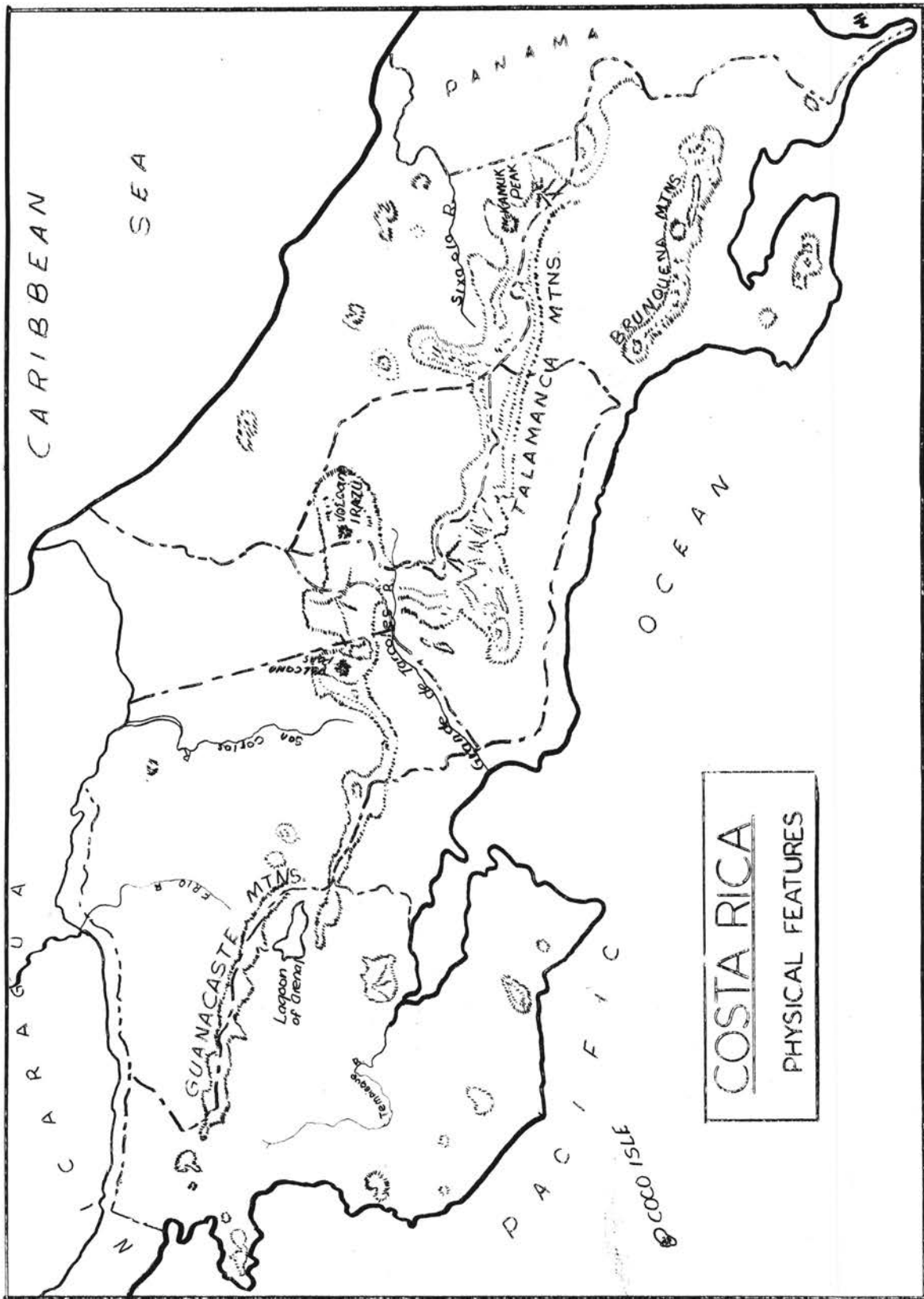


FIGURE 2

The Coastal Plain of the Caribbean includes almost one-third of Costa Rica. It is a lowland plain, seldom reaching an elevation of over three hundred feet, and contains many alluvial fans sloping down to the sea. The Talamanca Plain, which lies south of Limón, extends into the province of Bocas del Toro in northwest Panama. It is a narrow plain, two to five miles in width. The San Juan Plain, north of Limón, gradually widens from seventy to eighty miles near the San Juan River, extending then unbroken into Nicaragua. The coastline is very regular and measures nearly 132 miles in length.

The Pacific Coastal Ranges and Valleys are extremely irregular and bold, with complicated surface features. The region begins at Savegre Río and extends to the Río Chiriqui Viejo, where it parallels the Cordillera de Talamanca on the southwest. The coastline is very irregular, and is 630 miles in length. Two large peninsulas, Guanacaste (or Nicoya) to the north and Osa to the south, each embrace a gulf of considerable size. Within the gulfs there are a number of small islands belonging to the country.

The Cordillera Central is composed of two parts: to the northwest the Cordillera de Guanacaste, the "Volcanic Range," and to the southwest the Cordillera de Talamanca. North of the transverse railway from Puntarenas to Puerto Limón is the highest land of Costa Rica, the Cordillera Central. The Cordillera de Guanacaste strikes southeast at first, but later turns nearly east-west. On it stand the highest volcanoes: Poas (8675'), Barba (9335'), intermittently active Irazú (11,325'), and smoking Turrialba (11,000'). The Cordillera de Talamanca is the backbone of southern Costa Rica. Highest in Central America, it forms the division between the Caribbean and Pacific slopes of Costa

Rica.³ Its greater peaks are Pico Blanco (9560'), Buena Vista (10,820'), and Chirripo Grande (12,479').

Between the Cordillera de Guanacaste and the Cordillera de Talamanca, lies a relatively low transverse plateau, the Candelaria Highland. It is a high plain, of about five thousand feet in elevation, and is nearly twenty miles wide. It extends into both the Caribbean Coastal Plain and the Pacific Coastal Ranges and Valleys.⁴

The second largest plateau of Costa Rica is known as the General Valley. This is drained by the General River, which joins the Platanares and Coto-Bruis to form the Río Grande de Terraba.⁵

Although none of Costa Rica's eighteen major rivers are navigable by large craft, there is an extensive drainage pattern and a high potential for abundant water power. All of Costa Rica is well drained, except the lowland marshes of the northern San Juan Plain near the Caribbean Sea. The most important of Costa Rica's rivers is the Río San Juan, which drains Lake Nicaragua into the Caribbean and forms part of Costa Rica's boundary with Nicaragua. One of its tributaries, the Río San Carlos, drains the Central Cordillera. Along the Pacific Coast, and near San José, the principal river is the Río Grande de Tarcoles, while the Guanacaste peninsula is drained by the Río Tempisque and the southwestern plains by the Río Grande de Terraba. Most of these rivers are subject to sudden floods.⁶

³A. Curtis Wilgus, ed., The Caribbean: Peoples, Problems, and Prospects (Gainesville, 1952), p. 156.

⁴Schubert, p. 594.

⁵Wilgus, ed., p. 156.

⁶Costa Rica, Pan American Union (Washington, 1955), p. 4.

Climate

Attempts to classify the elements of climate for most tropical regions using the conventional systems of classification are usually meaningless. Many of the climatic controls which are of major importance to areas outside the tropics become unimportant in the classification, if for no other reason than their monotonous regularity. Such climatic controls as the directness of the sun's rays, latitude, and insolation become secondary controls.

Next to the distribution of land and water, elevation above sea level is the most important control causing the differences in climates in similar latitudes.⁷ As a consequence of the steep gradients that characterize mountains, several zones of climate, with corresponding vegetation covers and crops, may be recognized. In the mountainous parts of tropical Latin America, four such zones are commonly defined: the tierra caliente (hot lands), the tierra templada (temperate lands), the tierra fria (cool lands), and the tierra helada (land of frost).⁸

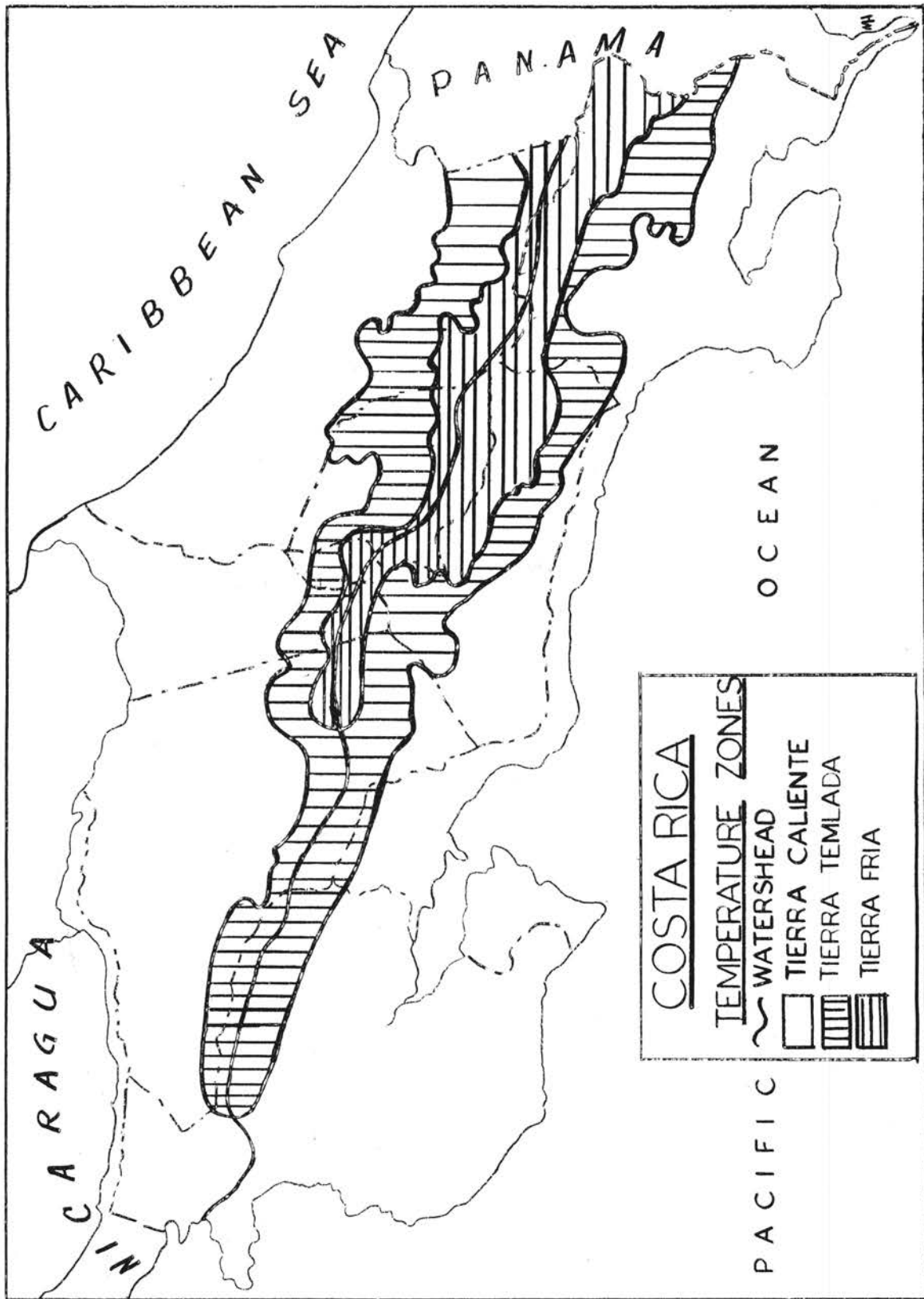
In Costa Rica, there are three more or less distinct climatic regions, each contributing fundamentally to the country's basic agricultural economy. The tierra helada is not found in Costa Rica.

The lower zone, or the tierra caliente, normally extends from sea level to 2,000 to 3,000 feet.⁹ The annual temperature in the hotter lowlands is roughly between seventy-five and eighty-three degrees fahrenheit. With abundant precipitation, the lowlands are characterized

⁷Glenn T. Trewartha, An Introduction to Climate (New York, 1954), p. 367.

⁸Ibid., p. 368.

⁹Costa Rica, Pan American Union (Washington, 1955), p. 3.



AFTER WAIBLE

FIGURE 3

by a luxuriant vegetation cover of trees or of trees and tall grass, with such tropical crops as bananas, rubber, and cacao. The Caribbean lowlands have high uniform temperatures, high relative humidity at all times, and heavy rainfall well distributed throughout most of the year. The highest temperatures at sea level reach ninety-five degrees fahrenheit, and ninety degrees fahrenheit for moderate inland elevations. Extreme minimum temperatures range from sixty to sixty-five degrees fahrenheit. The temperature of the Pacific coastal lowlands is slightly higher, due primarily to a marked dry season, lasting from December through April.

TABLE I
CLIMATOLOGICAL DATA FOR PUERTO LIMÓN¹⁰
Altitude: Sea Level

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
T	78	78	81	81	82	81	79	79	81	81	79	79
R	14	6	7	10	8	6	16	12	6	5	12	16

TABLE II
CLIMATOLOGICAL DATA FOR MIRAVALLES¹¹
Altitude: Sea Level

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
R	0.3	0.0	0.0	0.0	8.1	13.1	7.1	9.7	16.5	17.3	7.5	3.0

¹⁰Elizabeth F. Keithan, "Cacao in Costa Rica," Economic Geography, Volume XVI, 1940 (Published by Clark University, Worcester, Massachusetts), p. 79.

¹¹Henry F. Becker, "Land Utilization in Costa Rica," Geographical Review (1943), p. 82.

TABLE III

CLIMATOLOGICAL DATA FOR HACIENDA MOJICA¹²
 Altitude: 30 feet

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
R	0.9	0.1	0.1	1.1	10.5	10.3	6.5	8.1	15.2	14.7	3.7	0.4

The tierra templada, or the temperate zone, ranges in altitude from 3,200 to 6,500 feet above sea level, and comprises the greater part of the Central Plateau.¹³ The region has a wet and dry season, and the temperatures vary from fifty-nine to seventy-seven degrees fahrenheit. Within this climatic belt a variety of crops are produced and the major agricultural districts are found. The upper table-land of the Central Plateau is actually the heart of the nation, where the Capitol and the majority of the population are located. The climatological data for San José, the capital city, is indicative of the climates found on the Central Plateau.

TABLE IV

CLIMATOLOGICAL DATA FOR SAN JOSE¹⁴
 Altitude: 3,870 feet

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
T	66	66	67	67	68	68	67	67	67	67	65	67
R	0.6	0.2	0.8	1.8	9.0	9.5	8.3	9.5	12.	11.8	5.7	1.6

¹²Ibid., p. 82.

¹³Ibid., pp. 3-4.

¹⁴W. G. Kendrew, The Climates of the Continents (Oxford, 1937), p. 276.

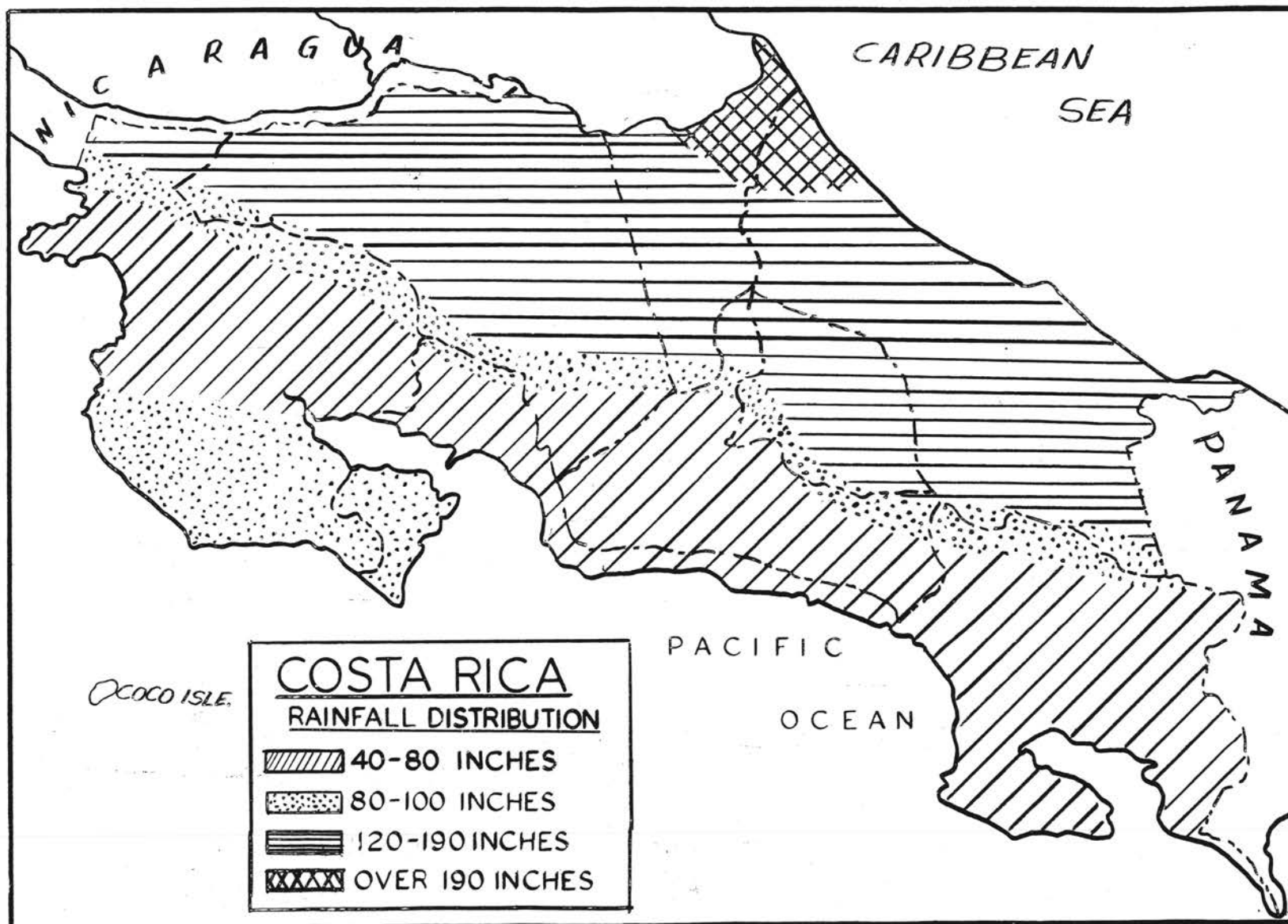


FIGURE 4

The area above 6,500 feet is called the tierra fría, and is the cool zone. Here, where the mountains obtain their greatest height, the temperature ranges from about forty-one to fifty-nine degrees fahrenheit. Although some of the lower limits of the tierra fría are cultivated, this region is best suited for pastoral industries. Much of Costa Rica's livestock is found in this zone.¹⁵

With the exception of the capital city, San José, very little is known about the exact climate of Costa Rica. Only in San José are there competent, trained observers, whose principal records and observations are for the various airlines.¹⁶ Elsewhere, few, if any, observations have been made by trained personnel. The scanty records available, are primarily tables of precipitation, since this is a more important factor concerning agricultural activities in Costa Rica.

Vegetation

Situated where North America narrows to form the Panamanian isthmus before plunging into South America, the country straddles a botanical dividing line where plant life of both continents meet. Botanists find the number and variety of plants almost fantastic: according to Paul C. Standley in The National Geographic Magazine, "No other area of equal size anywhere in America possesses so rich and varied a flora It is improbable that in any part of the earth there can be found an equal area of greater botanical interest."¹⁷

¹⁵Costa Rica, Pan American Union (Washington, 1955), p. 4.

¹⁶Personal observation, 1949-52.

¹⁷Luis Marden, "Land of the Painted Oxcarths," The National Geographic Magazine, The National Geographic Society, Washington, D. C., Vol. XC, No. 4 (October, 1946), p. 409.

As in most other tropical areas, Costa Rica's vegetation has its greatest controlling limitations in its elevation rather than in seasonal or latitudinal influences. More than one-half of Costa Rica lies between 2,900 and 6,825 feet above sea level. The land is almost entirely covered with virgin forests, with vegetation so dense that it is almost impossible to penetrate the interior regions except by way of the rivers. From the coast to a height of 2900 feet are tropical forests and savannas; the virgin forests extend from 2,900 to 6,800 feet; above 6,800 feet are the regions of oaks and chaparrals, extending up to 9,800 feet; and subalpine or subandean flora characterize the regions above 9,800 feet to the top of the mountains.¹⁸

TABLE V
VERTICAL ZONATION OF VEGETATION AND CLIMATE¹⁹

Zone	Altitude in feet	
	Caribbean	Pacific
Tierra Fria	above 5,900	above 4,900
Tierra Templada	2,100-5,900	1,475-4,900
Tierra Caliente	under 2,100	under 1,475

The climatic conditions and the vegetational zones are diversified by not only altitude but also by the contrasting wet Caribbean coast and the drier Pacific coast. The vegetation of the Caribbean lowlands is a

¹⁸Hancock, p. 99.

¹⁹L. Waibel, "White Settlement in Costa Rica," Geographical Review, Vol. 29 (1939), p. 264.

dense rainforest which climb well up the eastern slopes. The vegetation of the Pacific side is a deciduous forest with patches of savanna.²⁰ The altitudinal limits of climate and vegetation differ on the two sides of the highlands, being higher on the wet eastern sides than on the dry western sides.

²⁰Preston E. James, Latin America (New York, 1942), p. 710.

CHAPTER III

THE PEOPLE

The first attempted settlement by the Spanish in Costa Rica was made as early as 1522, on the Nicoya Peninsula, but it was soon abandoned because of the hostility of the Indians. The Spaniards found no such peaceful tribes as were found further north on the shores of Lake Nicaragua.¹ It was only after some difficulty that they were able to successfully occupy the isthmus, and the attention was focused upon the high basin of Costa Rica, the Central Plateau. In 1560, the town of Cartago was founded by Coronado, and the fullest impacts of Spanish civilization really began.

During the first century of the existence of the new Spanish province, Costa Rica offered little to detract from the attention given to other colonies. In this early colonial period, it was extremely poor. The Indians who were native to the Central Plateau proved to be of little value as workers, and were soon almost completely annihilated by new diseases brought in by the white settlers. By 1572, the fifty-five Spanish families which settled around Cartago came to the realization that they would have to work their own fields and produce their own subsistence crops for immediate survival, or they would have to migrate to other colonies.² In other Spanish colonies, early settlers had to make this

¹Preston E. James, Latin America (New York, 1942), pp. 710-11.

²Ibid., p. 711.

same decision, but only in Costa Rica did the people turn to agriculture. These early settlers formed themselves into a small agrarian society, and from this small community began the basis of growth and expansion into other parts of the country. They formed a democracy of small farmers, each working his own land, and the population has remained almost entirely pure Spanish, with a very small amount of Indian mixture.³ The racial characteristics of Costa Rica today still reflect the voluntary segregation of the early settlers.

Expansion and growth of the earliest settlers was by necessity very slow. It was almost entirely confined to the higher elevation of the land, and primarily that of the Central Plateau. Early in the eighteenth century, pioneers moved from Cartago across the Meseta Central into that part of the Central Plateau which is drained towards the Pacific Ocean, and formed the town of San José, which later was to become the capital city. Soon afterwards, Alajuela, in 1790, and Heredia, in 1797, were founded in the vicinity of San José.

Growth in Population

Nearly all of the growth in population and in the occupied areas under settlement was confined to the Central Plateau for nearly two centuries, because of three basic factors. First of all, the climate of the upper elevations was much more conducive for healthful environments than in the lower coastlines. There was an almost complete absence of the various tropical fevers, and the cooler and less rainy climate was much more favorable for agriculture which was similar to that which they

³James, p. 711.

were most familiar. Second, during the entire colonial period, both coasts of Costa Rica were subjected to attacks from the Mosquito Indians of Nicaragua, and from the English and Dutch pirates. The isolation of the Central Plateau, along with the almost impassable rainforest, was the best defense possible against the marauders. These raids, however, were secondary to the third, and more important factor. Perhaps the greatest burden that was imposed upon the colonists was the colonial policy of Spain, which prevented any exchange of goods between the colonies themselves or the colonies and any nation other than Spain.⁴ Under these policies, the settlers were unable to obtain the goods necessary for development. The land, although fertile, contained no obvious resources to exploit for trade, nor were the settlers economically viable enough to be able to produce enough cash crops for export. Attention was necessarily focused upon subsistence agriculture, which was best accomplished on the Central Plateau.⁵

After gaining independence early in the nineteenth century, the impact of the demand for tropical agricultural products began to be realized. There was immediate expansion toward the lower coastlands, and exploitation of the fertile lands began. With the aid of foreign capital, huge plantations were developed, and some 18,000 Negroes were transported to the province of Limón from the British West Indies to work on the banana plantations. Most of these plantations have since been wiped out by the dreaded Panama disease, but most of the Negroes

⁴Chester Lloyd Jones, The Caribbean Since 1900 (New York, 1936), p. 246.

⁵Costa Rica, Pan American Union (Washington, 1955), p. 7.

did not migrate to the Pacific Coast where the banana industry moved, but have remained on the cacao estates and smaller farms near the Caribbean Coast.⁶

TABLE VI
POPULATION INCREASE⁷

Date	Population
1751	2,330
1821	60,000
1892	243,205
1916	441,342
1936	591,862
1938	639,197
1954	898,329 ⁸

The population growth of the country has been rapid since 1900. Since many of the tropical diseases now have little affect upon the population, the relatively high birth rate, 35.9 per 1,000, multiplies the population at about three percent each year.⁹

Racial Characteristics

According to an official estimate of December 31, 1953, the population of Costa Rica was 898,329, giving it a population density of 45.6 persons per square mile. Over 95 percent of the population are of

⁶Personal observation (1949-52).

⁷James, pp. 705-17.

⁸Costa Rica, Pan American Union (Washington, 1955), p. 2.

⁹A. Curtis Wilgus, ed., The Caribbean: Its Economy (Gainesville, 1954), p. 178.

Spanish ancestry, with little admixture of Indian or Negro blood. The Indians, made up primarily of the Chorotega, Boruca, Nahua, Carib, and Chanquinola tribes, account for only 0.3 percent of the total population and now live mostly in the less accessible regions. Nearly all of the entire Negro population, which is 1.9 percent of the total, live on the Caribbean coast.

TABLE VII

RACIAL PROPORTIONS IN THE THREE REGIONS OF COSTA RICA¹⁰
AND FOREIGN POPULATION, 1927¹¹

Race	Highlands	Caribbean	Pacific	Nationality	Population
White	91.0	34.4	50.1	Jamaican	17,245
Mestizo	8.0	3.3	45.9	Nicaraguan	10,658
Indian	0.5	3.3	1.6	European	6,222
Negro	0.2	55.7	0.5	Other	10,105
Others	0.3	3.3	1.9		
				TOTAL	44,230

Although the above charts were compiled in 1938 and 1927 respectively, the change in the racial composition of the population would not be of significance if they had been compiled at the present time. There still persists today the same enigma of voluntary segregation into class, racial, and ethnic groups.¹²

¹⁰James Waibel, "White Settlement in Costa Rica," Geographical Review (Volume 29, 1939), p. 264.

¹¹Chester Lloyd Jones, "Costa Rica and Caribbean Civilization," (Univ. of Wis. Study in the Social Sciences and History, No. 23 [Madison, 1935]), p. 36.

¹²Personal observation (1949-52).

Major Occupations

The majority of the population is directly connected with some phase of agricultural activity, and the entire country is affected to a great deal by the local and world agricultural market conditions. Most of the manufacturing industries are based on the processing of agricultural and related products, while much of the transportation and service industries also support agriculture. Most Costa Ricans are hardworking and diligent, preferring to remain close to agriculture in their chosen vocations, even though it may involve no more than a small backyard garden.¹³

TABLE VIII
MAJOR OCCUPATIONS¹⁴
1950

Occupation	Number employed
Agriculture	144,100
Manufacturing	23,300
Construction	11,600
Commerce	17,300
Services	14,500
Transportation	9,000
Mining	700
Other	9,600
TOTAL	230,100

¹³Personal observation (1949-52).

¹⁴Statistical Yearbook 1956, Eighth Issue: Prepared by the Statistical Office of the United Nations, Department of Economic and Social Affairs (New York, 1956), p. 55.

Many Costa Rican's seek additional employment, other than that of their major occupation, to supplement their sometimes meager incomes. These secondary employments, although temporary, provide great assistance to agriculture during the harvest seasons.

Population Distribution

Costa Rica is divided into seven provinces, or states, with about 45 percent of its population inhabiting the Central Plateau area. Because of the equitable climate in the highland regions, in contrast with the high and humid temperatures of the lower coastal lands, the population still tends to concentrate in the upper regions, and principally around its capital, San José. This area is the center of Costa Rican business, political, and cultural life, with a metropolitan life heightened by the cosmopolitan atmosphere of the cities.

TABLE IX
POPULATION BY PROVINCES¹⁵

Province	Population	Area in Square Miles	Capital	Population
San José	311,510	1,891.89	San José	89,334
Alajuela	166,205	3,667.95	Alajuela	14,281
Cartago	112,912	1,003.86	Cartago	13,329
Guanacaste	102,980	4,015.45	Liberia	3,678
Heredia	57,169	1,119.69	Heredia	12,551
Puntarenas	101,066	4,367.18	Puntarenas	14,014
Limón	46,487	3,629.34	Puerto Limón	12,035

¹⁵Costa Rica, Pan American Union (Washington, 1955), p. 5.

The divisions between provinces are slight, existing only for governmental purposes, and exert little or no control over the individual. There is complete freedom of movement between provinces, with no restrictive barriers being placed upon any type of activity between the several provinces.

CHAPTER IV

AGRICULTURE

The heart of Costa Rica, geographically, economically, and culturally, is the so-called "coffee belt," which occupies some 150 square miles around the capital city, San José. The soils of the "coffee belt" are deep, friable, and rich in organic matter, and are ideal for agriculture, particularly coffee. The "coffee belt" contains forty percent of the population of the country, and from this area comes forty-five percent by value of the total exports.¹ Coffee has been the main export since 1829, and it has molded the country in a special manner: it has had the value of permanency. "Bananas and cacao have come and gone, now producing extra income, sometimes a depression, but the coffee industry has continued to be the backbone of the nation."²

The upper limit for coffee in Costa Rica is about 3200 feet above sea level. Above that, a different type of land and agriculture exists. Most of the land between the well-cultivated valleys and the mountain peaks is occupied by pastures, but in some areas, as near the Irazú Volcano, a highly developed mixed agriculture is to be found, consisting chiefly of potatoes, highland corn, and vegetables.

The deep, volcanic soils, which are mostly black or brown fine

¹Jorge Leon, "Land Utilization in Costa Rica," The Geographical Review, Volume XXXVIII (New York, 1948), pp. 445-446.

²Ibid., p. 445.

sandy loams, produce good crops, but they are easily eroded and usually are kept indefinitely in some type of pasture-crop-fallow-crop rotation. It takes nearly the entire year for the corn crop to mature, but two crops of potatoes are obtained. The fine dairy farms, carrying purebred imported stock, furnish milk and butter to the central cities, with which they are connected by good paved roads.

Most of the locally consumed crops of major importance are not native to Costa Rica but have been introduced since the coming of the Spaniard. The major exceptions are varieties of Indian corn and potatoes. The varieties of corn grown are rather short, with a white strain and a small cob, but with a reportedly good yield. Potatoes of excellent quality are produced in the higher altitudes. Beans of a number of varieties are extensively cultivated, often being sown between corn hills. Rice is also grown, 35,000 acres produced 49,200,000 pounds for local consumption in 1950.³ At one time, wheat was grown in the Central Plateau, but it has now all but disappeared. There are no other small grains being produced in enough quantity to be of importance.⁴

Basic Crops

The basic food stuffs of Costa Rica are rice, corn, and beans. The main area producing these crops lies on the Pacific slope and covers one-fourth of the cultivated land of the country. Regardless

³Yearbook of International Trade Statistics, 1955, Prepared by the Statistical Office of the United Nations, Department of Economic and Social Affairs (New York, 1956), p. 255.

⁴Chester Lloyd Jones, "Costa Rica and Civilization in the Caribbean," University of Wisconsin Studies in the Social Sciences and History, Number 23, University of Wisconsin (Madison, 1935), p. 75.

of the large acreage planted, however, the yield is relatively low because of improper agricultural practices. In bad years large quantities of these staples must be imported.

Although in the past the production of starch goods has not kept up with local demands, increasing quantities of them are now exported. Costa Rica formerly imported corn, rice, beans, and sugar, but is now exporting some of these commodities.⁵ Tobacco of only medium grade is grown, in enough quantities to be sufficient for the lower class trade. Sugar cane is grown in small lots, with little plantation activity being carried on.

Lumber

The lumber industry is also important to the country. Spanish cedar, mahogany, and other fine timber trees grow throughout most of Costa Rica, and some land is kept permanently under forestation. Although the forest region of the country is extensive, its resources have not yet been fully developed, with only the forested areas of the province of Guanacaste being the most exploited. There, the greater part of the lowland is covered with the deciduous wet and dry monsoon type of vegetation. The tropical forest contains valuable woods such as mahogany, lignum vitae, cedar, dyewood, and a variety of other woods useful for structural purposes. Cativo, a soft wood used in the manufacture of plywood, is the principal wood exported. Smaller amounts of cedar, balsa, mahogany, guayacan, fustic, cocobolo, brazilwood, ebony,

⁵A. Curtis Wilgus, ed., The Caribbeans: Contemporary Trends (Gainesville, 1953), p. 178.

rosewood, and valuable dyewoods are also shipped.⁶ As is usual in such tropical forests, pure stands do not exist, and much more of the growth consists of what is at the present time useless vegetation.

Lumber exports have dropped considerably in the past five years, primarily due to the decreased demand for the woods by United States importers.

Livestock

From the Nicaraguan boundary to the Gulf of Nicoya, covering a large part of the province of Guanacaste, is the main cattle region of Costa Rica. It occupies the broad, flat valley of the Tempisque, part of the Cordillera del Guanacaste, and several smaller ranges of hills and uplands. The cattle ranches are usually very large, a combination of pastures, range, and forest, with the cattle being moved according to the season, from the lowlands to the hills during the rainy season, and back to the lowlands in the long dry season. Pastures are intensively utilized, and overgrazing is the rule. Cattle are taken on hoof to central markets, or shipped to Puntarenas, the principal market.⁷

In recent years the dairy cattle industry has increased, and tended to centralize on the Central Plateau area. The dairy cattle are usually superior to the average stock and are among the most carefully selected of the world. The dairy industry has developed along the western slopes of the volcanoes, particularly Irazú, located in the province of Cartago. Various agricultural experimental projects aim at

⁶Costa Rica, Pan American Union (Washington, 1955), p. 16.

⁷Jorge Leon, "Land Utilization in Costa Rica," The Geographical Review, Volume XXXVIII (1948), p. 448.

improving cattle-feed during the dry season, when pastures are unfit for grazing.

The livestock industries, with the exception of cattle raising, are generally undeveloped. The government, however has advocated various measures to increase meat production and to improve the industry. According to the 1952 census, there were: 656,836 cattle; 120,072 swine; and 81,753 horses, mules, and asses.⁸

Agricultural Education and Progress

Costa Rica's variety of climate and its rich productive soils helped agriculturists to choose Turrialba as the site of the Inter-American Institute of Agricultural Sciences. Agricultural scientists from the various American republics gather there to study and teach new techniques in agriculture and animal husbandry.

Costa Rica has made rapid strides in the introduction of new crops for development and improvement. These advances have proved beneficial not only in the improvement of the native diet, but have helped to advance the foreign export trade. Particularly outstanding have been the development of the African oil palm, and the improved varieties of market vegetables and fruits such as avocados, tomatoes, cabbages, cucumbers, onions, turnips, along with pineapples, grapefruit, oranges and limes. Also, important importations have been plants raised for medicinal purposes such as cinchona as a source of quinine, and ipecac, used in the treatment of amoebic dysentery.⁹

⁸ Costa Rica, Pan American Union (Washington, 1955), p. 16.

⁹ Ibid., p. 16.

TABLE X
 MAJOR AGRICULTURAL CROP PRODUCTION¹⁰
 (Production in Metric Tons)

Crop	Production
Coffee	28,337
Bananas	329,468
Cacao	9,736
Rubber	98
Abaca fiber	943
Corn (a)	80,000
Rice	25,000
Milk	156,000
Lumber (b)	146,000
Cattle (c)	762,000

(a) 1953
 (b) Measured in Cubic Meters
 (c) Head Count

Approximately two-thirds of Costa Rica is still under natural vegetation, and there have been no reliable surveys to show how much of this land is actually suitable for any type of agricultural production.¹¹ Certain areas, however, are of little use for modern day agriculture. For example, the palm swamps along the Atlantic seaboard, the swampy borders of parts of the San Juan River and some of its tributaries, and most of the "cloud forest" with its too steep slopes and too shallow soils, are not conducive to modern agricultural methods.

¹⁰Statistical Yearbook, 1956 (New York, 1956), p. 258.

¹¹Henry F. Becker, "Land Utilization in Guanacaste Province of Costa Rica," The Geographical Review, Volume XXXIII (New York, 1943), pp. 76-77.

Plantation Agriculture

Plantation agriculture, which is the basic industry of Costa Rica, is mainly dependent upon three crops: coffee, bananas, and cacao. These three crops constitute ninety percent of all exports from this country.¹² Coffee is the predominating product and yields the highest returns to the planter. Bananas are a strong supplement to coffee as a money crop, while cacao, although an important export item, is grown on a much smaller but rising scale. These crops, along with other basic crops, make up over 97 percent of the total exports of the country.

TABLE XI
PRINCIPAL EXPORTS, 1953¹³
Value in Dollars

Commodity	Value
Abaca	1,894,468
Bananas	32,284,673
Beans	467,689
Cacao	3,741,593
Coffee	33,549,975
Corn	1,037,259
Meat Products	288,370
Rice	285,000
Sugar	640,759
Other Products	2,057,612
TOTAL	76,247,617

Coffee

Costa Rica was the first country in Central America to produce

¹²Costa Rica, Pan American Union (Washington, 1955), p. 14.

¹³Ibid., p. 20.

coffee.¹⁴ It was first introduced in the Province of Cartago in 1796, but it was not until 1825 that the first shipments were exported. Since that time, coffee cultivation has rapidly assumed a position of major importance in the nation's economy.

The Costa Ricans were the first in Central America to realize the advantages that the tierra templada offered for growing coffee. Those parts of the tierra templada which have a dry season and a porous volcanic soil are beneficial for coffee culture. The coffee produced in these areas, and particularly in the upper limits of these regions, is now recognized as possessing a superior flavor to that grown in many areas of Latin America.

Although coffee is grown throughout the country, the principal producing regions are the upland provinces of San José, Cartago, Alajuela, and Heredia. Drying and fermentation of the beans usually takes place on the plantations, but at times it is done at concentration points in the towns. Since the opening of the railroad from the Central Plateau to Puerto Limón in 1891, that port has become the chief outlet from the country.

Most of the cafetales or coffee fincas found on the Central Plateau are small estates, owned by native-born Costa Ricans. Unlike the lands used for bananas and cacao, there are few large coffee plantations. Estimates place the number of coffee trees found on the cafetales and fincas at 38,000,000,¹⁵ with a production in 1953 valued at more than \$33,000,000.¹⁶

¹⁴Preston E. James, Latin America (New York, 1943), p. 712.

¹⁵Ralph Hancock, "Costa Rica," Latin America (1943), p. 101.

¹⁶Costa Rica, Pan American Union (Washington, 1955), p. 20.

Before the Second World War the greatest demand for Costa Rican coffee came from England. Germany was the next largest buyer, and the United States followed in third place. However, since the war, the United States has received over seventy percent of the total exported.¹⁷

The coffee industry is promoted and protected in Costa Rica by a semi-official organization created in 1935, the Oficina del Café (Coffee Bureau). The Bureau engages in research, maintains several experimental farms, and publishes a monthly magazine which contains valuable information and statistics. It also plays an important part in the regulation of the coffee trade, and serves as the government's chief adviser on matters of agricultural credit policy.

Bananas

It is not known when the banana was first introduced to Central America, but Costa Rica was the first country to produce it for export. A North American promoter, Minor C. Keith, while engaged in the construction of the Puerto Limón-San José Railroad, established plantations along the Caribbean coast and began the shipment of bananas to New Orleans. To augment the limited native labor force found in the lowlands districts, large numbers of Negroes were brought from Jamaica.

The value of the exports from bananas increased until in 1909, Costa Rica was the leading producer of bananas; its exports increased steadily until 1913, when the peak year was reached with 11,117, 833 bunches being shipped from Puerto Limón.¹⁸ After the Peak year of 1913, however, the Panama disease and the Sigatoka disease of bananas caused

¹⁷Ibid., p. 15.

¹⁸Chester Lloyd Jones, "Costa Rica and Caribbean Civilization," p. 74.

a gradual decline in production, until in 1933 the production was about 4,341,565 bunches, the same as it had been in 1902.¹⁹ Crop losses caused by these diseases and other blights led to the decision of the United Fruit Company, the largest economic entity of the country,²⁰ to shift its operations from Parrita, Puerto Cortes, and Golfito, where 28,000 acres were under cultivation, to the Pacific lowlands in the southern part of the province of Puntarenas.²¹

Recently, efforts have been made to reclaim the land which had once been ravaged by the Panama disease. By periodically flooding and draining the land, the disease seems to be checked for at least three or four years. After the land has been flooded for a period of time, the land is then drained, and new trees planted.

The dense Negro population which had accumulated near the banana plantations was stranded without means of support when the United Fruit Company shifted its operations from the Caribbean plains to the Pacific lowlands. A few of the unemployed Negroes migrated to Honduras and Guatemala, but the majority chose to remain near Puerto Limón, rather than migrate to new plantation sites.²² Costa Rica was left with a serious population minority problem which was only partly solved with the development of new cacao plantations.

¹⁹Ibid., p. 74.

²⁰Business Week, January 2, 1954, Number 1270 (Albany, New York), p. 56.

²¹Jorge Leon, p. 449.

²²Personal observation (1949-52).

Cacao

Cacao, and its products cocoa and chocolate, had been brought into the country long before the Spaniards arrived. It has been raised in Costa Rica for centuries, ever since the Aztec Nahua tribes brought the seeds with them in their migrations of the 14th century.²³ In the 18th century cacao dominated the Costa Rican economy, and until the importance of coffee as an export crop was realized in about 1825, cacao was the major cash crop.

It was not until after the coming of the dreaded banana diseases that cacao again became a major cash crop of national importance. Its modern importance began in 1914, when the practice of replanting the former banana lands with cacao trees originated.²⁴ Much of the labor was provided by the resident Negroes of Puerto Limón, who had been stranded there after the shift of the banana plantations.²⁵

Except for a small section on the Pacific coast, where irrigation is required throughout the dry season, all of the plantations are located in the Caribbean lowlands near Puerto Limón. The plantations cover some 25,800 acres, and production averages about 7,500 tons a year, which is about one percent of the world's total production.²⁶

Two crops are harvested each year, the principal one between October

²³Costa Rica, Pan American Union (Washington, 1955), p. 15.

²⁴Ibid., p. 15.

²⁵Elizabeth F. Keithan, "Cacao in Costa Rica," Economic Geography, Volume XVI (January, 1940), p. 72.

²⁶B. C. Merdian, "World Cacao Production and Trade," Foreign Agriculture, Volume 5 (1941), p. 39.

and December, and the second between May and June.²⁷ While less important than the banana and coffee crops, cacao exports bring in a substantial amount of revenue and provides year-around employment for many of the Negro population.

Abaca

Abaca, or Manila hemp, has also been an agricultural product which has attempted to breach the gap left by the decline of the banana crops. The fiber, which is of excellent quality and particularly adaptable for marine cordage, was introduced during World War II when Japanese occupation of the Philippine Islands deprived the United States and the free market of its major source.

Since 1944, when the first shipments of fiber were made, abaca has vied with cacao for third place in importance as an export commodity. The future of abaca, however, is not certain. It is not yet known whether the fiber can be produced as economically as in the East Indies.

The major districts of the abaca plantations are located in much the same areas as were some of the original banana plantations. There are some 17,400 acres planted, and the greatest production was in 1955, when 943 metric tons of fiber was produced.²⁸ Most of the plantations are in the Siquirres and Matina districts, and here again, the majority of the labor is performed by Negroes who were brought to Costa Rica to work on the banana plantations.²⁹

²⁷Personal observation (1949-52).

²⁸Statistical Yearbook, 1956, Eighth Issue, Prepared by the Statistical Office of the United Nations, Department of Economic and Social Affairs (New York, 1956), p. 258.

²⁹Jorge Leon, "Land Utilization in Costa Rica," p. 452.

Rubber

In 1936 the Goodyear Rubber Company started work on rubber plantations near Cairo in the Caribbean lowlands. The company now has more than 2000 acres of trees planted on former banana lands. The plantations are planted with disease-resistant, high yielding varieties which will yield, when the trees are in full production, an estimate of nearly 1000 pounds of rubber to the acre, compared to an average of 400 pounds per acre in the Far East.³⁰

³⁰"News by Commodities," Foreign Commerce Weekly, XXXII (August 21, 1948), pp. 34-5.

CHAPTER V

TRANSPORTATION AND COMMUNICATION

The isolation which first provided the security enjoyed by Costa Rica when it was a young struggling nation, has now proved to an enigma which presents the chief obstacle to the economic development of the country. Since the region is predominately agricultural, it needs a well-integrated transportation system to move export crops from farms to local markets, distribute imports throughout the country, and to open up new areas for cultivation of both the export and the basic food crops. Until such time as the systems of transportation are improved and made adequate for all the country, progress will be painfully slow.

Today, there are many areas of Costa Rica which are accessible, through primary transportation, only by air. The Pacific and Caribbean lowlands are especially difficult to transverse, where several means of transportation must be utilized in order to reach the capital city on the Central Plateau. From Puerto Limón, only two methods of modern transportation are available for those who wish to go to the Central Plateau: by railroad or commercial airlines. Puntarenas, the major port city of the Costa Rican Pacific, is served by railroad, commercial airlines, and by an adequate highway. With the exception of these two major port cities, there is no means of direct transportation to the Central Plateau from any other area of the lowland districts.

The focal point for all modes on inland transportation is the capital city, San José. All of the major highways, airlines, and

railroads begin at San José and extend toward the other centers of population throughout the rest of the country.

Railroads

There are about 712 miles of railways in actual operation in Costa Rica, including branches and sidings.¹ All of the railways are narrow gauge, three and one-half feet in width. Sixty-nine miles of railway belongs to the Costa Rican government, one hundred forty-one miles is owned by the Northern Railway Company, and two hundred seventeen miles is the property of the Costa Rica Railway Company.²

The Costa Rica Railway Company was leased to the Northern Railway Company in 1905 for a period of ninety-five years, making Northern's entire system some three hundred fifty-eight miles in length, with the main terminal at San José.³ The remainder of the railways has been constructed by the fruit companies along the lowlands to connect their plantations with the principal ports on both the Atlantic and Pacific coasts, and with Almirante, Panama.⁴

The main line runs from Puerto Limón on the eastern coast to San José, the capital, a distance of one hundred three miles, and continues on via Alajuela, some fourteen miles north of San José. The Pacific Railway extends from San José to Puntarenas on the Pacific coast, a distance of seventy miles, thus affording through connections by rail

¹Costa Rica, Pan American Union (Washington, 1955), p. 28.

²A. Hyatt Verrill, South and Central Trade Conditions of Today (New York, 1914), p. 139.

³Dana G. Munro, The Five Republics of Central America (New York, 1918), p. 160.

⁴Costa Rica, Pan American Union (Washington, 1955), p. 28.

between the Atlantic and Pacific coasts of the republic. It is said to be the sixth transcontinental railway completed in the two Americas.⁵

On the line from Puerto Limón to San José, a daily passenger service is maintained. The trip from the coast to the capital city is usually made in about six hours, unless delays are occasioned by land slides or flash floods, as frequently happens. The passenger service from Puntarenas to San José is bi-weekly, requiring about four hours for the trip.⁶

Ports and Waterways

The two principal ports through which Costa Rica is connected with the rest of the world are Puerto Limón, serving the Caribbean Coast, and Puntarenas, serving the Pacific coast. Through these two ports pass virtually all of the country's exports and imports, and all marine passengers. These ports are the only coastal cities which are directly linked with the Central Plateau and the capital city. Besides its connections with New Orleans and New York, Puerto Limón has direct sailings to Europe and Great Britain, while Puntarnas has connections with San Francisco and Panama.

Puerto Limón, with a population of 12,035, situated on the site of the Indian village of Cariari where Columbus landed, serves as the major port of Costa Rica, and through this port passes the bulk of the nation's exports. Most of the present inhabitants are Negroes who were brought into the country from Jamaica to work on the banana and cacao plantations

⁵Verrill, p. 140.

⁶Personal observation (1950).

of the coastal plain. Today, the bulk of the exports consist of cacao, coffee, abaca, lumber, and bananas.

Puntarenas, with a population of 14,014, is the capital of the province of the same name, and is the principal port of the Pacific Coast. It lies on a narrow spit of land that juts three miles into the Gulf of Nicoya. It is a favorite summer resort city for people from the cities of the Central Plateau, with its beautiful beaches and excellent deep-sea fishing.⁷ Livestock, lumber, coffee, and bananas are exported through the port, with much of Costa Rica's heavy machinery and bulk products pass through the port on the way to the larger cities of the Central Plateau.

Two other ports of the Pacific which are increasing in importance are Golfito and Quepos. Their importance is due primarily to the shifting of the banana plantations to the Pacific lowlands. Both of the ports were built by the United Fruit Company to serve their plantations on the western slope.⁸

Costa Rica has a registered merchant marine, with 70 vessels of 100 tons and over registered as of June 30, 1954, with 200,515 gross tons.⁹

The rivers in Costa Rica descend rapidly from their mountain sources either directly to the sea, or to the low-lying coastal plains which they cross on their way toward the sea. The rivers can be navigated only by small boats, yet in the Guanacaste, the San Carlos, and the San Juan regions they are the chief means of transportation.

⁷Personal observation (1949-52).

⁸Costa Rica, Pan American Union (Washington, 1955), p. 28.

⁹Information Please Almanac 1956 (New York, 1955), p. 561.

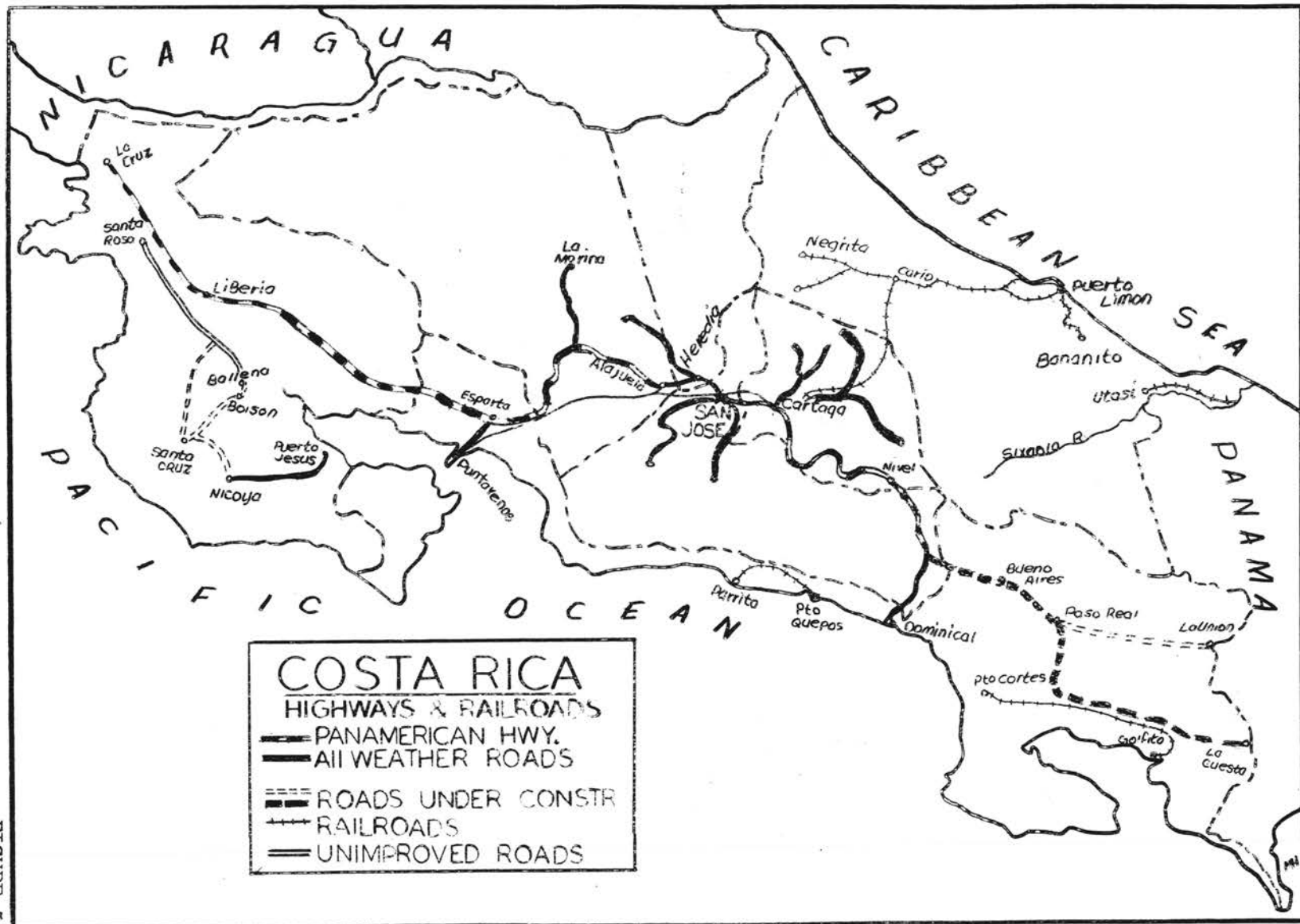


FIGURE 5

The San Juan River, which flows more slowly along the northern boundary, drains Lake Nicaragua to the Atlantic Ocean. Costa Rica and Nicaragua have proposed the building of an inland canal along this river to connect the Atlantic with the Pacific as does the Panama Canal. Although the project has not progressed beyond the planning stage, the geographical location and feasibility of it seems to be ideal.¹⁰

Highways

In spite of the difficulties presented by the mountainous character of the country and by six months of heavy rains each year, the country possesses a fair system of highways.¹¹

Costa Rica's network of roads comprises about 930 miles of all-weather roads and about 3,729 miles of seasonal roads, the majority of which are located on the Central Plateau.¹² Most of the roads on the Plateau are paved and passable throughout most of the year. There are good roads leading from San José to all of the major cities of the Central Plateau, and to the major agricultural districts surrounding them.

American engineers and finances are helping in the survey and construction of the part of the national highway which will eventually be Costa Rica's link in the international Pan American Highway. The Central Highway, which forms part of the system, runs through the Central Plateau and connects most of the principal urban centers. The Central Highway is paved as far north as San Ramón, and south to Empalme.

¹⁰Costa Rica, Pan American Union (Washington, 1955), p. 29.

¹¹A. Curtis Wilgus, ed., The Caribbean: Its Economy (Gainesville, 1954), p. 132.

¹²Costa Rica, Pan American Union (Washington, 1955), p. 29.

All-weather roads extend northward to Liberia, forty miles from the Nicaraguan border, and southward to San Isidro del General, one hundred and thirty-four miles from the Panamanian border.¹³ In all, there are still one hundred seventy-four miles of the Pan American Highway yet to be completed in Costa Rica.

Airlines

Until the arrival of commercial airlines in Costa Rica, many areas were so isolated that several means of transportation had to be employed in order to travel from one part of the country to another. In many instances, one had to travel by horses or mules, by boats, by rail, and sometimes by highways in order to cross the country. Now, most areas are accessible in only a matter of hours.

Transportation by means of commercial and private aircraft is becoming increasingly important. Passenger and air freight service by airlines in most instances is the most efficient, and sometimes the most economic means of transportation.¹⁴

There are five international airways which serve Costa Rica. Pan American World Airways, LACSA (Líneas Aéreas Costarricenses, S. A.), TACA (Transportes Aéreos Centro Americanos) International Airlines, and LN (Líneas Aéreas de Nicaragua, S. A.) connect Costa Rica with the rest of Central and South America as well as Mexico and the United States. The Royal Dutch Airlines (KLM) comes from points in South America via Panama.¹⁵

¹³A. Curtis Wilgus, ed., The Caribbean: Its Economy (Gainesville, 1954), p. 132.

¹⁴Personal experiences (1949-1952).

¹⁵Costa Rica, Pan American Union (Washington, 1955), p. 28.

LACSA is the country's only major domestic airline. It connects all the provincial capitals and other important areas with San José, with daily flights to most of the major cities and bi-weekly flights to lesser important areas. For the areas which do not have accommodations for the larger aircraft (DC-3) of LACSA, there are several small "bush" airlines, consisting of from one to five small single engine aircraft, which cater to the smaller communities. Most of these smaller airlines function as contract or charter operations. These small, privately owned businesses are responsible for a great deal of the improvement in transportation and communications for not only Costa Rica, but all of Central America.¹⁶

Communications

The communications network is perhaps better in Costa Rica than in most Central American republics, with the possible exception of Panama. There are over two hundred fifty post offices in Costa Rica, providing an excellent regional coverage, and with the international air services running north and south from San José daily, provides the necessary linkage with the rest of Central America and the United States.¹⁷

There are about three thousand miles of telegraph lines in operation, with 188 telegraph offices. Telephone lines total approximately 1,400 miles, serving 11,618 telephones.¹⁸

There are nine daily newspapers in the republic, including two

¹⁶Personal observations (1949-52).

¹⁷Ralph Hancock, "Costa Rica," Latin America (New York and Chicago, 1943), p. 103.

¹⁸Ibid.

English-language papers, all published in San José. Thirty commercial radio stations operating in the country without government censorship provide adequate radio coverage.¹⁹

There are twelve government-owned long-wave and short-wave broadcasting stations. All American Cables and Tropical Radio both maintain offices in San José, Puerto Limón, and Puntarenas. There is a wireless service between Puerto Limón and Bocas del Toro in Panama, to Bluefields in Nicaragua, and to Colon in Panama. The government owns and maintains a large international wireless station at San José, and a smaller one at Colorado, at the mouth of the San Juan River near the Nicaraguan border.²⁰

¹⁹The Encyclopedia Americana (New York, Chicago, Washington, 1955), Volume 8, p. 43.

²⁰Hancock, p. 103.

CHAPTER VI

INDUSTRY AND FOREIGN TRADE

Since agriculture is still the principal occupation in Costa Rica, most of the manufacturing industries are based upon the processing and distribution of the agricultural products. In none of the cities is there the commercial movement which results from the inflow of large numbers of people from the surrounding areas on any specific trading days. Nor is there an industrial population which markedly contributes to its activity. Leather goods, including shoes, textiles, beverages, candies, candles, bakery products, furniture, and printing are all represented in local manufacture.¹ Some of the establishments do first class work, but all are on a scale limited by local demand. These are the chief supplements to the activity produced by handling local food-stuffs and the goods imported for the supply of the nation.

Costa Rica has been unable to build a viable industrial economy, and has tended to remain as an agrarian community. Since the country has been unable to produce and manufacture industrial goods of sizable quantity, these goods must be imported. Although some food products are still imported, the bulk of the imported products are goods which cannot be manufactured or produced in Costa Rica due to shortages of raw materials, capital, and labor. Nearly all of the imports are finished products, or semi-finished goods to be used in secondary manufacturing.

¹Chester Lloyd Jones, "Costa Rica and Civilization in the Caribbean," University of Wisconsin Studies in the Social Sciences and History (Madison, 1935), p. 255.

TABLE XII
PRINCIPAL IMPORTS, 1953²
Value in Dollars

Commodity	Value
Cement and Lime	1,665,265
Chemical Products	9,631,240
Fuels and Lubricants	4,472,231
Iron and Steel	3,131,329
Machinery and Vehicles	16,369,496
Medicinal and Pharmaceutical Products	2,219,024
Metal Manufactures	5,042,256
Paper Products	1,981,326
Textile Products	9,099,479
Wheat Flour	2,693,050
Other Products	17,900,948
TOTAL	73,668,948

Factories

In 1943, there were reported to be 6,532 factories, industries, and businesses which served as manufacturing establishments.³ However, in the census of 1950, the smaller marginal businesses were excluded, and 3,247 industries with 184,900 employees were counted.⁴

Nearly all businesses and industries are small. They include 144 cigar and cigarette factories, 308 cheese-making establishments, 151 hydraulic sawmills, 69 candle-making factories, and many coffee-drying, starch, broom, and woodworking factories.⁵

²Costa Rica, Pan American Union (Washington, 1955), p. 20.

³Ralph Hancock, "Costa Rica," Latin America (New York, 1943), p. 103.

⁴Statistical Yearbook, 1956, Eighth Issue, Prepared by the Statistical Office of the United Nations, Department of Economic and Social Affairs (New York, 1956), p. 181.

⁵Hancock, p. 103.

Distilleries of alcoholic and non-alcoholic beverages are the most important single industry of the country, with the Government having a monopoly on the manufacture of all alcoholic drinks except beer.⁶

Clothing and textiles are manufactured locally from domestic cotton as well as from imported raw materials. Recently, this industry has been expanded to include rayon weaving mills, which produce fabrics of first line quality. Most of the textile and clothing industry is concentrated in San José.⁷

Sawmills have been established to process the forest products for export or for local craftsmen. Cabinet makers in Alajuela, Cartago, Heredia, and San José use cedar, mahogany, and rosewood to supply furniture for the domestic market. The Swiss emigrants of the upper highlands are especially renowned for their skills in precision cabinet-making and in the construction of fine furniture. Many of the small farmers of the Central Plateau practice some type of woodworking handicraft, demonstrating their specialties at a national exposition held each year in Alajuela.⁸

Cattle-raising has led to the development of related industries. Tanning, shoemaking, and saddlery are important occupations in the Guanacaste Province. Elsewhere, these industries are relatively small, and they are designed primarily to supply domestic needs.

⁶Costa Rica, Pan American Union (Washington, 1955), p. 18.

⁷Personal observation (1951).

⁸Personal observation (1951).

The Tourist Industry

The tourist industry in Costa Rica is relatively small, although many unofficial members pass through the country. During the past five years, the number of official tourists in the country has averaged about 11,000 per year.⁹ Besides the equitable climate, the tourist trade is attracted by artistic products such as ceramics and small articles fashioned of mother-of-pearl, tortoise shell, and decorative woods.¹⁰ Near Quepos, on the Pacific coast, game fish are abundant. Found there are red snapper, roosterfish, Spanish mackerel, tuna, jack crevally, dolphin, shark, and giant sailfish. These fish are also important to the country commercially, with tuna being the most important. The tuna, which school in countless numbers off Puntarenas, bring commercial fishermen from as far away as California.¹¹

Water Power

Water power is abundant in Costa Rica, although it has not yet been put to full use, with only 31,000 horsepower developed from a 1,400,000 horsepower potential supply. Recent additions to the hydro-electric power system have been the 2,500-kilowatt plant which supplies additional power to Heredia, and the 30,000-kilowatt plant, utilizing the waters of the Tizate, Alajuela, and Grande de Tarcoles Rivers, which will provide

⁹Statistical Yearbook 1956, p. 516.

¹⁰Costa Rica, Pan American Union (Washington, 1955), p. 18.

¹¹Luis Marden, "Land of the Painted Ox carts," The National Geographic Magazine, Vol. XC, No. 4 (October, 1946), p. 447.

additional rural electrification.¹² The entire hydro-electric power systems now supply 271,000,000-kilowatts, per year.¹³

There is little heavy industry in Costa Rica, due to insufficient quantities of raw materials, limited capital, the necessity of importing machinery, and limited transportation facilities, all essential to industrialization. There has also been a tendency for Costa Rican's to ignore their own small, struggling industries, showing preferences for the known qualities of imported goods even though they may actually be inferior products at higher costs.¹⁴

Mining

Mining is less important than both agriculture and industry, even though exploitation of gold, silver, and manganese deposits in Guanacaste have yielded a steady output. Mines near the Gulf of Nicoya made shipments during the peak year 1937 of both gold and silver valued at \$465,000; although the amounts of gold and silver are rapidly decreasing, exports still average over \$50,000 each year. Total production of one of the three gold districts has reached a value of \$10,000,000, all of which was obtained by the use of crude methods.¹⁵

Copper, iron, lead, mercury, nickel, and zinc have all been discovered in Costa Rica, but as yet have not been mined extensively. Sulphur ore has also been discovered, and the existence of petroleum deposits has been established in the Talamanca and Tilaran Mountains, and possibly in Guanacaste Province.

¹²Information Please Almanac 1956 (New York, 1955), p. 54.

¹³Statistical Yearbook 1956, p. 421.

¹⁴Personal observation (1952).

¹⁵Hancock, p. 102.

The country's mining laws are liberal and will probably encourage investment and bring about a greatly increased production. No distinction is made between foreign and native acquisition of mining rights and concessions, nor is there interference with administration of distribution of output.

Ownership of the subsoil is vested in the state, with the individual mining rights being obtained either by purchase or by filing claim to the mining area. Courts, however, do not give title to the claims until after the survey has been completed and actual work begins. The title lapses and is returned to the state if the claim is unworked for two years. However, when a mine is once delivered to a claimant, he may sell, mortgage, or dispose of it at will.¹⁶

Foreign Trade

Like other Latin American countries, Costa Rica is highly dependent upon foreign trade for her economic welfare. The bulk of the country's agricultural production is exported, and her imports consist primarily of manufactured goods. The profits, and also the losses, of foreign commerce are spread more widely among the people of Costa Rica than in most other countries in Latin America, due primarily to the system of small farm groups which are evenly distributed throughout the country.

The amount of foreign trade in Costa Rica has steadily increased since World War II. Until 1955, there has been a favorable balance of trade, with exports exceeding imports.

¹⁶Hancock, p. 102.

TABLE XIII
 GENERAL TRADE OF COSTA RICA¹⁷
 Value in US Dollars

Year	Merchandise		Gold	
	Export	Import	Export	Import
1948	45,960,000	42,344,000	(a)	(a)
1949	48,191,000	43,352,000	(a)	(a)
1950	55,585,000	46,033,000	(a)	(a)
1951	63,410,000	55,730,000	---	20,000
1952	73,350,000	67,860,000	20,000	10,000
1953	80,150,000	73,660,000	---	10,000
1954	84,700,000	80,020,000	---	20,000
1955	78,860,000	87,470,000	70,000	40,000

(a) Import and export statistics not available for 1948-50.

Costa Rica's foreign trade is conducted with the United States, Europe, and several of the Latin American countries. Although Costa Rica conducts more trade with the United States than with the rest of the world, the European market has become increasingly important since 1949. In 1953, imports from Germany, England, Belgium, Holland, Italy, and Sweden amounted to 24 percent of the value of imports while the principal Latin American countries accounted for only four percent.¹⁸

¹⁷Yearbook of International Trade Statistics, 1955, p. 255.

¹⁸Costa Rica, Pan American Union (Washington, 1955), p. 19.

TABLE XIV
 FOREIGN TRADE IN 1955¹⁹
 Value in US Dollars

Country	Imports from	Exports to
United States	52,130,000	42,320,000
Germany	7,870,000	21,220,000
United Kingdom	5,870,000	650,000
Others	21,500,000	14,670,000
TOTAL	87,470,000	78,860,000

Besides being Costa Rica's best customer, the United States is also her biggest investor. In 1943, the total value of American-owned assets in Costa Rica was estimated to be 36,700,000 dollars.²⁰ Although no complete survey of American-owned assets has been made since that time, the value of investments is now at least twice that amount. Estimates place the value of United Fruit Company investments in Costa Rica at 60,000,000 dollars.²¹

As has been indicated in previous sections, coffee and bananas are Costa Rica's chief exports. In 1953, bananas amounted to 42 percent of the total value of exports, while coffee amounted to 44 percent.²² Edible food products alone make up 94 percent of the total exports.

¹⁹Yearbook of International Trade Statistics, 1955, p. 259.

²⁰The Caribbean: Peoples, Problems, and Prospects, p. 112.

²¹Business Week, January 2, 1954, Number 1270 (Albany, New York), p. 56.

²²Costa Rica, Pan American Union (Washington, 1955), p. 19.

TABLE XV
 EXPORTS BY COMMODITIES²³
 Value in US Dollars

Commodity	1953	1954	1955
Food	72,542,000	77,822,000	76,858,000
Crude materials inedible, except fats	2,416,000	1,621,000	1,234,000
Beverages and Tobacco	—	54,000	1,000
Animal and Vegetable fats	109,000	17,000	14,000
Chemicals	16,000	18,000	118,000
Manufactured goods	46,000	75,000	110,000
Miscellaneous manufactured goods	161,000	275,000	106,000
Miscellaneous goods	950,000	1,176,000	418,000
TOTAL	76,246,000	81,058,000	78,859,000

Most of Costa Rica's imports are manufactured goods, although some semi-manufactured goods and raw materials are also imported. Since the agrarian community possesses no heavy industry, and insufficient factories capable of manufacturing consumer goods, most of the imports consist of manufactured goods, machinery, transportation equipment, chemicals, and textiles. Machinery, manufactured goods, chemicals (including fertilizers), and automobiles make up 78 percent of the total imports.

²³Yearbook of International Trade Statistics, 1955, Prepared by the Statistical Office of the United Nations, Department of Economic and Social Affairs (New York, 1956), p. 255.

TABLE XVI
 IMPORTS BY COMMODITIES²⁴
 Value in US Dollars

Commodity	1953	1954	1955
Food	9,071,000	10,044,000	11,807,000
Crude materials inedible, except fats	567,000	685,000	704,000
Beverages and Tobacco	694,000	731,000	692,000
Mineral Fuels	4,472,000	5,238,000	5,269,000
Chemicals	9,631,000	11,542,000	13,233,000
Animal and Vegetable fats	419,000	556,000	535,000
Manufactured Goods	24,779,000	24,476,000	24,777,000
Machinery and Transportation Equipment	16,369,000	18,670,000	23,192,000
Miscellaneous Manufactured Goods	6,943,000	7,929,000	7,122,000
Miscellaneous	711,000	565,000	138,000
TOTAL	73,657,000	80,636,000	87,468,000

Since the domestic economy is dependent directly upon foreign trade, the economic welfare of the country is a direct reflection of world trade conditions. The currency of Costa Rica is issued and controlled by the Banco Central (Central Bank), which also regulates credit and foreign exchange.²⁵ The colón, which is the unit of currency, may be exchanged for United States dollars at the official rate of 5.67 colones

²⁴Yearbook of International Trade Statistics, 1955, Prepared by the Statistical Office of the United Nations, Department of Economic and Social Affairs (New York, 1956), p. 255.

²⁵Costa Rica, Pan American Union (Washington, 1955), p. 20.

to the dollar.²⁶ However, there is also a semi-controlled free rate of exchange, which at times has exchanged for as much as 9.70 colones to the dollar, depending upon the current shortage of dollars, and the ratio of imports to exports.²⁷

As a result of favorable trade trends, gold and foreign exchange reserves of the Central Bank have increased in the period between 1950 and 1954. In December, 1953, there was a total of 3,613,000 dollars in gold reserve.²⁸ Most of the exchange reserves and government surplus revenues are used either directly or indirectly to stimulate further trade and commerce through financing of national projects such as highways, power plants, and airports.²⁹

²⁶Costa Rica, Pan American Union (Washington, 1955), p. 20.

²⁷Personal observation (1951).

²⁸Costa Rica, Pan American Union (Washington, 1955), p. 20.

²⁹*Ibid.*, p. 20.

CHAPTER VII

SUMMARY AND CONCLUSION

Although the Spaniards named the land Costa Rica, or "Rich Coast," in anticipation of the gold which they hoped to find there, the earliest stages of the country's growth were anything but rich. Costa Rica suffered many hardships under the Spanish rule, and even after gaining independence in the early nineteenth century progress was still extremely slow.

The difficulties which were met and defeated under early Spanish rule set a pattern from which Costa Rica has developed into a strong, viable nation. The physical hardships which contributed to the inaccessibility of Costa Rica have tended to develop a strong and energetic people, while the physical conditions of the land itself have given the people an easy way of life.

Costa Rica is the most southerly of the five Central American republics and is divided into three geographic regions: the low coastlands, the fertile Central Plateau, and the upper mountain regions. The core of settlement in Costa Rica is located in the highlands, on the Central Plateau. Here the densest rural populations of any part of mainland Latin America are found. Most of the land is owned and operated by a group of small farmers rather than by the large landowners and tenants or peons traditionally found in other areas in Latin America. In this area more than 90 percent of the inhabitants are of unmixed white

ancestry. Around this nucleus of settlement, the people have built a state which is reknowned for its coherence and for the orderliness of its social, economic, and political life, making it one of the most thoroughly democratic states in the world.

But all of Costa Rica is not a system of small, highland farms. It also has its large lowland plantations which produce almost one-half of all the exports of the country. The arrival and promotion of the large banana plantations marked the beginning of the greatest period of growth and diversity of Costa Rica. No longer was Costa Rica bound by the traditional types of agriculture; the development of the lowland commercial plantations strengthened the economy, demanded a better system of communications, and united the various political and economic divisions of the country into one centralized national unit.

Agriculture, which is the basic industry of the country, is dependent upon the three basic crops which constitute almost 90 percent of the total exports: coffee, bananas, and cacao. Bananas and cacao are both major plantation crops, grown in the lowlands, and are subject to variations in their value to the country due to the uncertainty of world market conditions. But coffee is the mainstay of the domestic economy, accounting for about one-third of the total income derived from exports. Coffee gives employment at least part of the year to one in every six persons in the country.

Costa Rica has organized a rural colonization program to stop farm to city migration, and to increase farm production. Semi-abandoned farm land is being opened to settlement, and equipped with housing and machinery.

Because Costa Rica is an agricultural nation, there is very little industry except that necessary to meet the needs of her own people.

Manufacturing now contributes about one-half as much as does agriculture to the national income. Food products lead in manufacturing, with printing and publishing second, an evidence of the nation's high literacy. Clothing and related products are third most important, with lumber fourth.

The country has never been of any great importance for the production of minerals, although deposits of several minerals have been found. Gold, silver, manganese, and salt are the only minerals which have been exploited on a commercial scale.

Important not only as an aid to transportation of goods, but for the possibilities it offers for a development of tourist trade, the Inter-American Highway should provide the greatest impetus of development for not only Costa Rica but for all of Central America. Although not yet completed, the highway has aided internal communication immeasurably. Air transport service and railroads provide adequate service at the present time, but after the completion of the Inter American Highway, greater emphasis will be placed on modernizing and strengthening the railway system.

The completion of the Pan American Highway, the Central American division of the Inter-American Highway, will also promote increased trade and social relations between Costa Rica and her neighbors.

Costa Rica has sometimes been called the "land of eternal spring," and her peoples, much of her climate, and the energy of the national character do much to justify this title.

Costa Rica, in spite of internal revolts and uneasiness at times, has achieved a high degree of respectability among the nations of the Western Hemisphere. A little nation, no larger than the state of West

Virginia, Costa Rica shares honors with Uruguay as being the most democratic in faith and practice of all the Latin American states. Over seventy-five percent of the people are literate, a high rate for Latin America, and prideful attention is given to the fact that Costa Rica has more teachers than soldiers.

BIBLIOGRAPHY

Government and Official Publications

"Civil Aviation Program in Latin America," Bulletin of the Pan American Union, XV (September-October, 1946).

Costa Rica. Washington: Pan American Union, 1955.

Merdian, B. C., "World Cacao Production and Trade," Foreign Agriculture, V (1941).

"News by Commodities," Foreign Commerce Weekly, XXXIII (August 21, 1948).

Statistical Yearbook, 1956. Prepared by the Statistical Office of the United Nations, Department of Economic and Social Affairs, New York, 1956.

The Pan American Yearbook. New York: Pan American Association, 1945.

Yearbook of International Trade Statistics, 1955. New York: Prepared by the Statistical Office of the United Nations, Department of Economic and Social Affairs, 1956.

Books

Beals, Carleton. Lands of the Dawning Morrow. Indianapolis: Bobbs-Merrill Company, 1948.

Carlson, Fred A. Geography of Latin America. New York: Prentice-Hall Inc., 1946.

Carpenter, Frank S. Lands of the Caribbean. New York: Doubleday, Page and Company, 1926.

Hancock, Ralph. "Costa Rica." Latin America. New York: The Americana Corporation, 1943.

Hughlett, Lloyd J. Industrialization of Latin America. New York: McGraw-Hill Book Co., Inc., 1946.

Information Please Almanac, 1956. New York: The MacMillan Company, 1955.

Inman, Samuel Guy. Latin America. Chicago: Willett, Clark and Co., 1937.

- James, Preston E. Latin America. New York: Odyssey Press, 1942.
- Jones, Chester Lloyd. Costa Rica and Civilization in the Caribbean. Madison: University of Wisconsin Press, 1935.
- _____. The Caribbean Since 1900. New York: Prentice-Hall, Inc., 1936.
- Kendrew, W. G. The Climates of the Continents. Oxford: Clarendon Press, 1937.
- Loomis, Charles P., et al. Turrialba: Social Systems and the Introduction of Change. Glencoe: The Free Press, 1953.
- Munro, Dana G. The Five Republics of Central America. New York: Oxford University Press, 1918.
- Platt, Robert S. Latin America. New York: McGraw-Hill Book Co., 1942.
- Schubert, Charles. Historical Geology of the Antillean-Caribbean Region. New York: John Wiley and Sons, Inc., 1935.
- Trewartha, Glenn T. An Introduction to Climate. New York: McGraw-Hill Book Company, Inc., 1954.
- Verrill, A. Hyatt. South and Central American Trade Conditions of Today. New York: Oxford University Press, 1918.
- Wilgus, A. Curtis, ed. The Caribbean: Contemporary Trends. Gainesville: University of Florida Press, 1953.
- _____. The Caribbean: Its Economy. Gainesville: University of Florida Press, 1954.
- _____. The Caribbean: Its Political Problems. Gainesville: University of Florida Press, 1956.
- _____. The Caribbean: Peoples, Problems, and Prospects. Gainesville: University of Florida Press, 1952.

Periodicals

- Becker, Henry F. "Land Utilization in Guanacaste Province of Costa Rica," The Geographical Review, XXXIII (January, 1943).
- "Fruit Company for Sale." Business Week, Number 1270 (January 2, 1954).
- Jones, Clarence F., and Paul C. Morrison. "Evolution of the Banana." Economic Geography, XXVIII (January, 1952).
- Keithan, Elizabeth F. "Cacao in Costa Rica." Economic Geography, XVI (January, 1940).

Leon, Jorge. "Land Utilization in Costa Rica." The Geographical Review, XXXVIII (October, 1948).

Marden, Luis. "Land of the Painted Ox carts." The National Geographic Magazine, XC (October, 1946).

VITA

Samuel Morgan Harris

Candidate for the Degree of

Master of Science

Thesis: GEOGRAPHY OF COSTA RICA

Major Field: Geography

Biographical:

Personal data: Born near Shidler, Oklahoma, December 2, 1930,
the son of Samuel M. and Ruby Sisson Harris.

Education: Attended grade school in Shidler, Oklahoma;
graduated from Shidler High School in 1948; received
the Bachelor of Arts degree from Oklahoma Agricultural
and Mechanical College, with a major in Geography, in
May, 1956.

Professional experiences: Entered the United States Air Force in
1948, served as flight engineer in the 5700th Liaison
Squadron attached to the Inter-American Geodetic Survey, with
extensive service in both Central and South America; from
1949 through 1952.