

THE VIABILITY OF LOW COST HOUSING PROGRAMS IN DEVELOPING COUNTRIES

by

RAFAEL OBREGON

B. Arch., Rhode Island School of Design, Providence (1970)

and

JORGE UZCATEGUI

B. Arch., Javeriana University, Bogota (1963)

Submitted in partial fulfillment of the requirements for
the degree of Master of Architecture in Advanced Studies
at the Massachusetts Institute of Technology
June, 1972

Signatures of the Authors ..

Department of Architecture May 1972

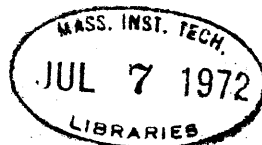
Certified by

.....
Thesis Supervisor

Accepted by

.....
Chairman, Department Committee on Graduate Students

Rotch



THE VIABILITY OF LOW COST HOUSING PROGRAMS IN DEVELOPING COUNTRIES
by Rafael Obregon and Jorge Uzcategui

Submitted to the Department of Architecture in partial fulfillment of
the requirements for the degree of Master of Architecture (A.S.)

ABSTRACT

When urban settlement needs are viewed from the standpoint of urban immigrants, it is evident that though work in this field may be concerned primarily with questions of environmental improvement, it is necessary to interpret them in terms sufficiently wide to cover the range of the population groups involved. Employment, health, education or social welfare requirements, may at certain stages occupy as high a priority as the need for land, public utilities, or improved living accommodation.

This study attempts to describe the nature of the "low income families", their priorities and requirements, in terms of physical and socio-economic needs within the larger context of the "underdevelopment" of Colombia.

Thesis Supervisor: Horacio Caminos
Title: Professor of Architecture

June, 1972.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the many helpful discussions with their Thesis Advisor, Professor Horacio Caminos and his Assistant Reinhard Goethert (Shrimp); and also the Class for providing a pleasant environment in which to "speculate".

We wish also to thank A.I.D for the financial support that made these two years possible; our Advisors in Washington and Dr. Steve Weissman, Dr. Stanley Ott and Dr. Norman Hickey in Bogota.

We are further indebted to Mr. Jorge Cortes Boshell, President of the B.C.H. and to the B.C.H. itself; and also to Mr. Julio Mendoza and Mr. Ramiro Cardona in the National Planning Office, for their support and interest in our studies.

Much appreciation goes to Mr. Tito Bechara and the Oficina de Rehabilitacion de Tugurios in Cartagena for their assistance in our work and the provision of supporting material. In this respect, we would like to thank Dr. Triana for making available his unpublished investigations on the Cienaga neighborhoods. Photographic credits are given to the Oficina de Rehabilitacion de Tugurios, Hernan Diaz and Rafael Obregon.

TABLE OF CONTENTS

Chapter One: COLOMBIA 1
History
Geographic Location
Primary Information
Topography and Boundaries
Regions
Socio-Economic Characteristics

Chapter Two: MIGRATION AND HOUSING 22
Rural Urban Migration
Migration Patterns
Housing Deficit
Institutional Housing
Housing Demand
National Budget Distribution

Chapter Three: CARTAGENA 33
General Information
The Region
Population
The City
History
Growth
Land Subdivision
Land Use
Socio-Economic Characteristics
Income Levels
Density
Utilities and Facilities

Chapter Four:	HOUSING - CARTAGENA	54
	Zoning Plan (1965)	
	Housing Inventory	
	Housing Deficit	
Chapter Five:	BARRIADAS	63
	Characteristics of the Culture of Poverty	
	Traditional Views on Barriadas	
	The Dynamics of New Barriadas	
	Economic Factors	
	Social Organization	
	Community Issues	
	Community Action Programs	
	Components of Squatting	
	Summary	
Chapter Six:	THE CIENAGA SECTOR	76
	Brief Description	
	Location	
	Topography	
	Population	
	Neighborhoods	
	Growth	
	Utilities and Facilities	
	Housing	
	Socio-Economic Characteristics	
Chapter Seven:	CASE STUDIES	101
	Introduction	
	The Illegal System	
	Candelaria and Fredonia	
	General Information	
	Growth	
	Population	
	Socio-Economic Characteristics	
	Site Plans	

- Housing
- Dwelling Plans
- The Legal System
- Chambacu
- General Information
- Relocation Policies
- Costs
- Socio-Economic Characteristics
- Blas de Lezo
- General Information
- Site Plan
- Socio-Economic Characteristics
- Community Action Programs
- Implications from Case Studies

Chapter Eight:	PROTOTYPE DEVELOPMENT 142 Planning Policies and Goals Reasons to have chosen the Cienaga Sector Viability of Relocation and Rehabilitation Programs The Existing Situation Planning Criteria Land Subdivision Typical Segment Circulation Site Development
Bibliography: 165

INTRODUCTION

The Urbanization Process--positive and negative features

The migration of people from rural areas into towns and cities in the developing countries is being accommodated, at the present time, in two main ways: by the rapid rise of living densities in existing low-rental urban housing areas; and by the invasion of unoccupied public or private lands (Barrios de invasion or Barriadas).

In some regions, accommodation in rental slum property and settlement on invaded peripheral land tend to be sequential to one another and to correspond to particular stages of urban adaptation and assimilation that migrating population groups are undergoing. In these cases, the use of low-rental slum property appears to typify an immigrant's early stage of job-seeking and of urban subsistence, while the settlement of squatters on peripheral land typifies a later stage of property seeking and the consolidation of an already acquired urban status.

In this urbanization process, low-income population groups are creating urban environments that correspond very closely and economically to the predominant needs and the growing resources of these groups. All the current evidence indicates that when these population groups obtain minimally secure employment and environmental conditions, they invest substantial resources of money and labor in the gradual and progressive improvement of their homes and surroundings; an important contribution to the capital assets of a developing country, and one that is largely being made outside the preventing, controlling, and supporting mechanisms of the governments involved.

On the other hand, the lack of effective government support or control for the rapid growth of towns and cities means that many immigrant groups are undergoing conditions of severe urban hardship that might otherwise be mitigated or avoided, and in many cases are enduring very poor environmental conditions for longer periods than necessary if appropriate government assistance were available to them.

Factors restricting the assistance of the Government

a. Though the scale and speed of urbanization are causing great concern to the governments, this concern is more often directed towards the physical effects of urbanization and to eliminating unsightly slums, squatter settlements, and other aspects of low-income urban environment than towards satisfying the motives and needs of the inhabitants who have brought this low-income environment into being. Because of this, the potential for improvement economically tend to be overlooked or neglected.

b. In most developing countries, urbanization is taking place at a considerably faster rate than is the growth of income available for public sector investments. This means that there is a widening gap between the total urban settlement needs and the total public sector resources from which government action in this field can be financed.

c. The conventional measures being adopted in developing countries for providing low-income public housing, community facilities and urban utilities require a substantial investment of public funds, a large proportion of which cannot be recovered and thus constitutes a direct or indirect subsidy.

d. Public funds for development programs in this field are not only extremely scarce, but are also being misapplied in many developing countries; for example, in the execution of publicly financed housing programs and projects that absorb substantial sums of national or foreign loan capital and at the same time often give rise to considerable problems of rent-recovery and loan-repayment and achieve a minimal improvement in living conditions among the poorest population groups of the countries concerned.

All the mentioned factors address themselves to the need for a different viewpoint on the viability of low income housing programs.

The Thesis illustrates the advantages obtained from optimizing the existing resources of "marginal communities" and offers tentative solutions on ways of assisting them in their physical improvement.

Methodology: In order to provide an adequate perspective on housing issues from the national to the local level, different scales of reference have been included:

1. Urban housing for low income families is seen within the national and urban contexts of Colombia and Cartagena.
2. Squatter settlements in the Cienaga sector provide case studies on the socio-economic characteristics of the families and their most pressing needs.
3. Relocation and rehabilitation alternatives are considered in a prototype development for the Cienaga sector.

After "General Activities of the Centre for Housing, Building and Planning" by the United Nations Economic and Social Council.
Report to SEMUNDIAL, Medellin, Colombia. 1970

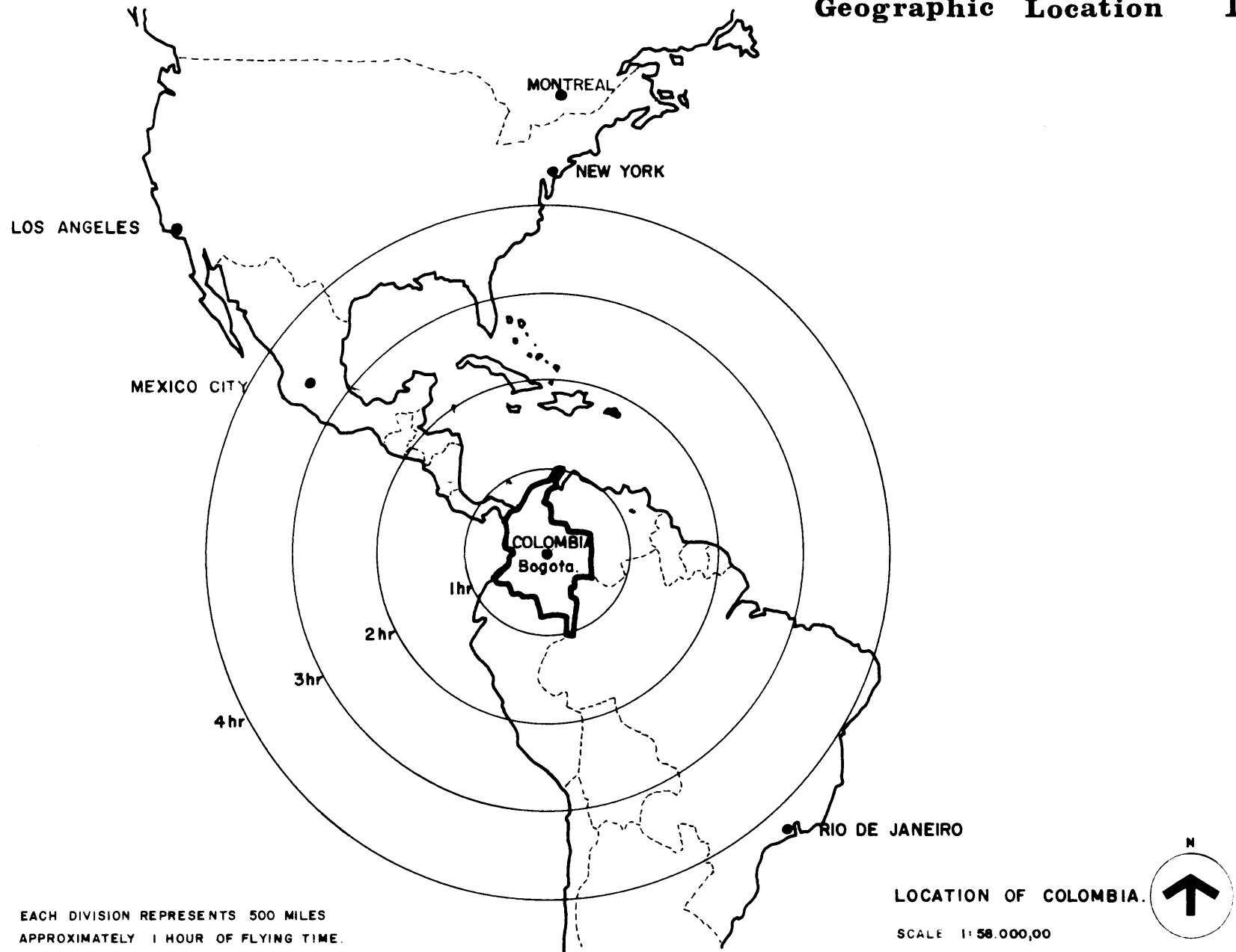
Context: **COLOMBIA**

Contents: HISTORY
GEOGRAPHIC LOCATION
PRIMARY INFORMATION
TOPOGRAPHY and BOUNDARIES
REGIONS
SOCIO-ECONOMIC CHARACTERISTICS

History¹

- 1502 Columbus touched on what is now Colombia in his last voyage.
- 1525 The first city of Santa Marta was founded by Rodrigo de Bastidas.
- 1533 The city of Cartagena was founded by Pedro de Heredia.
- 1538 The Conquistador Jimenez de Quesada invaded the central region and founded the city of Bogota. Until then, Colombia had two major tribes: the Chibchas, located in the area of Bogota; and the Caribbean, located on the Caribbean coast.
- 1717 Nueva Granada (Colombia), which, until then, was ruled from Peru, became a vice-royalty. This area became Spain's chief source of gold.
- 1789 With the French Revolution, the Separatist movements began caused by the arbitrary taxation and exclusion of American-born colonists from politics and commerce.
- 1810 Independence was declared.
- 1819 Independence assured in the Battle of Boyaca.
- 1829 Collapse of the Republic of Gran Colombia.
- 1832 The Republic of Nueva Granada (Colombia) had its first true president, General Santander.
- 1861 The Republic of Nueva Granada became the United States of Colombia.
- 1886 From this period on, the country has been known by the name of Colombia.
- 1903 Colombia lost Panama.
- 1953 Dictatorship of General Rojas Pinilla.
- 1957 The "National Front" was formed, in which both the Liberal and Conservative parties agreed to alternate for the Presidency--an agreement which is supposed to continue until 1974.

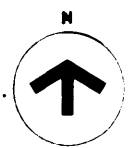
Geographic Location 1



EACH DIVISION REPRESENTS 500 MILES
APPROXIMATELY 1 HOUR OF FLYING TIME.

LOCATION OF COLOMBIA.

SCALE 1:50,000,00



Primary Information ²

Official name: Republica de Colombia
Population: 21,100,000 (1970)
Area: 439,735 square miles
Language: Spanish
Currency: Colombian peso = US\$ 5 cents
Religion: Catholic
Government: Democracy with elections every four years
Major Cities: Bogota (the capital); population: 2,500,000
Medellin; population: 1,400,000
Cali; population: 972,200
Barranquilla; population: 690,200
Cartagena; population: 295,200

Government and Administration:

Colombia is a republic with a president and a system of elected representatives.

Public power is divided into three categories: Legislative; Executive; and Judicial.

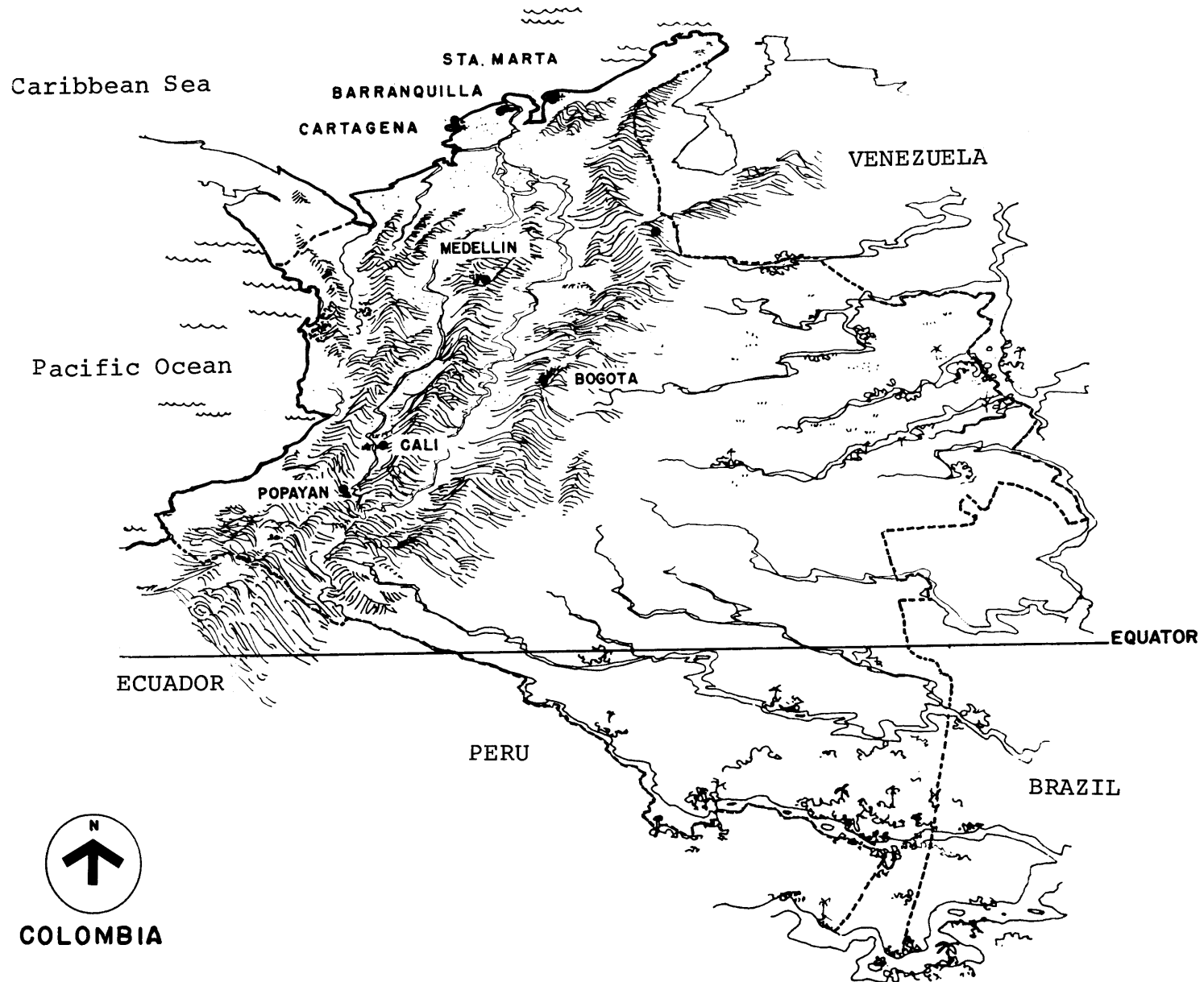
Executive Body: Formed by the President of the Republic, the members of the Ministerial Cabinet, and the heads of the Administrative Departments. The President is elected by direct vote of the people for a four-year term and cannot be reelected.

Judicial Body: Formed by the Supreme Court, the Higher District Tribunals, and the Municipal Courts.

Legislative Body: Congress (bicameral) consisting of a Senate and a Chamber of Representatives. The Senate has 118 members; the Chamber has 210 members. Both houses are elected for a four-year term.

Local Government: 22 Departments; the Special District of Bogota; 4 Intendencies; 4 Commissaries. Each Department is headed by a Governor appointed by the President, who, in turn, appoints the mayors of the cities.

Topography and Boundaries³ 1



Regions ⁴

A CARIBBEAN COASTAL LOWLANDS:

1. Low, rolling hills; marine terraces and river alluvium.
2. Summer months comprise from January to May; winter, from May to December.
Average annual precipitation ranges from 25 inches in Cartagena to 110 inches further inland. Average temperature ranges from 75° to 80° with 3° difference between hot and cold months.
3. Approximately 17 percent of the total population lives in this area.
4. Stock raising has been the traditional economic activity of the coast; plus an oil refinery in Cartagena and industries in Barranquilla. Tourism is also increasing.

B PACIFIC COAST:

1. Narrow, rain-drenched, littoral, lush rain forest
2. Average annual precipitation of over 200 inches; hot and humid climate, average temperatures higher than 90°F.
3. Scantly populated.

C NORTHEASTERN PLAINS:

1. Primarily open savannas exploited by stockmen.
2. The climate is hot, but with clear, dry seasons.
3. Comprises two-thirds of the total area of the country and has less than two percent of the total population.

D SOUTHEASTERN PLAINS:

1. Almost totally covered by jungle.
2. Similar climate to the Pacific region with high index of rainfall.
3. Scantly populated.

E ANDEAN REGION:

1. Entirely mountainous; comprises of the termination of the Andes Mountain Range.
2. Climate and temperature varies according to the altitude; temperature ranges between 80° and 0°F.
3. Contains 78 percent of total population. Of the 14 main cities, 11 are in the mountain basins.
4. Various crops are produced; most industries are located in this region.

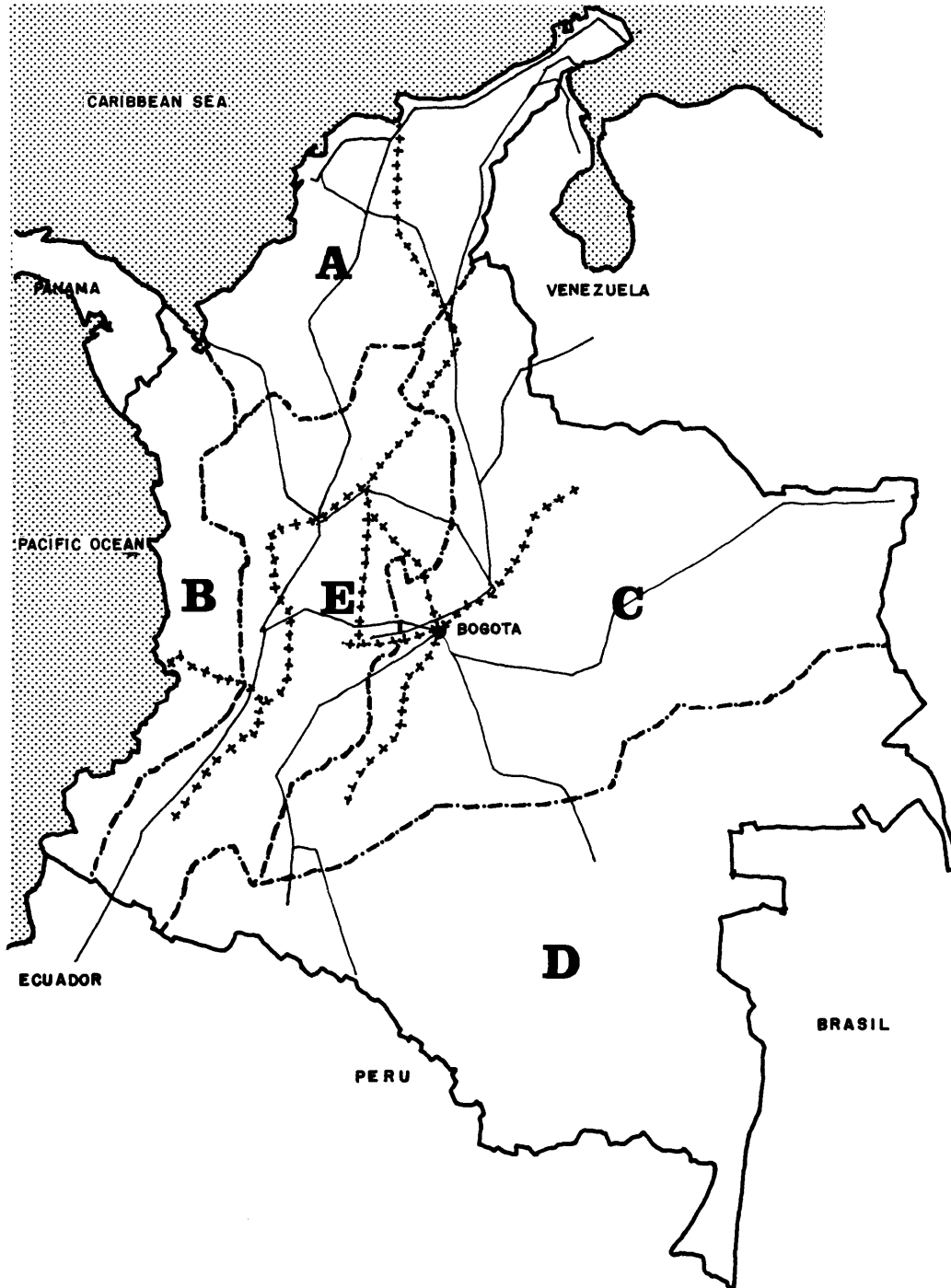
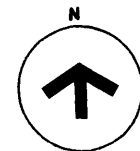
Regions 1

ALTITUDE	% AREA	% POPUL	TEMPER.	PRODUCTS.
10.000 feet	3	0.5	20/25° F.	
6.500 to 10.000	6	22.5	55/65°	CROPS FRUITS
3.000 to 6.500	9.5	37	65/75°	COFFEE
0 to 3.000	82	40	75/95°	RICE- SUGAR TOBACCO COTTON-FRUITS COCONUT

GEOGRAPHIC REGIONS OF COLOMBIA .

- A** - CARIBBEAN COASTAL LOWLANDS.
- B** - PACIFIC COAST.
- C** - NORTH EASTERN PLAINS.
- D** - SOUTH EASTERN PLAINS.
- E** - ANDEAN REGION.

— ROADS
+++++ RAILROADS



Socio-Economic Characteristics

The Nature of the Underdevelopment of Colombia

The nature of the underdevelopment of Colombia will be discussed in a general way using as reference three types of charts:

1. The comparison of Colombia's primary statistics in 1971 in relation to other Latin-American countries, Spain, and the United States of America.
2. The growth of its population, economy, and services in the last 30 years.
3. The distribution of its key factors, i.e., labor, the gross national product, land, and income for the year 1971.

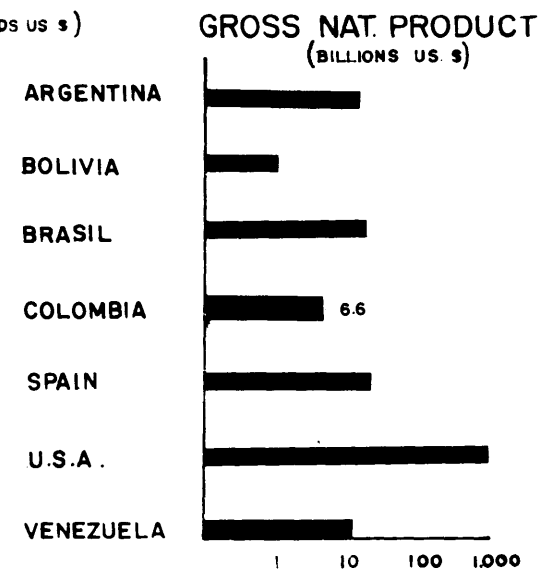
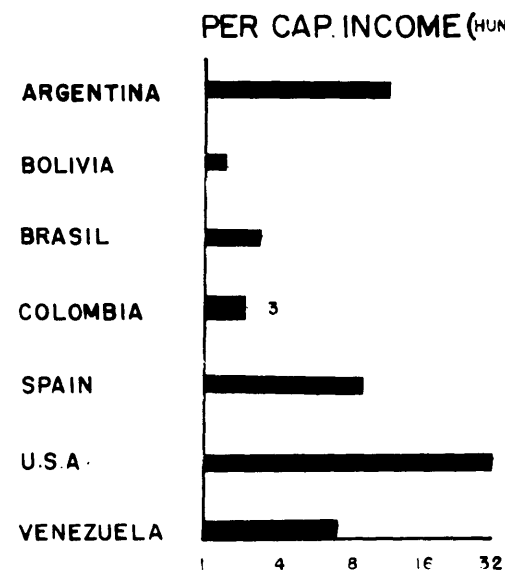
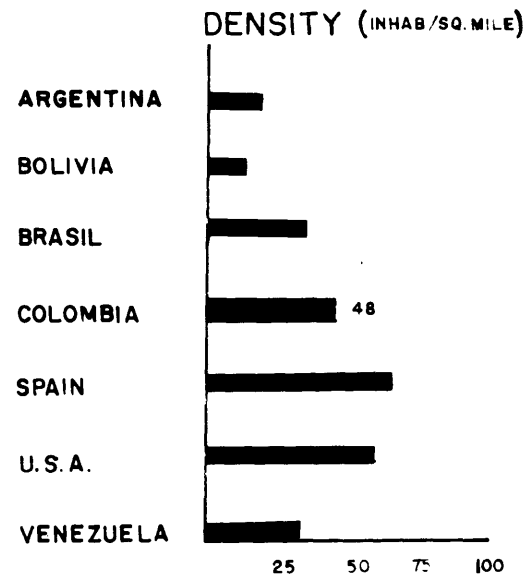
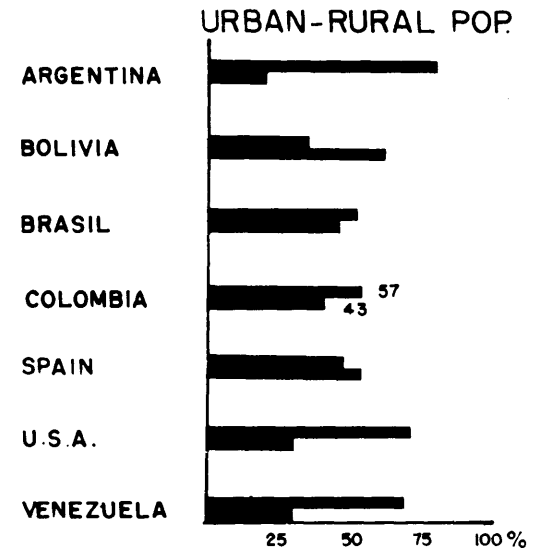
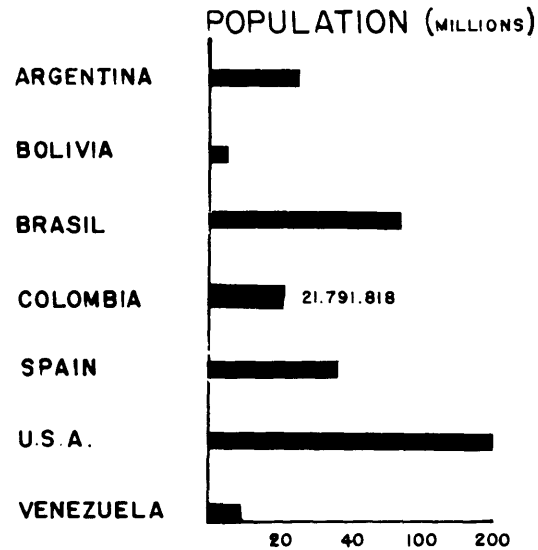
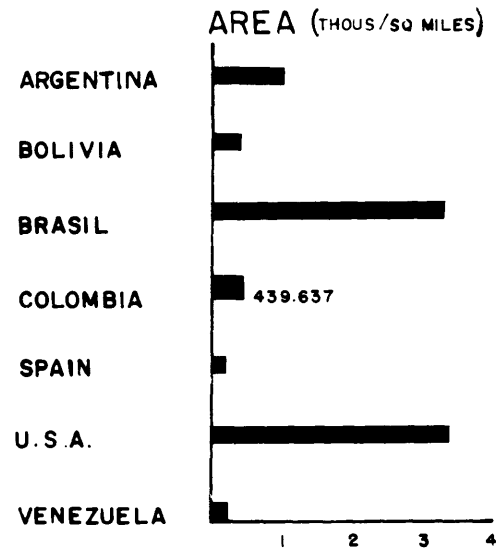
Colombia's situation

To situate Colombia, it is useful to compare its statistics with those of two other countries: Bolivia and Spain.⁵

Although Colombia is twice the size of Spain and has ten million fewer people, with a higher "urbanization ratio" (degree of urbanization), Colombia's Per Capita Income is almost one-third of that of Spain. Its GNP is approximately five times smaller than Spain's and there is 23 percent more illiteracy among its population. The labor force of Colombia is one-half that of Spain.

An opposite perspective is visualized if Colombia is compared with Bolivia. Bolivia and Colombia are approximately the same size. Colombia has a population four times larger; it has a 20 percent higher urbanization ratio; and its PCI is 33.3 percent higher; with its GNP being six times larger. Bolivia has a 43 percent higher illiteracy percentage and a labor force which is 40 percent smaller than that of Colombia.

Socio - Economic ⁶ 1



Two theories on the causes for underdevelopment

The main reasons for underdevelopment may be explained by theories held by opposing ideological groups.

1. The young radicals will explain the "underdeveloped" conditions of the third world by applying to these countries the concepts of dependency. This concept implies a planned action by the developed countries and their representatives (i.e., the "oligarchies" and foreign corporations) to exploit the labor and resources of these countries regardless of the human and moral costs this exploitation implies.

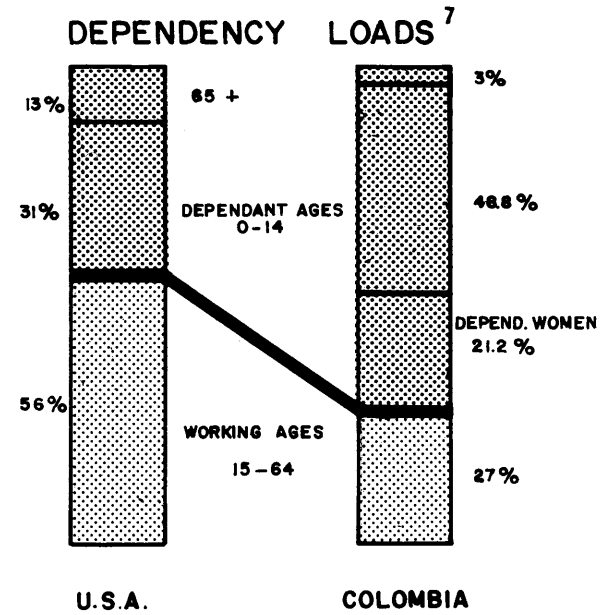
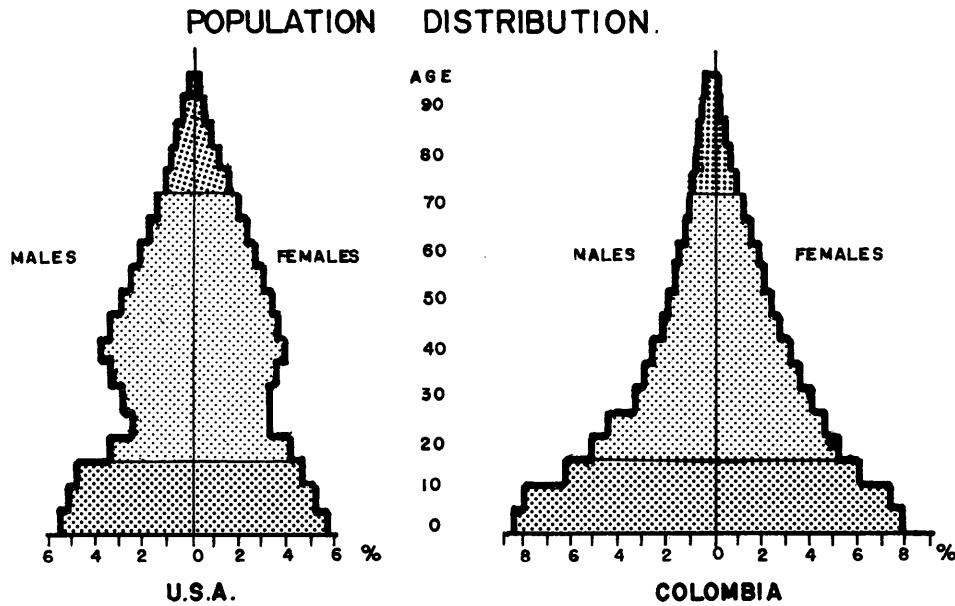
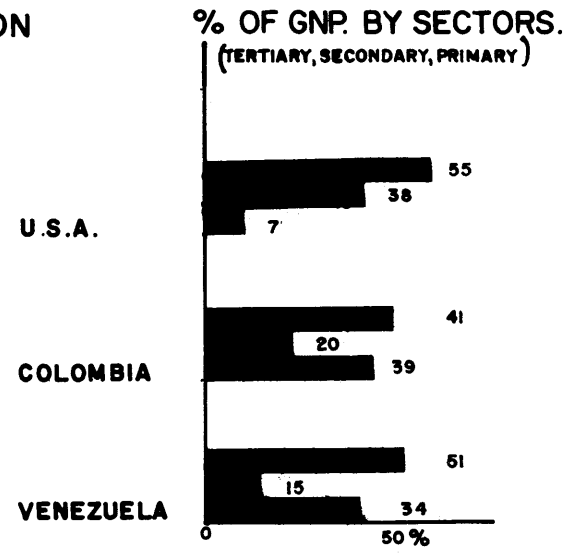
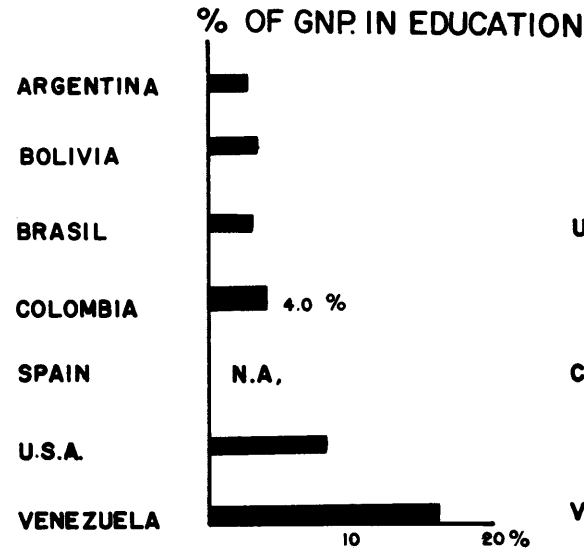
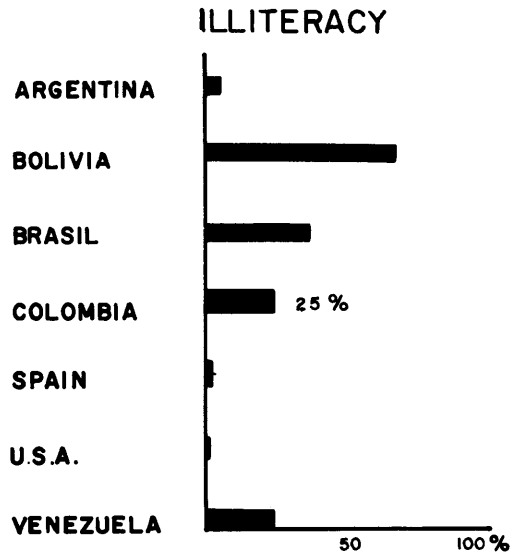
There are innumerable treaties written in the process of this exploitation. Suffice it to say here that, for the people who defend this theory, the population growth is no problem. On the contrary, this is visualized as a solution. According to their logic, it will accelerate a crisis that has to come in order for them and the "people" to be able to implement an alternative way of living.

If the population growth is controlled, then paliatives can be applied and reforms, counter-reforms, etc., will follow one another in a verbal procession leading to more and more sophisticated methods of "repression and exploitation."

Their theories are based on the trade system, the international division of labor, and the economic dependency most developing countries are subjected to. Their alternative at the present time implies a transference of the Chinese-Cuban-Chilean models with a revision of their most obvious differences.

2. The opposite group (which has been defined as defenders of Capitalism), recognize the trade and economic dependency, but visualize flexibility in the process which allows

Socio-Economic 1



for the creation of the necessary conditions for a "better standard of life" within the Capitalist system, (i.e., the case of Brazil).

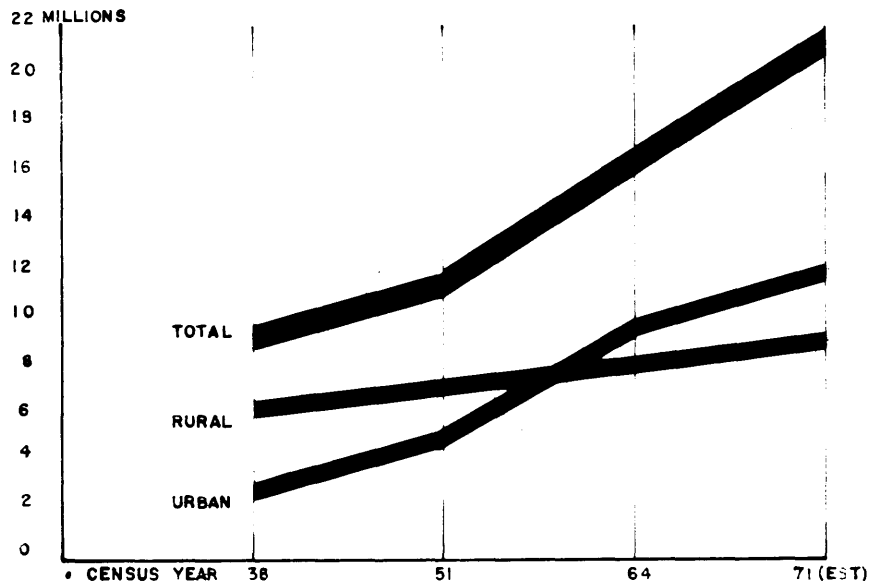
Their view is that if population growth can be planned according to the resources of the country, its laboral capacity, etc., while at the same time "streamlining" the existing social institutions, educational and health facilities, a state of "well-being" will be accomplished faster and less traumatically.

The theory has certain flaws, one of which is the employment problem. Developing countries are supposedly benefitted by their relative late-coming into the industrial process, as they can acquire the latest technology to manufacture their products. This becomes indispensable if they are to compete in a world market and if they accept as unavoidable the industrialization process.

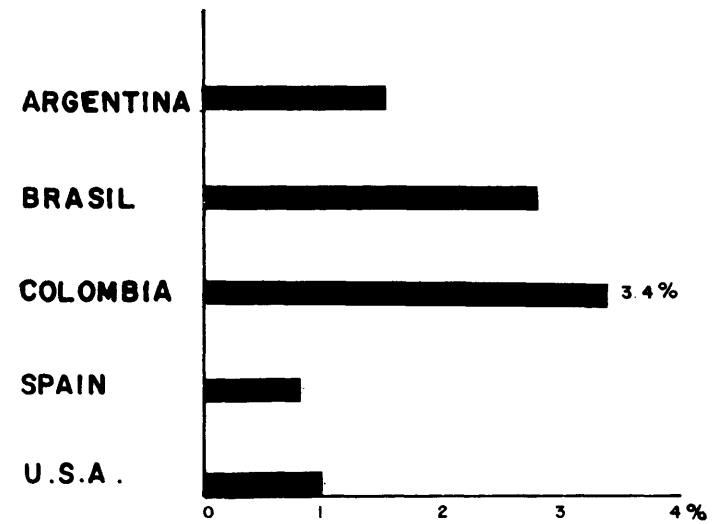
By importing the most recent technologies, the Latin-American countries incur into employment crises, most of these techniques are "capital intensive" rather than "labor intensive" due to the conditions of the developed countries that produced them. The only sector of the economy which can absorb the unskilled labor surplus has been the construction sector. This explains why its rate of growth for the past ten years has been 66.2 percent.⁸

The advocates of the Capitalist system argue that a country with 73 percent of its total population being economically dependent on 27 percent of it and having an annual rate of growth of 3.4 percent, cannot attain "development," as neither its natural or manpower resources can be fully utilized, nor can the institutional systems and social services reach the capacity they require to serve such a large number of dependent population.

GROWTH OF URBAN AND RURAL POPULATION ⁹



RATE OF POPULATION GROWTH. ¹⁰



Growth of the Six Main Cities: from 1964 to 1975 ¹¹

	1964	1970	1975	Percentage of annual rate of growth from 1951 to 1964
Bogota	1,697,311	2,540,100	3,605,400	6.8
Medellin	772,887	1,400,880	1,946,100	6.0
Cali	637,929	972,200	1,392,300	6.3
Barranquilla	498,301	690,200	860,700	4.5
Bucaramanga	229,748	314,100	415,200	4.6
Cartagena	242,085	295,200	380,900	4.9

Other causal factors of underdevelopment

1. The nature of the export sector in some developing countries:¹²

	<u>Major export</u>	<u>as compared in percentage to all other exports</u>
Chile	copper	73 percent
Colombia	coffee	64 percent
Venezuela	oil	92 percent

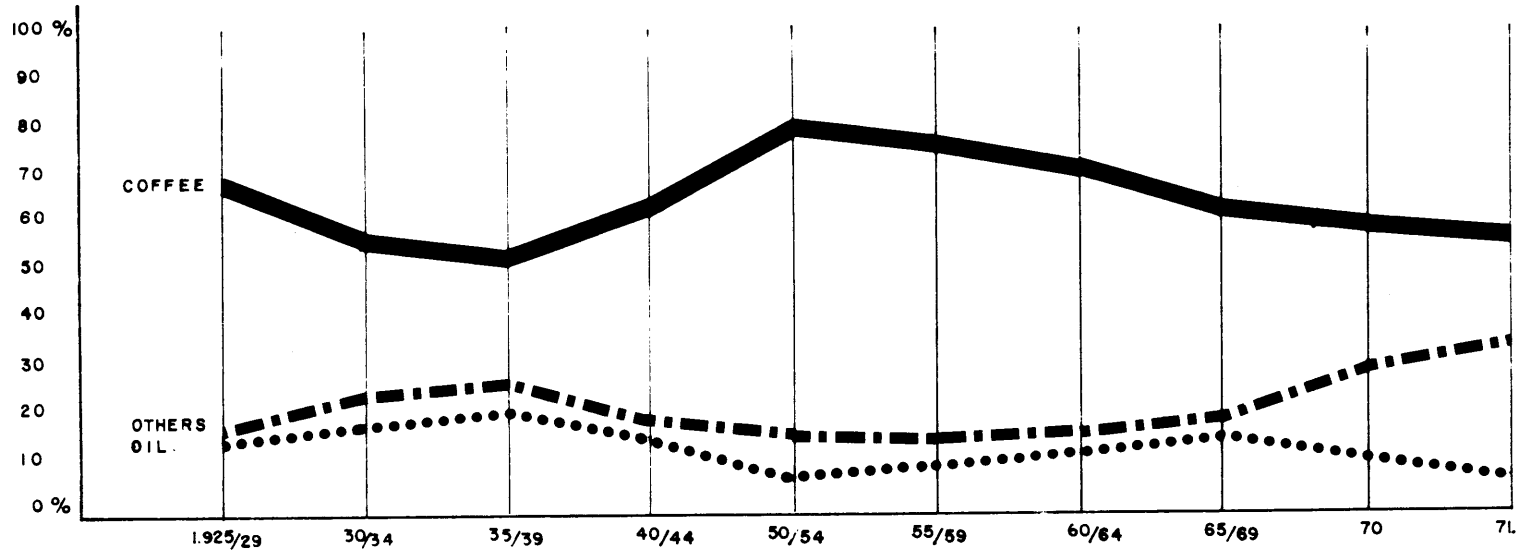
Studying the figures, it is easier to understand the fluctuating nature of these countries' economies, as they are heavily dependent on world markets for primary products and their trading is mainly limited to one country. The Latin-American countries, with the exception of Cuba and now Chile, had the United States as their major market.

In the case of Colombia, two factors can illustrate this problem:

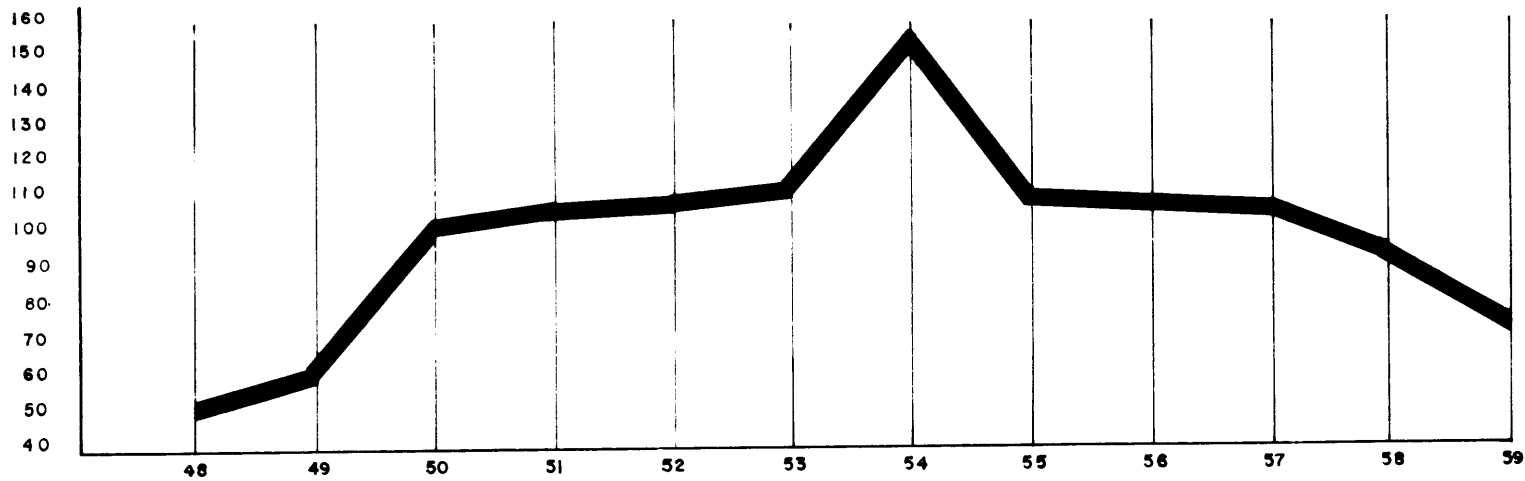
The first is the fact that until very recently, over 50 percent of the total import-export market was done with the U.S.A. Therefore, a change in the consumer taste of that country in relation to coffee represented a gain or loss of millions of dollars. In other words, with the advent of freeze-dried coffee, quality became less important. This coincided with the entry of African coffee in the market lowering even more the price per pound of the product.

Colombia's export oscillated between US\$ 72 cents per pound in 1954, to 63 cents in 1955.¹³ Although the production of 1955 was 100,000 bags higher than that of 1954, still the total export value went down from US\$550 million to \$487,000 in 1955 and \$413 million in 1956. Ever since, coffee prices have been declining, or, at best, have remained stationary, while the cost of importing manufactured equipment has risen enormously. For 1961, the total export value of coffee was US\$307 million. That is \$242 million

COMPOSITION OF EXPORT TRADE 1925-1971¹⁴



PRICE INDEX OF MAIN EXPORT PRODUCT-AVERAGE FLUCTUATION¹⁵



(AVERAGE OF PERIOD = 100)

less than 1954. This helps to explain why the Colombian exports which from 1950 to 1960 were higher than the imports, have been declining relative to the imports with the consequent balance of payment deficit.

2. The problem of the existing land distribution:

According to the agricultural census of 1960, over half of the agricultural land of Colombia is in fallow or natural pastures, while only 15.7 percent is cultivated. In the Andean region, 5.3 percent of the agricultural exploitations account for 68 percent of the land, while farms under 5 Ha., which represent 63.5 percent of the exploitation, account for only 1.7 percent of the land.¹⁶

The use of agricultural land in Colombia, 1960 (percent)¹⁷

	Total Agricultural Land	Cultivated Surface	Fallow and Natural Pastures	Weeds and Mountains
Minifundios	100%	62.5%	32.0%	5.5%
Family Farms	100%	29.1%	49.4%	21.5%
Latifundio	100%	5.7%	65.8%	28.5%

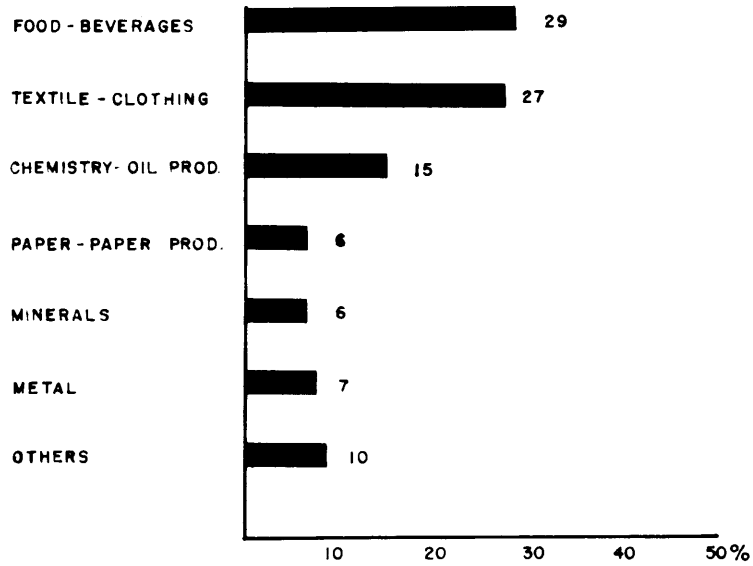
3. Income distribution:¹⁸

Distribution of persons in Colombia by rural-urban residence and family income per year. 1965-1966 (percent)

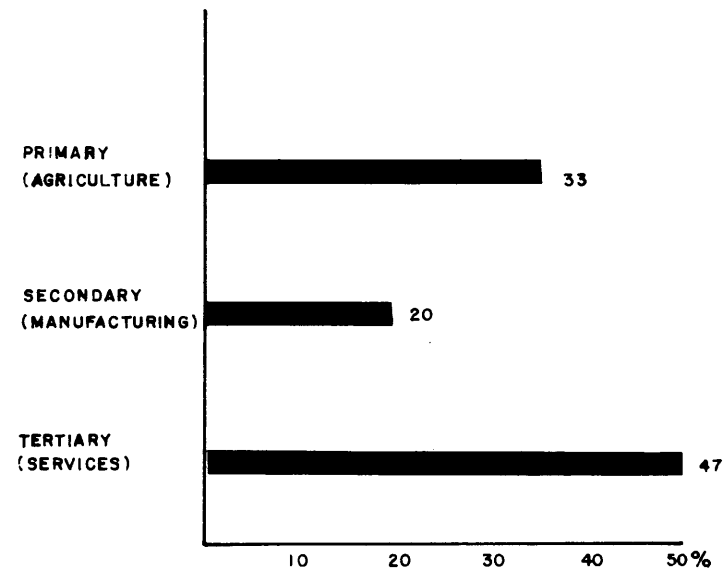
Family Income (in US\$)	Residence		
	Total	Urban	Rural
less than \$240	39.6%	22.6%	58.0%
\$240 - \$400	21.9%	19.6%	24.3%
\$400 - \$800	21.9%	31.1%	12.0%
\$800 plus	<u>16.6%</u>	<u>26.7%</u>	<u>5.7%</u>
¹⁶ Total (in percent)	100.0%	100.0%	100.0%

Socio - Economic 1

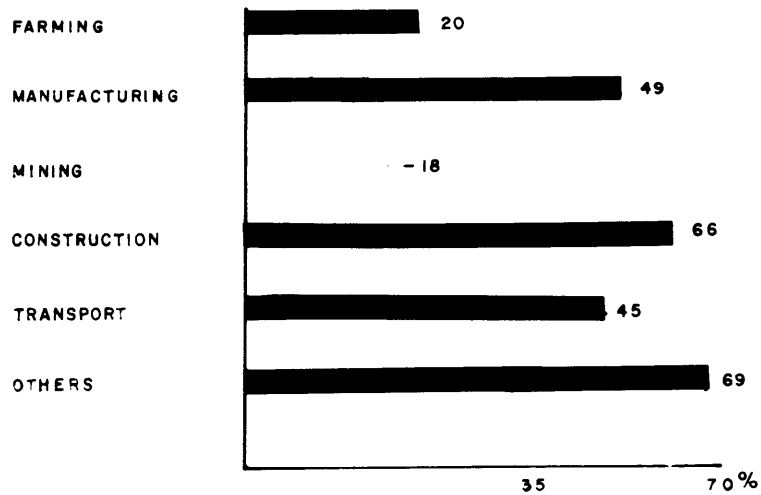
MANUFACTURING SECTOR (% OF GROSS INDUSTRIAL VALUE) 1966¹⁹



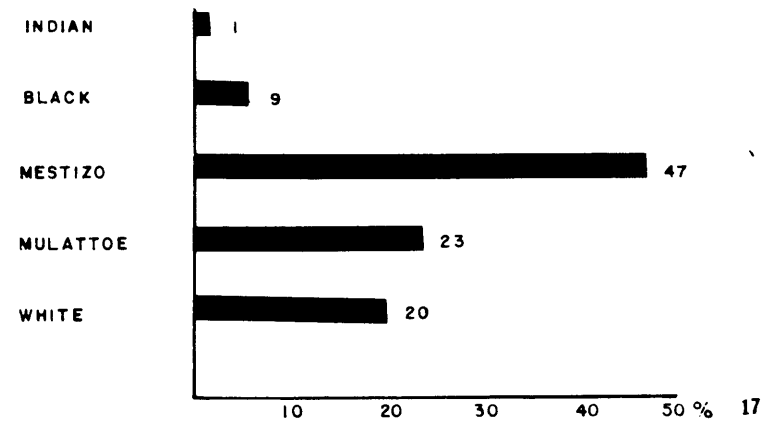
GNP. DISTRIBUTION BY SECTOR (1972)²⁰



LABOR DISTRIB. 1964 - % OF CHANGE FROM /51²¹



ETHNIC DISTRIBUTION²²



Devaluation and other Government solutions

The Colombian Peso has been devalued from 1 Peso = US\$ 60 cents in 1945
to 1 Peso = US\$ 5 cents in 1971

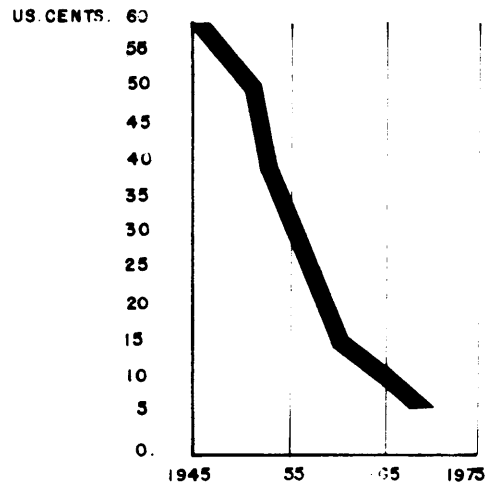
In order to maintain a seemingly growing economy, great debts have been incurred to the point that now 30 percent of the total national budget is reserved for the payment of external loans.²³

A short-sighted solution for the employment problem has been the uncontrolled growth of the service sector, both in absolute terms and in the GNP percentage assigned to it.

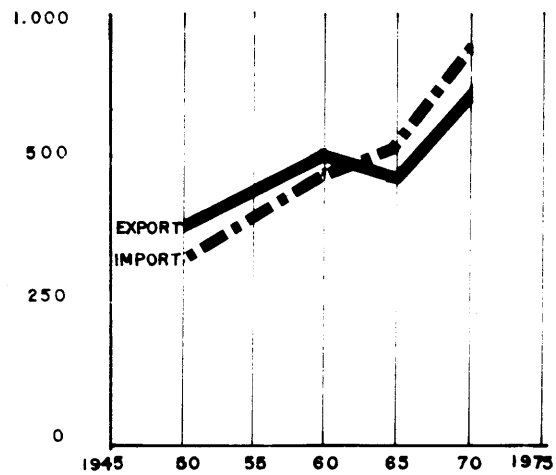
The primary sector (agriculture) is constantly being reduced, as it has become clear that dependence upon primary products leads, at best, to an unstable economy. Furthermore, Colombia's intensive farming land is only 2.4 percent of the total land available.²⁴

With the primary sector declining, the secondary (industry and manufacturing) being heavily determined either by foreign corporations, foreign markets and catering to a relatively small percentage of the total population, with its main emphasis in the beverage and clothing industries, the government's only alternative has been to expand disproportionately the tertiary sector (services) creating new institutions and enlarging those already existing. The final result has been an enormous bureaucracy which further obstructs any attempts made by private or public firms of creating employment and generating economic growth.

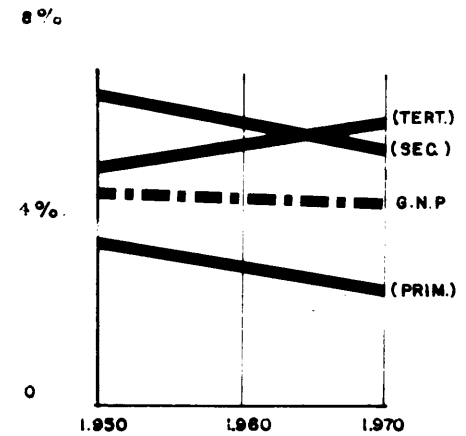
DEVALUATION OF THE PESO²⁵



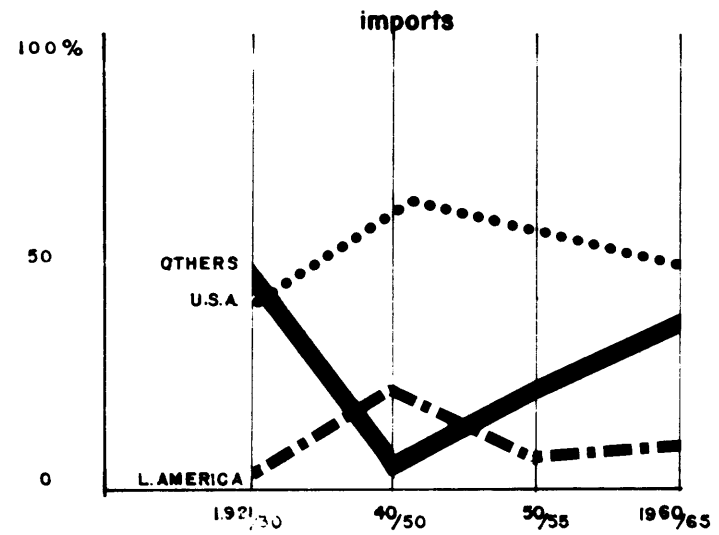
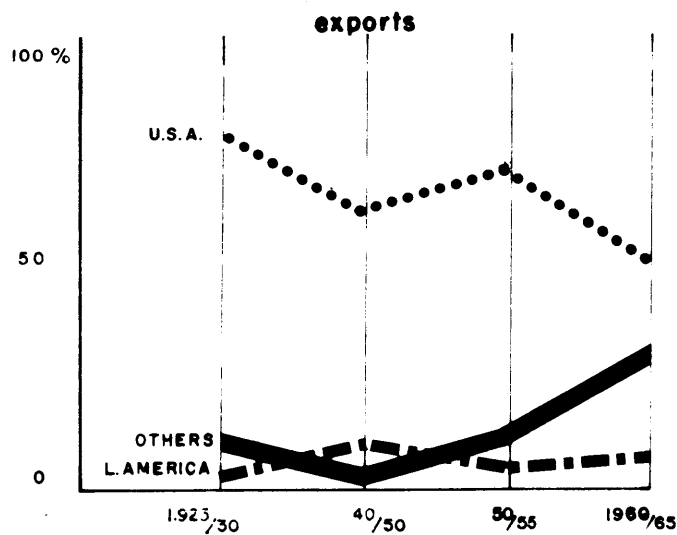
TRADE IN US \$ (millions)²⁶



RATE OF GROWTH - GNP²⁷



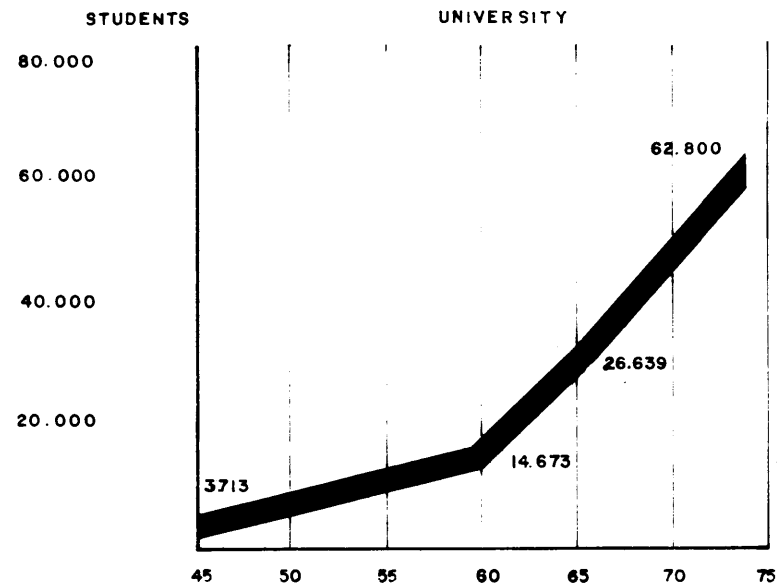
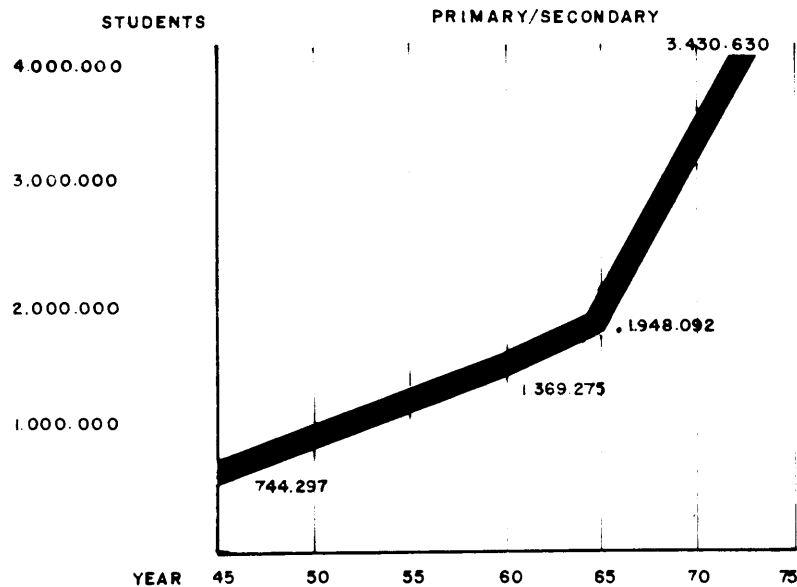
DISTRIBUTION OF FOREIGN TRADE 1925-1965²⁸



Summary

A vicious circle is entered by most developing countries; that is, with the present population growth and population pyramid, the educational deficiency and the economic dependency affecting the rural to urban balance (decline of the agricultural sector), there is a surplus of unskilled labor which remains marginal to the economic and social development of the country. The need to mechanise the industry in order for it to be competitive in the world market has made this unemployment and under-employment a structural problem which requires the change not of some variables, but of the pillars on which the system has been operating, in order to solve it. The growing marginal population has, in turn, reduced the consumer capacity of the nation as a whole which is translated in the lack of incentives for the classical "entrepreneurial growth." Only foreign corporations have the capital to finance new investments and industries, but they export most of their profits intensifying the economic dependency of developing countries, while exhausting the natural resources (oil, copper, etc.) without the producing countries benefiting in the process.

EDUCATION GROWTH FROM 1.945 TO 1.971



The Educational System

The Colombian educational system is quantitatively and qualitatively deficient.

The quantitative deficit:

Of the population over 15 years, 27 percent has no secondary schooling; 15 percent of the urban and 41 percent of the rural population.

Among the urban population, 17 percent are left completely out of the educational system. In the rural population, this marginal group amounts to 36 percent.

Of the total amount of enrolled students in high school in the largest 30 cities, 79 percent are concentrated in the three largest: Bogota with 57 percent, Medellin with 16 percent, and Cali with 6 percent. The same holds true for the vocational schools where the three cities comprise 61 percent of the total enrolled student body.

But, even if the quantitative problem could be solved and schools, universities, etc., were built in "an unprecedented manner," the quality of the present educational system is still deficient as it is based on foreign models which bear little relevance to the Colombian situation.

Context: **MIGRATION and HOUSING**

Content: RURAL URBAN MIGRATION and HOUSING IMPLICATIONS
MIGRATION PATTERNS
HOUSING DEFICIT
INSTITUTIONAL HOUSING
HOUSING DEMAND PER INCOME SECTOR
NATIONAL BUDGET DISTRIBUTION

Migration and Urban Housing Deficit

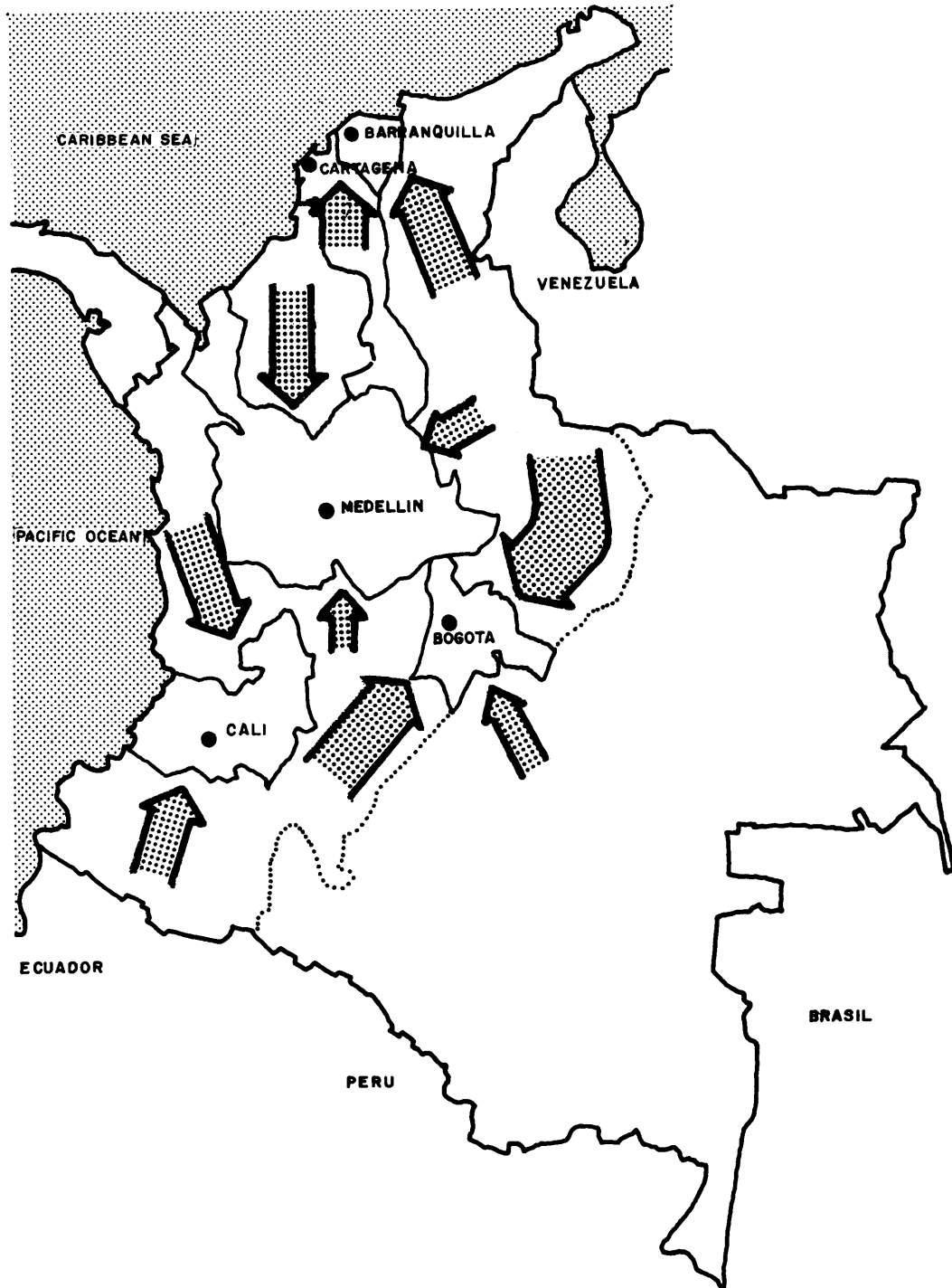
The Rural/Urban Migration and its Housing Implications

The classic model of urbanization assumes three stages, each with a dominant economic sector. In the first stage, agriculture is the leading sector; in the second stage, the industrial sector is prime; and, in the third stage, the service sector is dominant.

Colombia is in the transition between the first and second stages, which causes, as an important by-product, population displacements from the rural to the urban areas. This population shift was taken to be a positive phenomenon, as the conceptual development of the third world was based on the European model. Unfortunately, the industrial sector in the Colombian case cannot perform the same role it played in the urbanization process of England or the United States, mainly due to its "technicalization" (see page 12) and its random "exogenously" dependent growth. Soon after the migration process began, the housing, services and facilities deficit became more apparent and when the labor market had reached its saturation point, dissatisfaction with large segments of the population were felt. The view that the "marginal migrant" was a factor of social and political instability gathered force, and migration was seen as a movement that had to be "corrected." The policies of regional planning and population redistribution became the key answers in solving the migration problem.

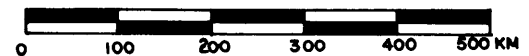
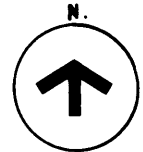
Unfortunately, the migration process is not as "logical" as the planners would like it to be and does not respond to the "rational stimulus" in the way "regionalization models" do, i.e., middle-sized cities, although sometimes below their saturation levels in services and facilities, fail to become "receptive centers" automatically. The migrant population tends to base their reasons for moving to larger cities on "immeasurable" factors such as choice of employment, freedom for the women from rural feudal

Migration Patterns¹ 2



POPULATION MIGRATION TO CAPITALS (1964)			
CAPITAL CITY	TOTAL POP/64	POP BORN CITY	TOT. MIGRATION
BOGOTA	1,568,101	746,286	821,815
MEDELLIN	722,887	394,654	378,233
CALI	637,929	272,419	365,510
BARRANQUILLA	498,301	297,671	200,630
CARTAGENA	242,085	161,751	80,334

COLOMBIA



life patterns (55 percent of the migrants are women)², social mobility, etc., therefore, the migration paths lead only to a few dominant cities. There seems to be a rule of thumb--the larger the city, the larger its share of migration. As this is a self-reinforcing pattern, the growth of the main Colombian cities is beyond their capacity to integrate the population living in them. Unemployment, under-employment, the growth of an unmanageable bureaucracy, and squatting are all facets of the same problem--the gap between the theoretical attributes given to cities and their incapacity to match these expectations; a gap which, in part, is responsible for the sense of frustration present in most cities nowadays. The outcome of this situation has been the crisis experienced by most municipalities: 1) in physical terms as seen by the human congestion; 2) socially, as far as lack of required services for certain sectors of the urban population, translated in different life standards for different socio-economic groups; 3) financially, crystallized in the economic bankruptcy of the municipalities; 4) administratively, in the lack of coordination and action between and within municipal areas leading to duplicity of unnecessary investments.

On the other hand, the large cities have more control over the political and economic policies of the country and, as such, have directly benefited from them. This explains the degree of concentration of economic and social resources these cities experience.

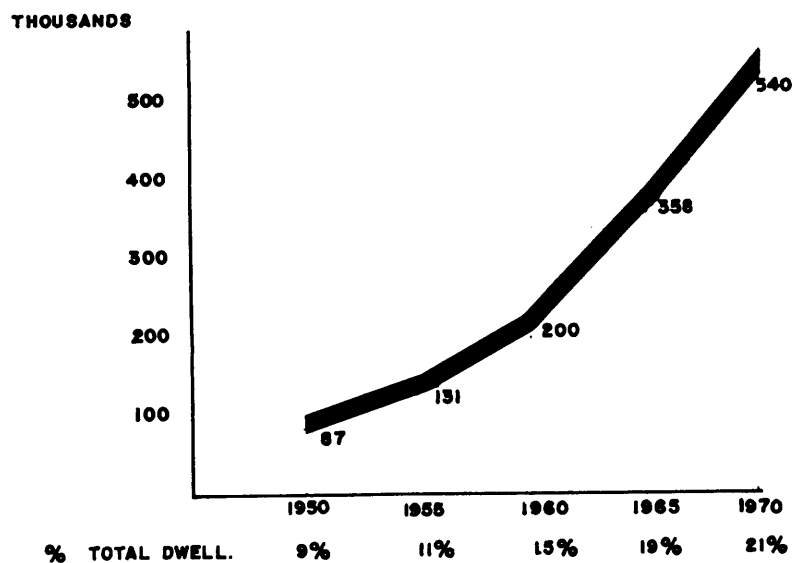
In 1966, four cities--Bogota, Medellin, Cali, and Barranquilla--comprised 73 percent of the total aggregate value and 75 percent of the total industrial jobs, while including 58 percent of the urban population³. In the area of health, there is a concentration of medical staff in the large cities, but lack of equipment. The small-sized cities (10,000 to 30,000 inhabitants) have unused equipment and a larger amount of beds per 10,000 inhabitants than the larger cities. The latter (larger) contain 72 percent of the total medical force.⁴

Housing Deficit 2

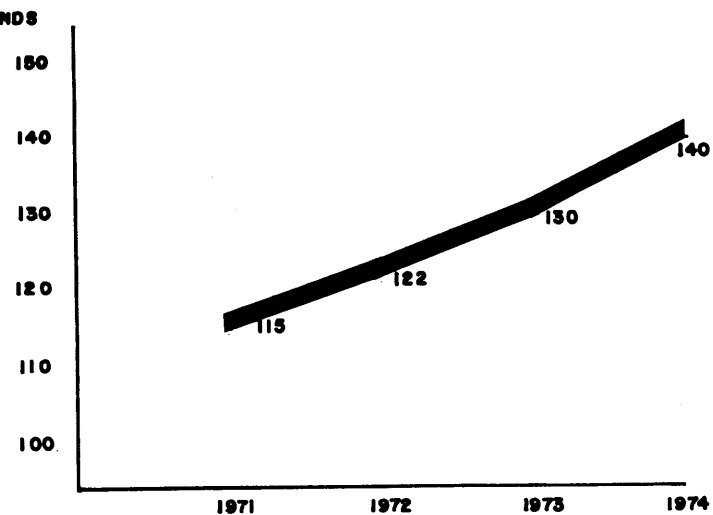
The Urban Housing Deficit of Colombia for 1970⁵

		1970	
Total number of urban families		2,379,993	
Total number of existing dwellings		<u>1,840,049</u>	
Quantitative deficit		539,944	21% in relation to number of families
Of the existing number of dwellings	1,840,049		
	570,500		31% are temporary
	662,500		36% are dwellings without water
	791,500		43% are dwellings without sewage
	700,000		38% are one and two room dwellings
	681,125		37% are deteriorating dwellings

GROWTH OF URBAN HOUSING DEFICIT⁶



DEMAND FOR NEW HOUSING (due to pop. growth)⁷



The financial situation of the large cities is compared with the case of Boston to get a sense of scale, although the comparison cannot be taken as an indicator.

Municipal annual tax revenue (1967)⁸

	Per Capita in US\$	Total in Thousands US\$
Medellin	26	23,268
Bogota	10	20,643
Cali	8	5,812
Barranquilla	7	3,906
Cartagena	5	1,448
Boston	569 ⁹	366,577

Summary

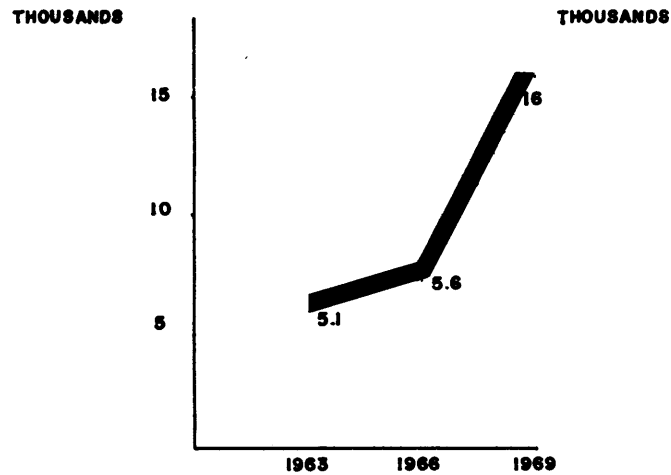
There are two main forces contributing to the process of migration: Push and Pull factors. Push factors are those elements which break the inertia of the peasant population and expel them from the land. Pull factors are the forces that act as magnets and attract these migrant populations.

Among the more important push factors are: land tenure, both in terms of ownership (Latifundia and Minifundia) and in terms of production (approximately one third of the total exploited land is used for agriculture while two thirds are left as grazing pastures). Also, labor productivity is very low in the rural areas.¹⁰

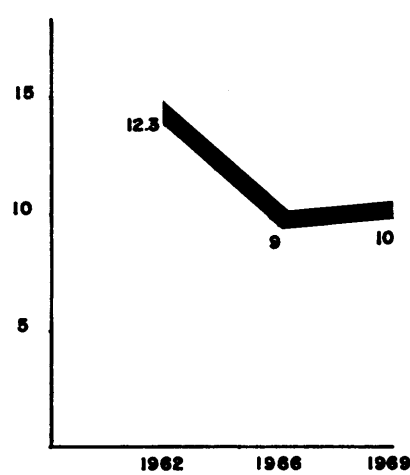
	(1961) Percentage of active population in agriculture and	productivity per capita
England	5%	US\$1,345
France	26%	US\$1,203
Venezuela	32%	US\$ 644
Colombia	54%	US\$ 287

Institutional Housing 2

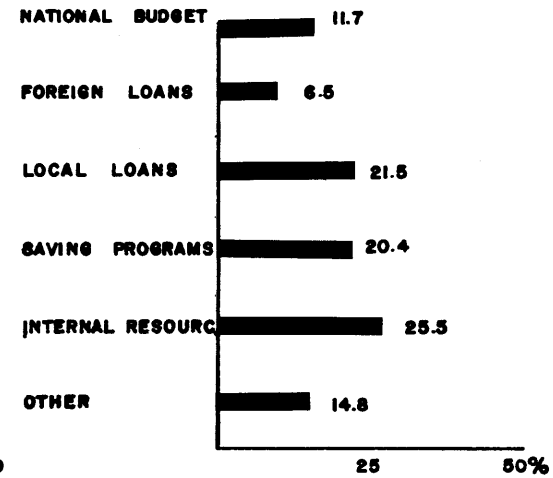
HOUSES BUILT BY BCH.¹¹
(National Mortgage Bank)



HOUSES BUILT BY ICT.¹²
(National Housing Institute)



ICT. FINANCIAL SOURCES 1970¹³



ICT Program Composition for the Year 1969¹⁴

	1969
Number of dwellings improved	14,000
Average cost of improvement	US\$ 152.00
Number of dwellings built	10,519
Average cost of dwelling	US\$ 1,794.00
Number of families served by ICT programs	24,519 = 1% of total number of urban families

Thus, the labor productivity in agriculture being so low, it is one more incentive for the population involved in it to migrate to the cities in search of more remunerative work.

Among the more important pull factors are the "attributes" given to urban areas such as: 1) higher wages (the average wage of a factory worker for 1968 was \$65 per month versus US\$25 earned by an agricultural worker)¹⁵; 2) accessibility to labor unions, and enforcement of labor laws (i.e., triple salary for people working on Sundays); 3) accessibility to social services (i.e., social security and medical treatment); 4) access to political participation (most political parties operate in urban areas); 5) protection from rural violence (although this phenomenon has diminished recently in Colombia); 6) the "amenities" offered by the cities on account of their centralization of resources (recreational facilities, sports, educational facilities, etc.)

Some solutions offered currently are:

1. Decentralization of employment activities, services, facilities, and decision-making organisms leading to a more efficient use of the natural, infrastructure and manpower resources.
2. Channeling of the migration movement into middle-sized cities chosen as "poles of development."
3. Reforms in terms of the agricultural land-holding system, urban land speculation, and credit systems. (At present, low-income groups are automatically screened from most credit programs.)

In conclusion, the "marginal" groups (or the lowest migrant income sectors in urban areas) have, as a by-product, created a positive phenomenon in terms of a "marginal" economic, housing, and industrial systems (i.e., use of discarded materials, carpentry,

Housing Demand per Income Sector 2

General Information Related to Housing: (1969)¹⁶

1. Average annual income per capita: US\$ 374.00

Minimum annual subsistence wage: US\$ 600.00 (subsistence wage = SW)

2. Income levels:	(1)	(2)	(3)	(4)	(5)
	0 to 1 SW	1 to 2 SW	2 to 3 SW	3 to 4 SW	over 5 SW
Percent of urban distribution	25%	35%	20%	10%	10%
Monthly wages in US\$	\$50.00	\$100.00	\$150.00	\$200.00	\$250.00
Percent of income available for dwelling	7%	13%	20%	22%	25%
Monthly amount available for housing	\$3.50	\$13.00	\$30.00	\$44.00	\$62.50
Recommended cost of dwelling and services (US\$)	\$823.00	\$2,516.00	\$4,186.00	\$4,844.00	\$5,000.00

etc.) to serve themselves. Neither the government institutions nor the private sector have been able to cater to these marginal communities due to different values, misplaced priorities, political pressures, etc. A policy geared towards destroying the existing autonomy of the groups would, at this stage, be counter-productive and can easily lead toward the dependency of the low-income classes on institutional programs. A case in point is the welfare system in the United States which has not been conducive to allowing individuals or communities to solve their own problems.

One of the most prominent consequences of the migration process has been its impact on the housing market with the result of an expanding housing deficit. The charts attempt to illustrate the magnitude of the problem and give a general view on its implications in terms of the existing low-cost housing market, its participants, their incomes, and the institutions in charge of dealing with the problem.

National Budget Distribution 2

DIRECT GOVERNMENT INVESTMENTS¹⁷ (% of total budget) 1959/1964

A-INVESTMENTS IN ECONOMIC DEVELOPMENT

1- TRANSPORTATION

2- ENERGY

3- AGRICULTURE ; MINING ; INDUSTRY ;
COMMUNICATIONS, MARKETS (no one over 4.2%)

B-INVESTMENTS IN SOCIAL AND URBAN DEVELOPMENT

1- EDUCATION

2- HEALTH

3- WATER SUPPLY AND SEWAGE SYSTEMS

4- HOUSING

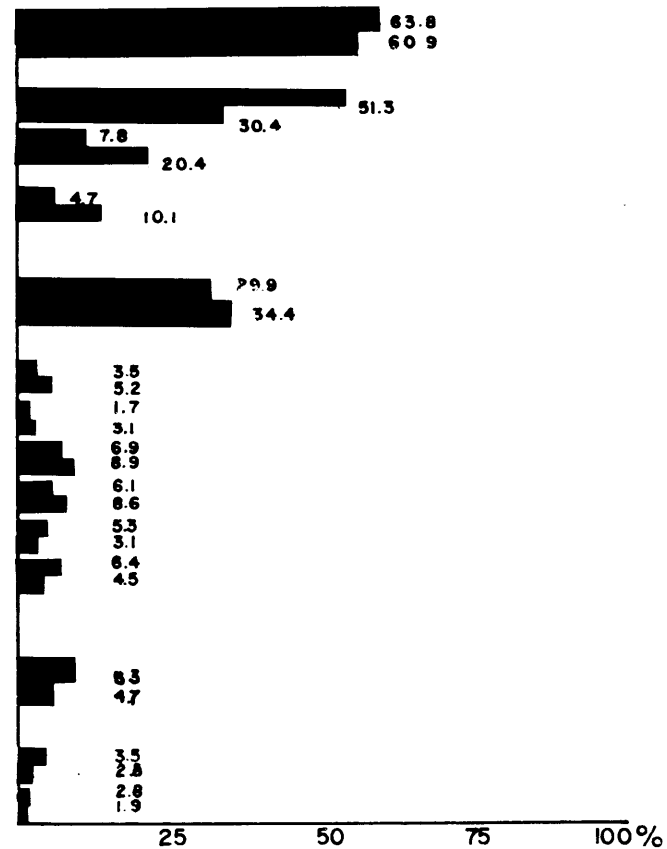
5- PARKS AND AVENUES

6- OTHER WORKS OF URBAN DEVELOPMENT

C-ADMINISTRATIVE INVESTMENTS

1- PUBLIC BUILDINGS

2- SALARIES



Context: **CARTAGENA**

Content: GENERAL INFORMATION

THE REGION

POPULATION

CARTAGENA

HISTORY

GROWTH

LAND SUBDIVISION

LAND USE

SOCIO-ECONOMIC CHARACTERISTICS

INCOME LEVELS

DENSITY

UTILITIES

FACILITIES

The Department of Bolivar¹

Area: 26,392 sq. Km.
Population: 793,849 (1968)
Educational
Facilities: 773 primary schools
27 high schools
1 university

Economic

Activities: Industry is concentrated in Cartagena. Most of the land in the department is used for cattle raising (over 2,000,000 heads). Tobacco, cotton and rice are also produced. In the south of the department, there are oil deposits with an annual production of 7.6 million barrels.

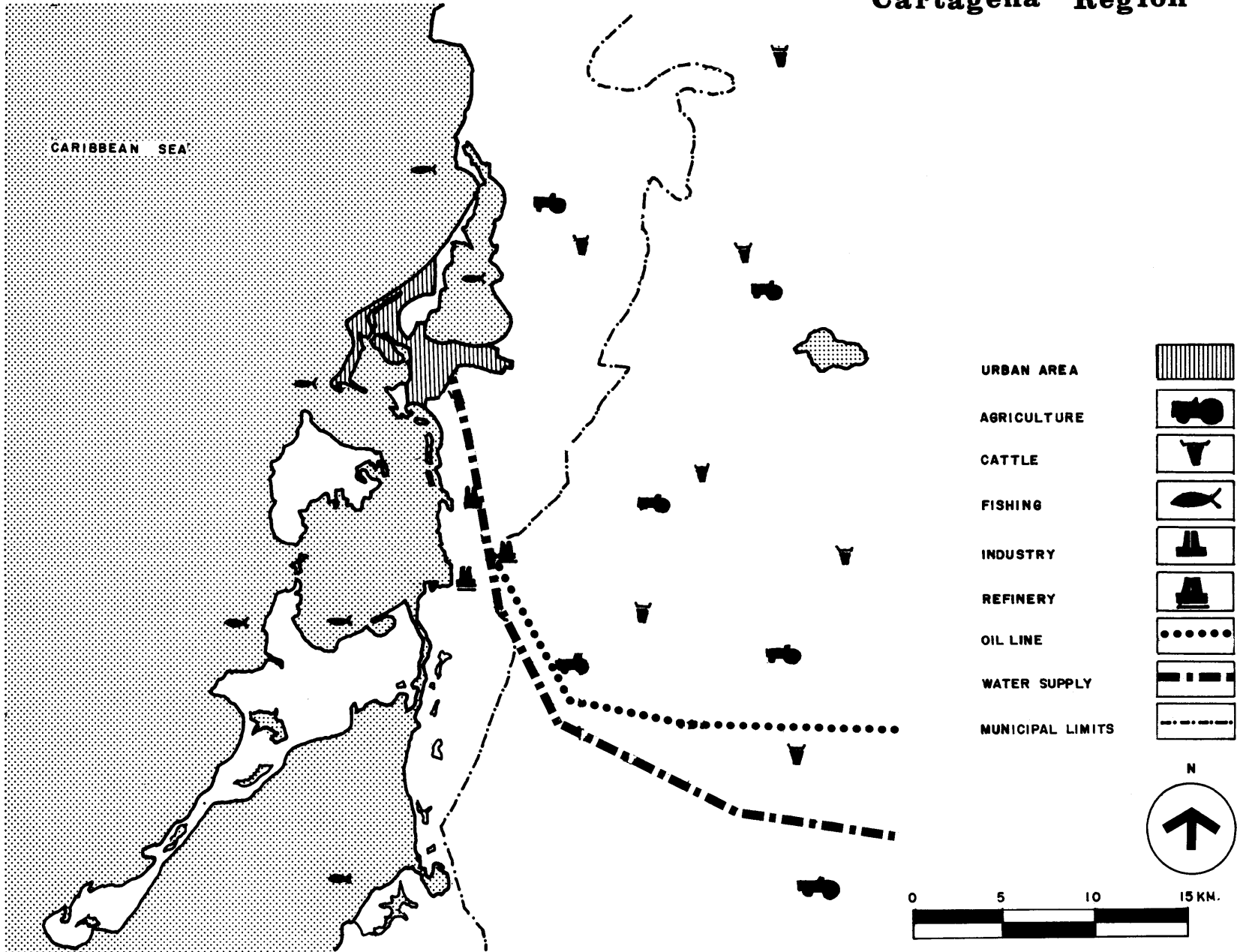
Geographic

Regions: To the south, there is a rain forest; savannas in the central region; and dry plateaus toward the coast.

THE DEPARTMENT OF BOLIVAR AND THE CITY OF CARTAGENA²

	Bolivar	Cartagena
Population growth rate:	3.51%	4.89%
Percentage of national population:	3.97%	1.38%
Percentage of departmental population:	---	34.89%
Estimated population (in thousands) in 1970:	1,971	295
	1975: 2,308	380
	1980: 2,650	676
Population distribution according to place of birth (1964):		
Born in the department:	92.13%	
Born in another department:	7.87%	

Cartagena Region³ 3



Population⁴

POPULATION DISTRIBUTION

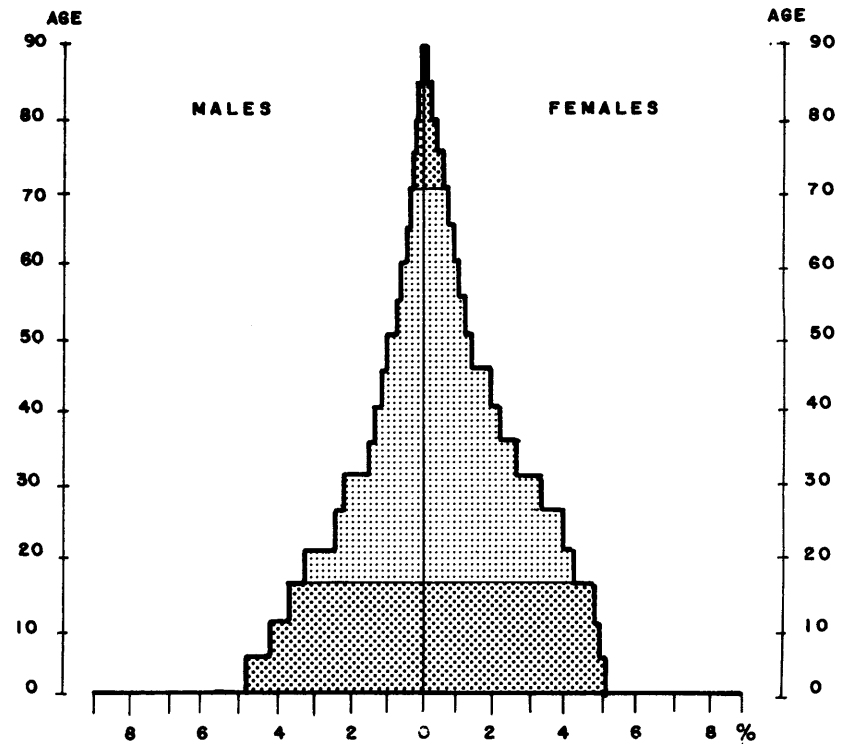
AGES	MALE	FEMALE
0 to 1	5.358	5.052
1 — 4	19.316	18.322
5 — 9	22.585	22.288
10 — 14	19.019	20.207
15 — 19	16.344	20.200
20 — 24	11.589	15.155
25 — 29	8.915	11.589
30 — 34	7.726	9.806
35 — 39	6.538	8.321
40 — 44	5.646	6.538
45 — 49	3.863	5.350
50 — 54	3.566	4.457
55 — 59	2.377	2.971
60 — 64	2.377	3.269
65 — 69	1.189	1.783
70 +	2.080	3.566
TOTAL	138.486	148.773

MALE : 48.3 %

FEMALE : 51.7 %

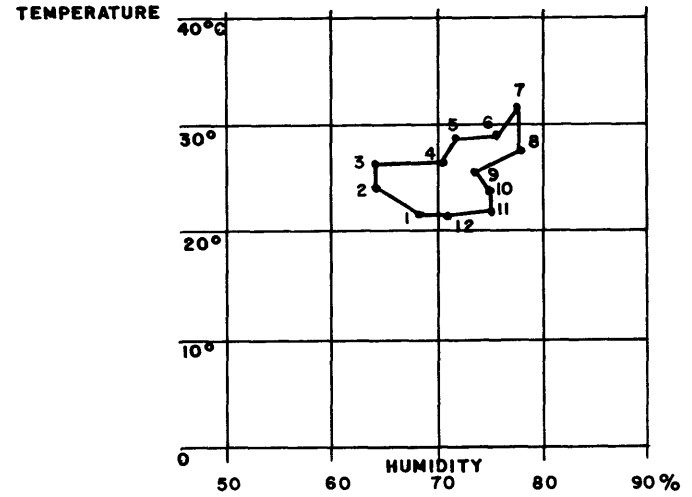
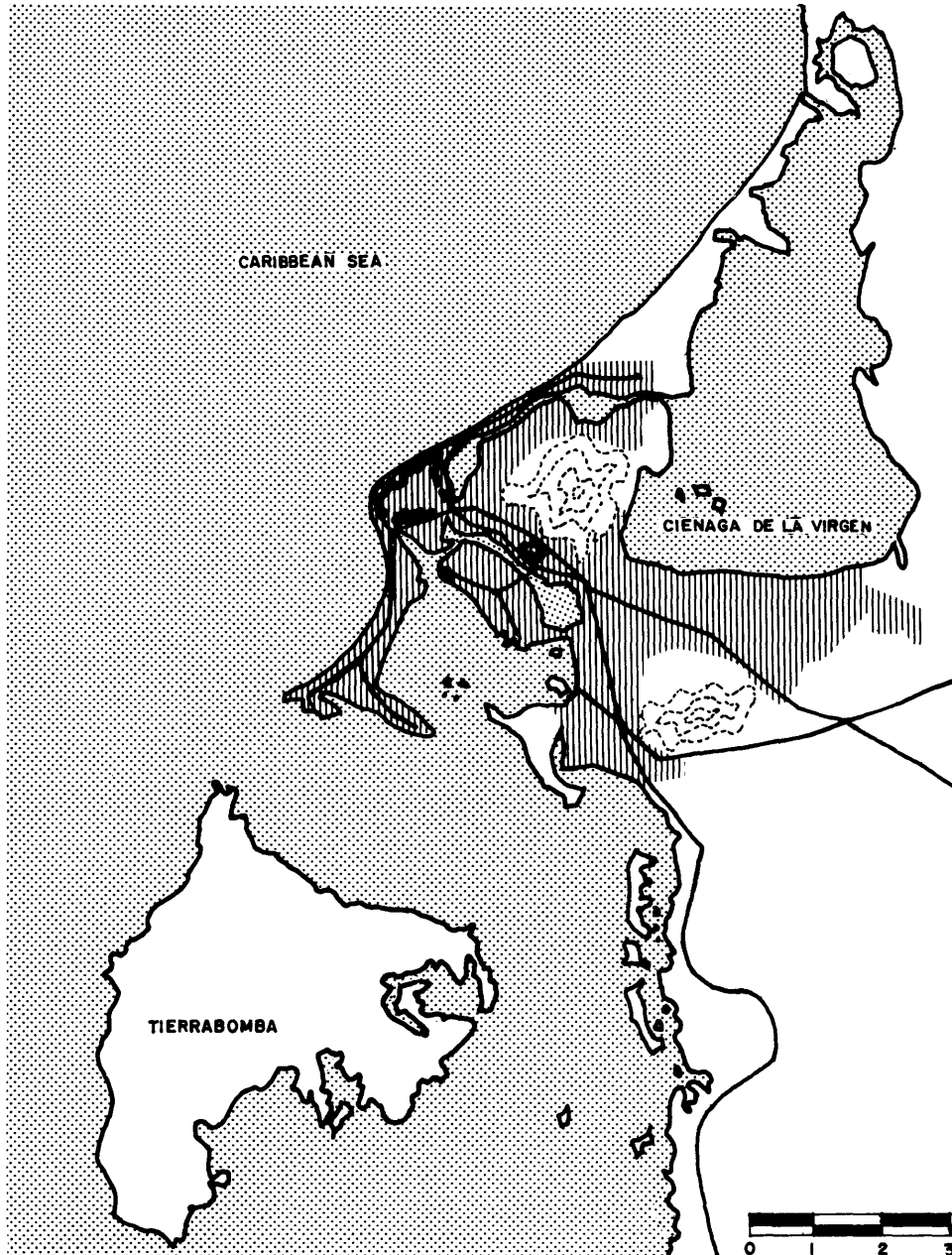
CENSUS YEAR : 1.969

POPULATION PYRAMID.

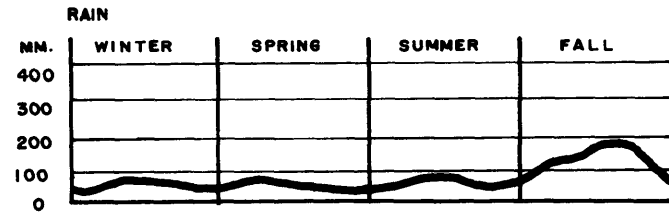


CENSUS YEAR : 1969

Cartagena 3



THE FIGURES INDICATE THE MONTH OF THE YEAR



CARTAGENA DE INDIAS.

CAPITAL OF THE DEPARTMENT OF BOLIVAR

AREA : 5.310.00 HA.

POPULATION : 295.200

AVERAGE TEMP : 27.2 °C

LAT : 10° 25' 06" NORTH

LONG : 75° 31' 49" W.GREENWICH

HEIGHT: 2 TO 5 MTS. ABOVE SEA LEVEL.

History ⁵

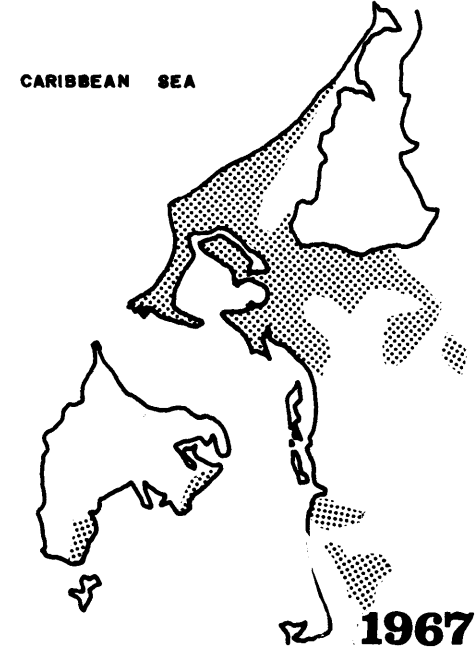
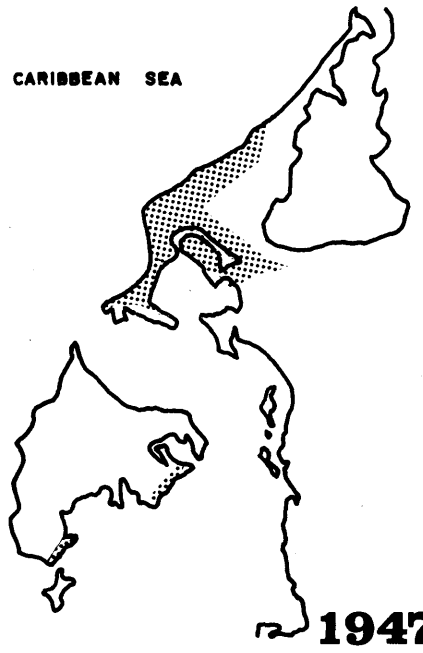
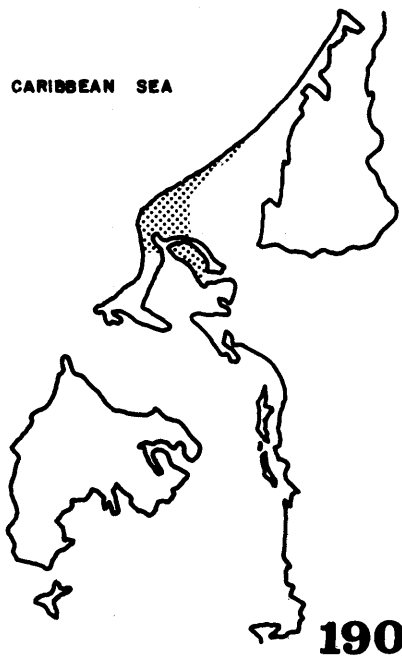
Cartagena was founded by Pedro de Heredia on January 13, 1533, but it was not until the end of the 16th Century that building began.

There were then two approaches by sea to the city. They were Bocagrande ("large mouth") located at the northern end of Tierra Bomba Island, and Bocachica ("small mouth") located south of Tierra Bomba. Bocagrande was filled in after Admiral Vernon's attack in 1741 and, thereafter, the only approach from the south was by the narrow channel of Bocachica. Bocachica leads into the great bay of Cartagena, ten miles long and three miles wide. The two forts (built in the 18th Century) at this entrance were linked by heavy chains to prevent surprise attacks by pirates. The walled city of Cartagena was sacked in 1544 by Robert Baal; in 1586, by Francis Drake; in 1697, by the Baron de Pointis and Henry Morgan; and in 1741, Sir Edward Vernon accompanied by a brother of George Washington failed to take the city which was defended by the one-eyed, one-armed, and lame Don Blas de Lezo.

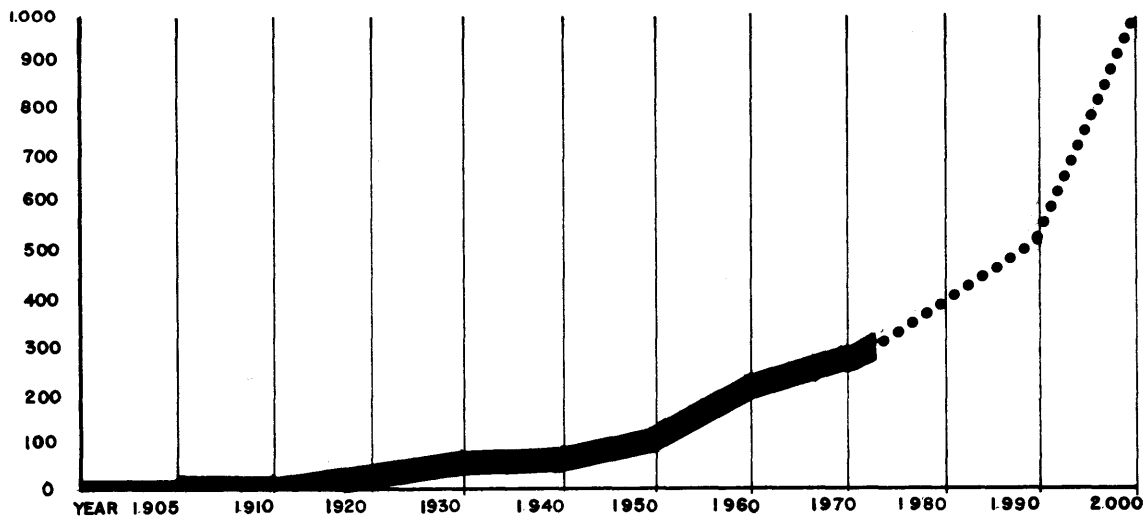
Cartagena declared its independence of Spain in 1811, but was retaken by the Royalists under Pablo Morillo in 1815. The patriots finally freed it in 1821.

Due to its strategic military location, major defensive works were done. Among the most important were: the walls around the city, with an average height of 40 feet and 55 feet thick, were started in 1634 and finished by 1735. Seven forts were built between the 16th and 18th Centuries. Also, one canal, 90 miles long, connecting the bay with the Magdalena River and the interior of the country, was built. Cartagena was of strategic importance to the Spaniards because it was the most important harbor of the South American colonies, through which the goods (gold and other minerals, crops, etc.) were sent to Spain and the Spanish imports were brought into the continent.

Growth⁶ 3



POP. THOUSANDS



ANNUAL RATE OF GROWTH 4.9%

Land Subdivision⁷

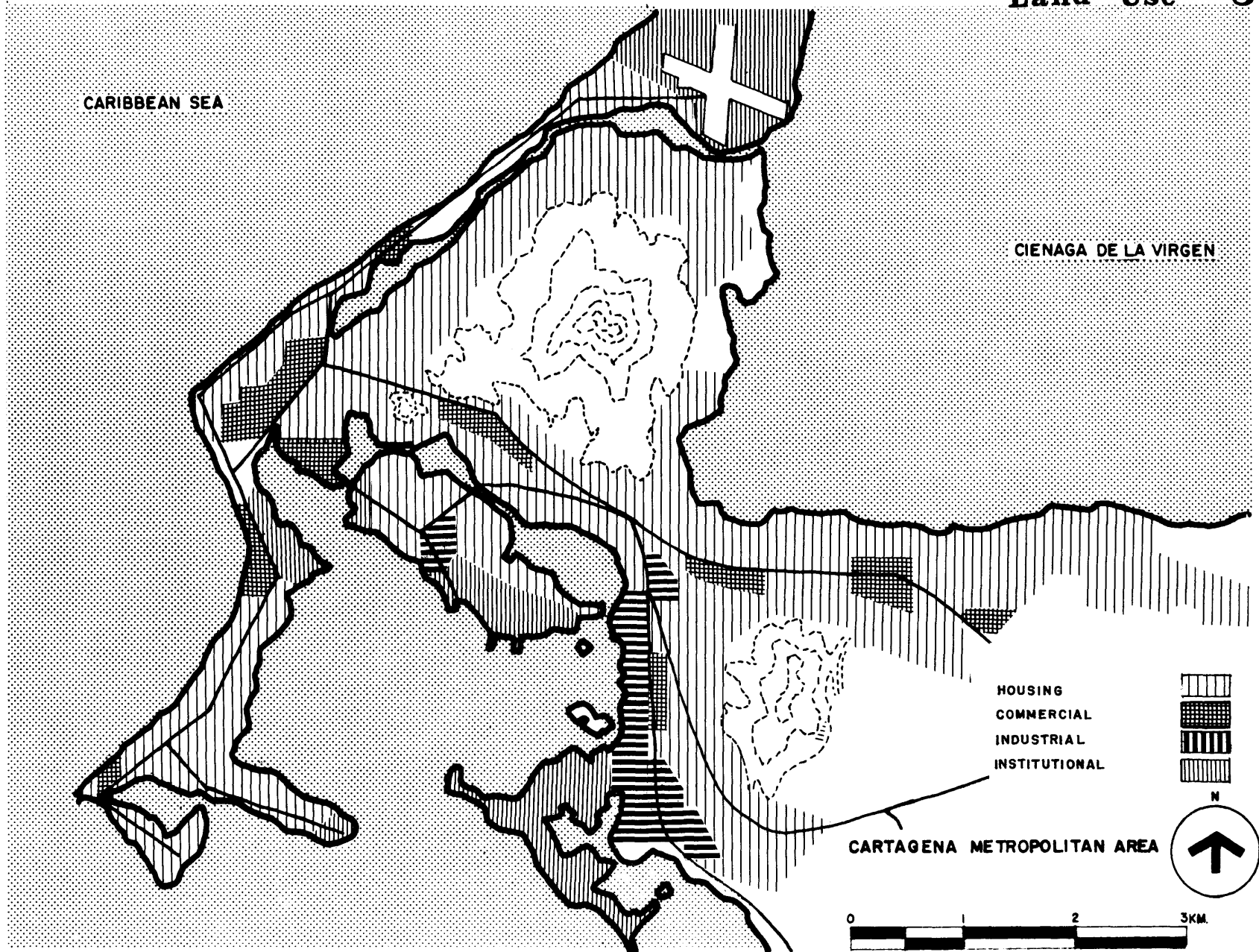
		HA.	%	
TOTAL URBAN AREA 5.310.00 HA.	A-LAND 2.650.00 HA.	URBANIZED AREA 1.498.00 HA - 56.5%		
		INSTITUTIONAL	43.00	2.88
		INDUSTRIAL	37.00	2.48
		COMMERCIAL	15.00	1.00
		PUBLIC USE	441.00	29.42
		HOUSING	962.00	64.22
		VACANT LAND 1.152.00 HA - 43.5%		
		READY AVAILABLE	754.00	65.4
		MARSH	398.00	34.6
	B-WATER 2.660.00 HA.	LAGOONS BAY STREAMS CHANNELS ETC.		

THE COMMERCIAL SECTOR

Most of the commercial activities are distributed around low-income areas where one out of every ten houses acts as a local shop. This is partly due to the existence of a marginal economy which forces the family to look for additional economic activities such as growing vegetables, raising animals, small-scale garment industry, food and drink stands, etc. Another cause is the limited amount of cash funds-- the housewife has to "shop" two or three times a day. In most communities there is a credit system which operates on a daily or weekly basis.

Only along important streets or in places where there is a confluence of activities are there any large commercial nuclei, as in the case of the walled city and its main entrance.

Land Use 3



Cartagena

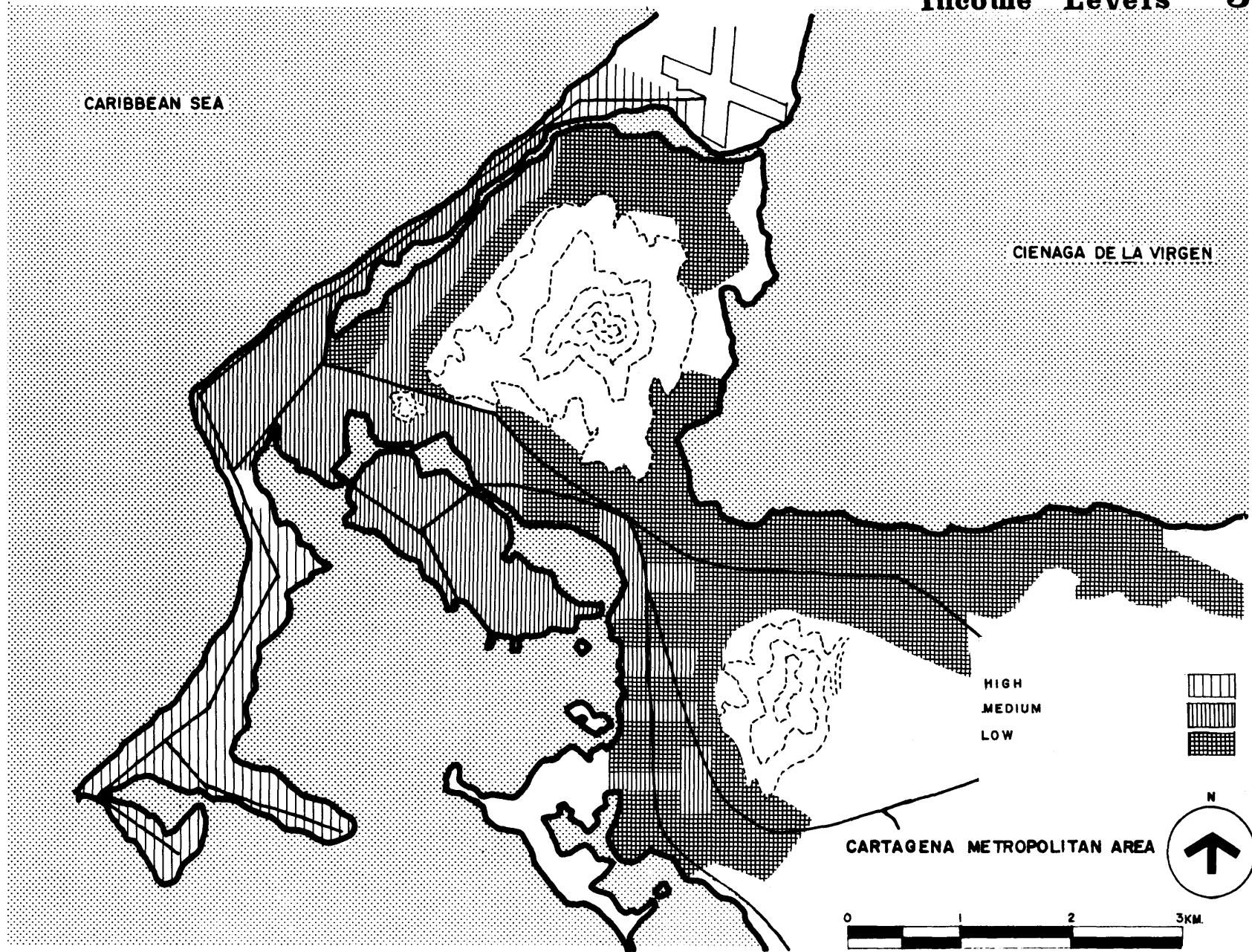
Its role at the regional level

Cartagena follows the centralization model of most department capitals in developing countries. Fifty-eight percent of the department's commercial activities are located in Cartagena. Sixty-one percent of the aggregate value belong to the city, and it comprises 62 percent of the total employed personnel in commercial activities. It acts as the regional market in which 96 percent of the agricultural sales and 95 percent of the hardware sales take place.⁸

Cartagena is considered to be the second largest industrial complex of the Colombian northern coast which has developed around the petrochemical industry and its derivatives. The zone of Mamonal contains an oil refinery and produces fertilizer obtained from petrol and industrial gases (nitric acid, etc.). The oil refinery has a capacity above 48,000 barrels a day.⁹

Recently, Cartagena was chosen as a national "tourist site" to be developed in order to incorporate Colombia into the international tourist market. A study was initiated to define Cartagena's role within the national, the regional, and the local levels, and to program the investment-priorities necessary to accomplish its socio-economic and physical development. The study will be published by the end of 1972, but, tentatively, the areas to be developed for intensive tourism are to the north of the city, close to the entrance of the Ciénaga de la Virgen; and southwest in the peninsula, jutting out of the mainland (see map page 35). In summary, the petrochemical and tourist industries are the primary income sources of the city.

Income Levels 3



Urban layout and density

As a consequence of the topography, the population concentrations are dispersed around lagoons, hillsides, canals, etc., creating a sprawled situation. The underdeveloped areas of the city amount to 30 percent of the total urban area and its saturation ratio is 86 percent with only an average density of 136.2 inhabitants/Ha. (The average density for Cartagena of 200 inhabitants/Ha., is suggested by Plan Piloto de desarrollo Urbano, Cartagena, Inst. Codazzi.)¹⁰

The existing low densities have resulted in an exaggerated physical expansion with consequent deficits in infrastructure, urban transport, and public services (police force, trash collection) the lack of maintenance of public areas, and long distances involved between dwellings and places of work.

The only urban areas with a high density are the slums, and this density is the result of overcrowding in which two or more families share the same one-story dwelling and, in some cases, the same room. In some low-income sectors of the city as in the Cienaga de la Virgen sector, densities range from 108 to 510 inhabitants/Ha.

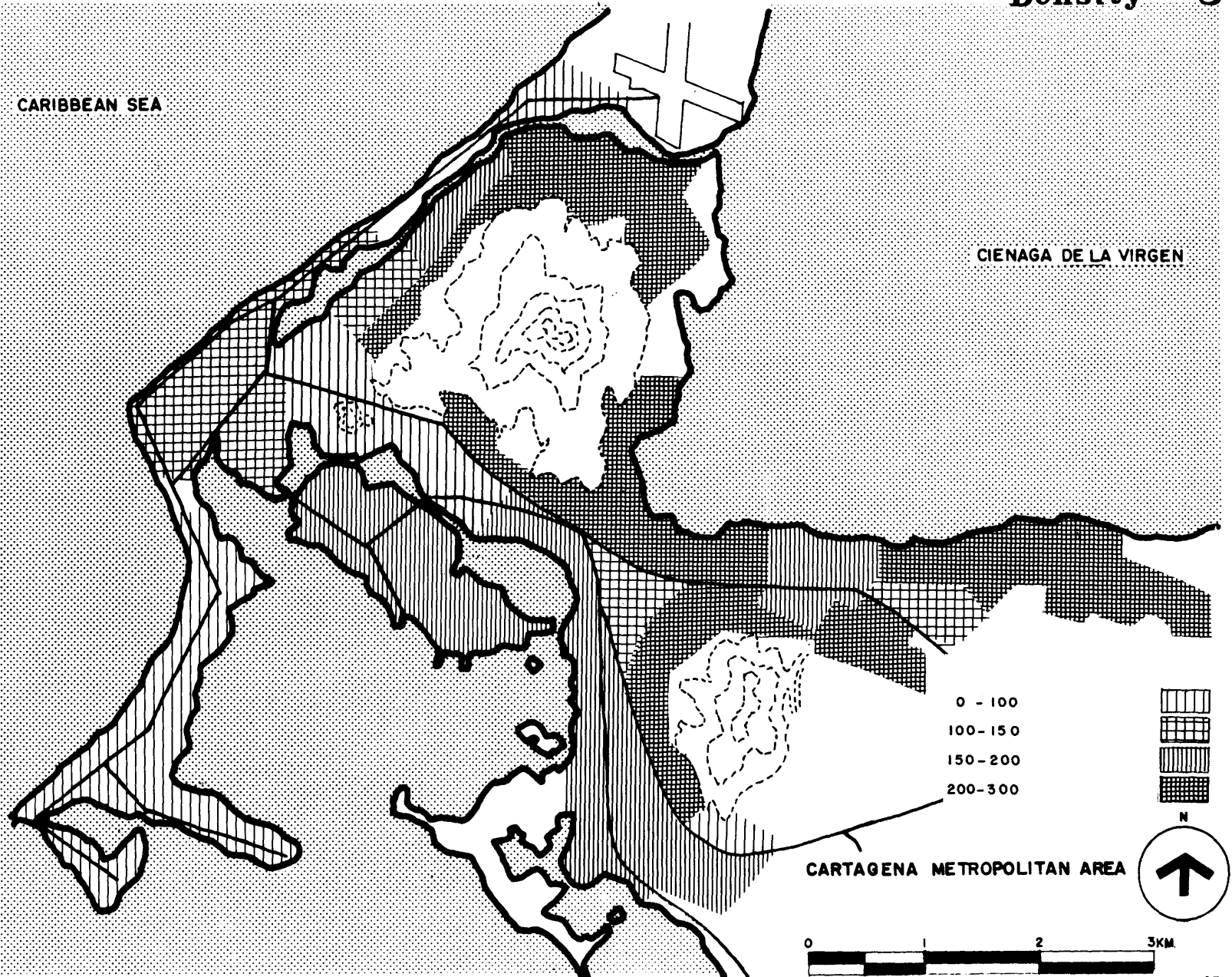
According to Cartagena's development plan, the following land uses and densities are planned:¹¹

Total urban population for 1965	250,000 inhabitants
Projected urban population for 1980 in existing urban area (80% saturation)	367,648 inhabitants
Total projected urban population for 1980	676,325 inhabitants
Population that must occupy new areas	308,677 inhabitants

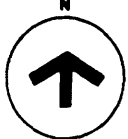
Density 3

CARIBBEAN SEA

CIENAGA DE LA VIRGEN



- 0 - 100
- 100 - 150
- 150 - 200
- 200 - 300

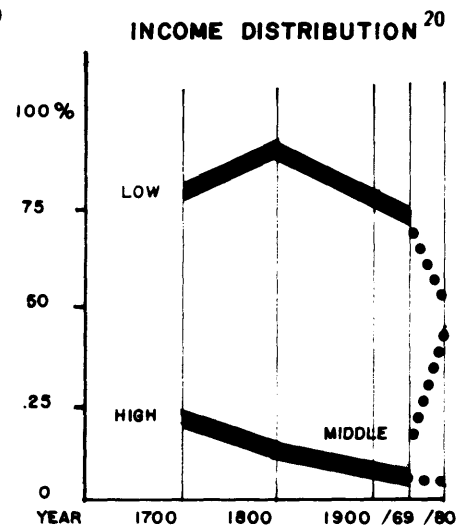
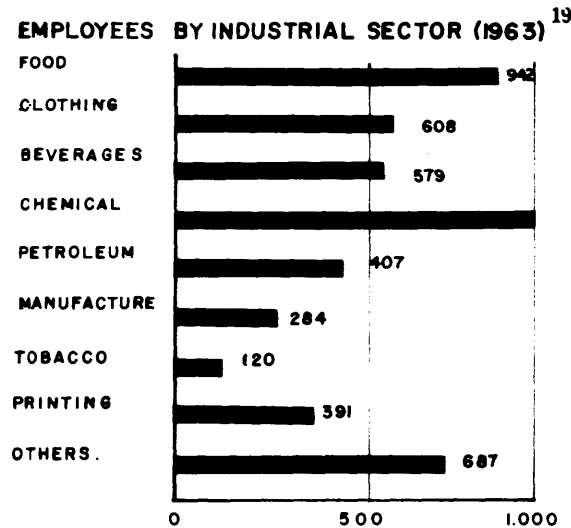
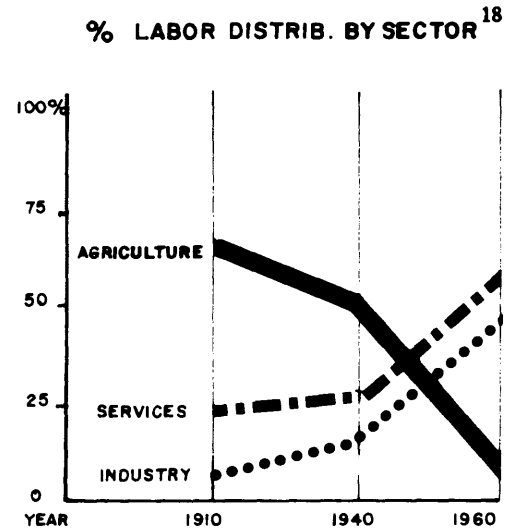


Socio-economic characteristics

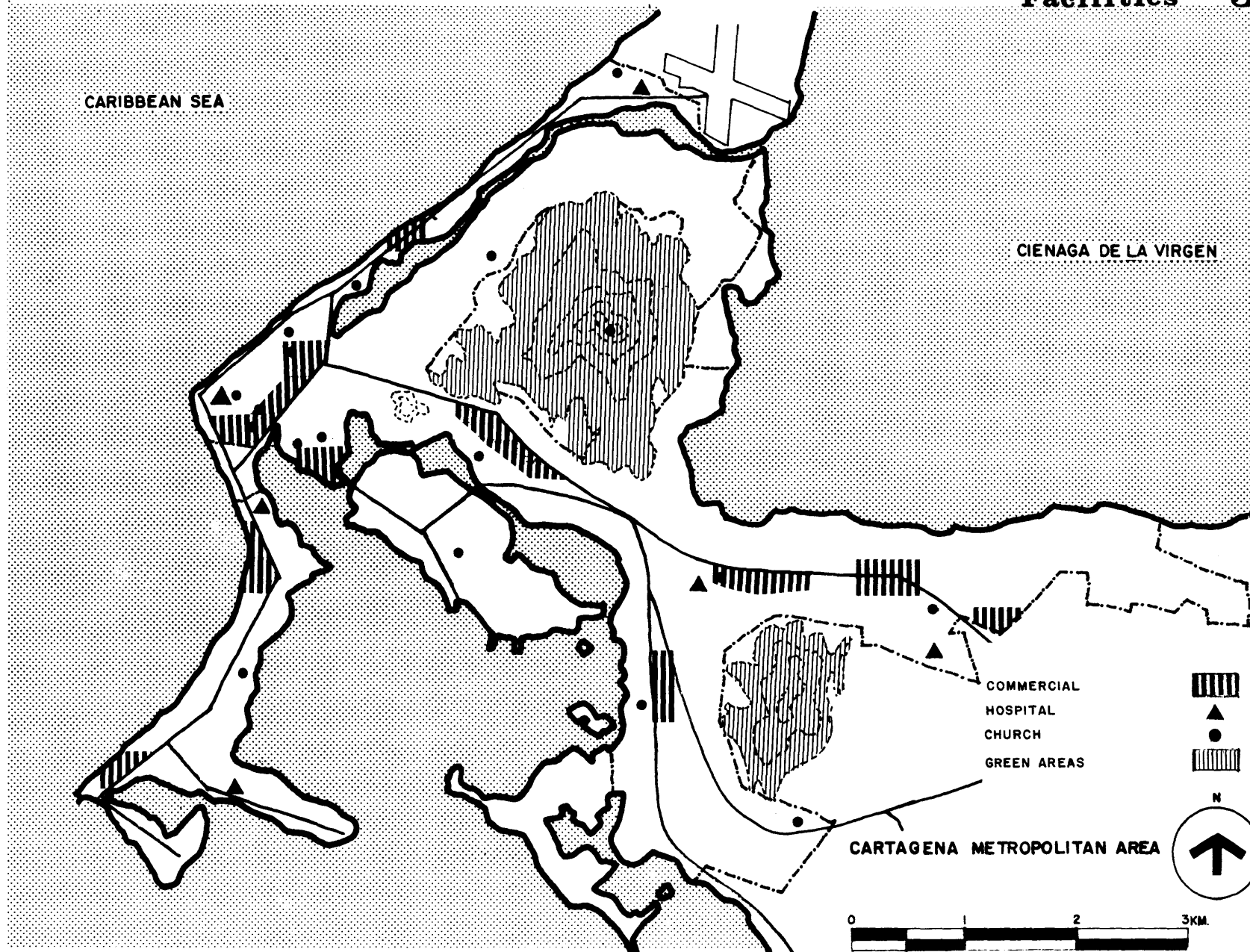
The "Income Levels," "Density," and "Utilities" maps, coincide in clearly defining different physical environments for different income groups. Thirty percent of the urban area is composed of "Tugurios" lacking most types of services and facilities. These slums are located in "out of bounds" places such as flood areas, hillsides, etc.

Cartagena is considered to have the highest percentage of slums of the large Colombian cities, with 17,000 slum dwellings out of a total of 32,000 dwellings; 218 Ha. occupied by slums out of a total of 743 urbanized Ha. (there are 962 Ha. for housing, but 219 Ha. are not built) and approximately 84,000 inhabitants live in slums, i.e., 50 percent of the total urban population.¹²

EMPLOYMENT & INCOME



Facilities 3



<u>Education</u> ¹⁴		University of Cartagena's composition ¹⁵		
Population, 1965	250,000 inhab.	(1962)		
School age population (17%)	42,500 children	<u>TOTAL</u>	<u>Men</u>	<u>Women</u>
School capacity	33,000 children	Law	134	119
Not attending school (22%)	9,500 children	Economy	80	72
		Engineering	191	190
		Medicine	291	283
		Dentistry	118	96
		Others	<u>88</u>	<u>60</u>
		TOTAL	902	820
				82

Cartagena's population has suffered through the years of endemic health problems, mainly caused by the stagnated ponds as their access to the sea has been filled. (Previous invaders failed to take Cartagena because of the number of soldiers lost to malaria, dysentery, etc.)

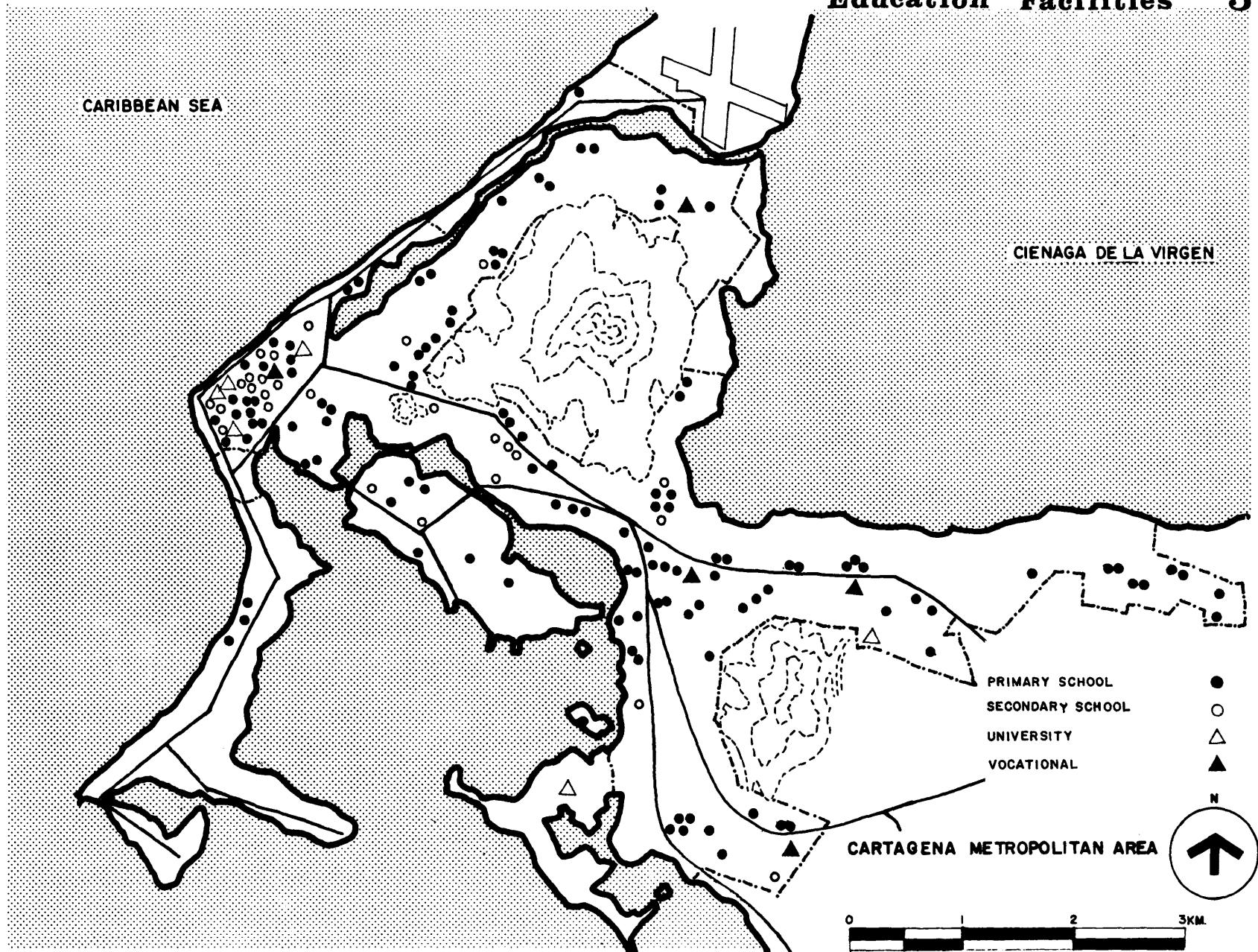
Health

Presently, Cartagena has five hospitals, eight clinics, and ten medical centers. It has been proposed to divide the city in three sectors, each controlled by a hospital and serving 100,000 inhabitants.¹⁶ The medical centers and clinics would be under the jurisdiction of the hospitals to avoid the present disorganized state and duplicity of services. It is difficult to find adequate health statistics for the city. Therefore, statistics for Colombia are used for reference: in 1970, there were 447 inhabitants per hospital bed, and 2,286 inhabitants per physician.¹⁷

Transportation

Most public transportation is handled by buses. Cartagena does not take advantage of its water system. Due to the city's topography, the main roads converge in certain locations causing serious traffic congestion. Congestion is further aggravated by the

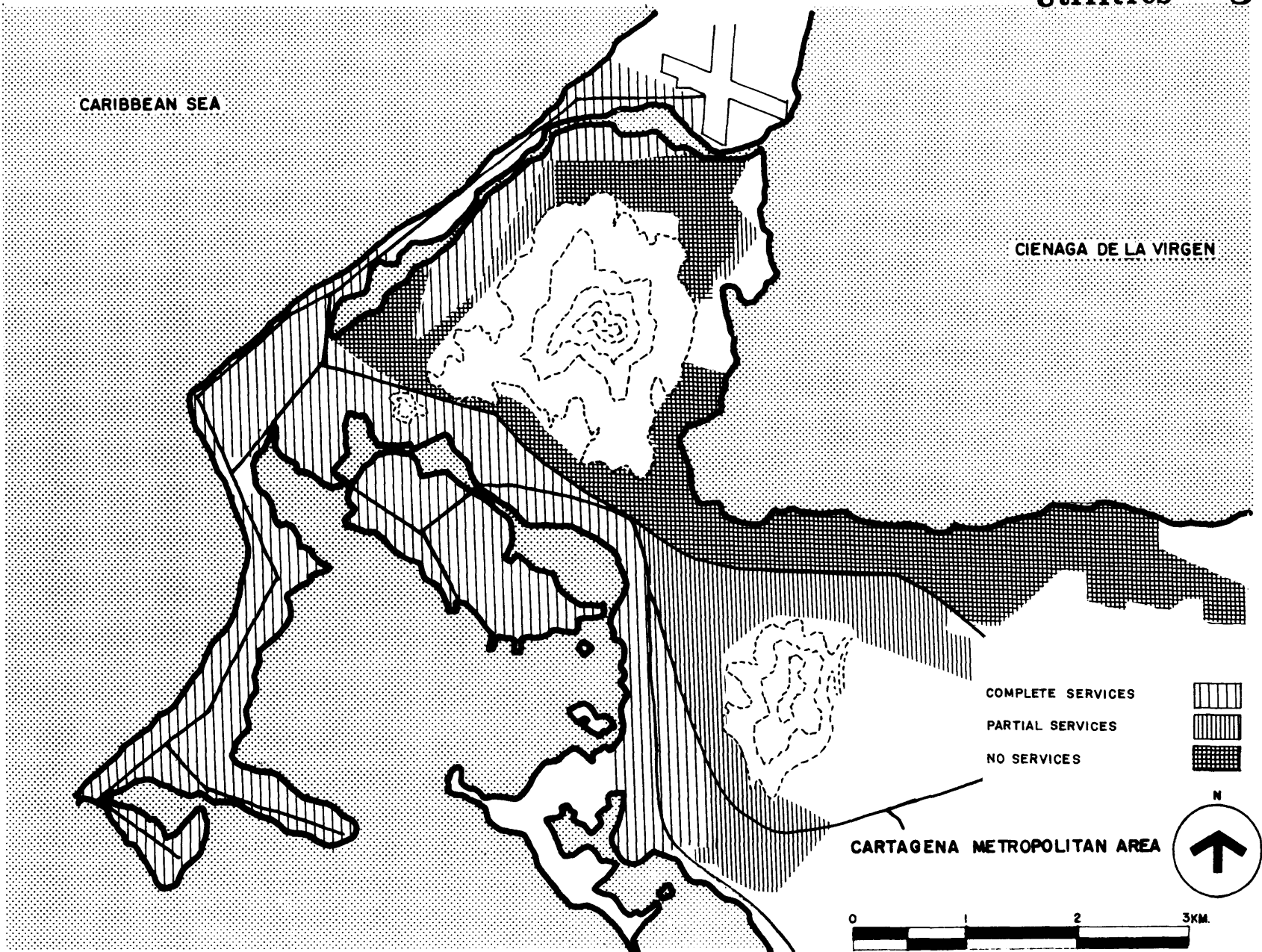
Education Facilities 3



commercial activities which take place on the main arteries. The available alternatives are to enforce the existing traffic regulations and make better use of the existing network, i.e., limited access to highways and removal of commerce from major streets and traffic nodes. The bus system can also be improved as at present it is uncoordinated. Public transport in Colombia belongs, in most cases, to private companies and/or monopolies.

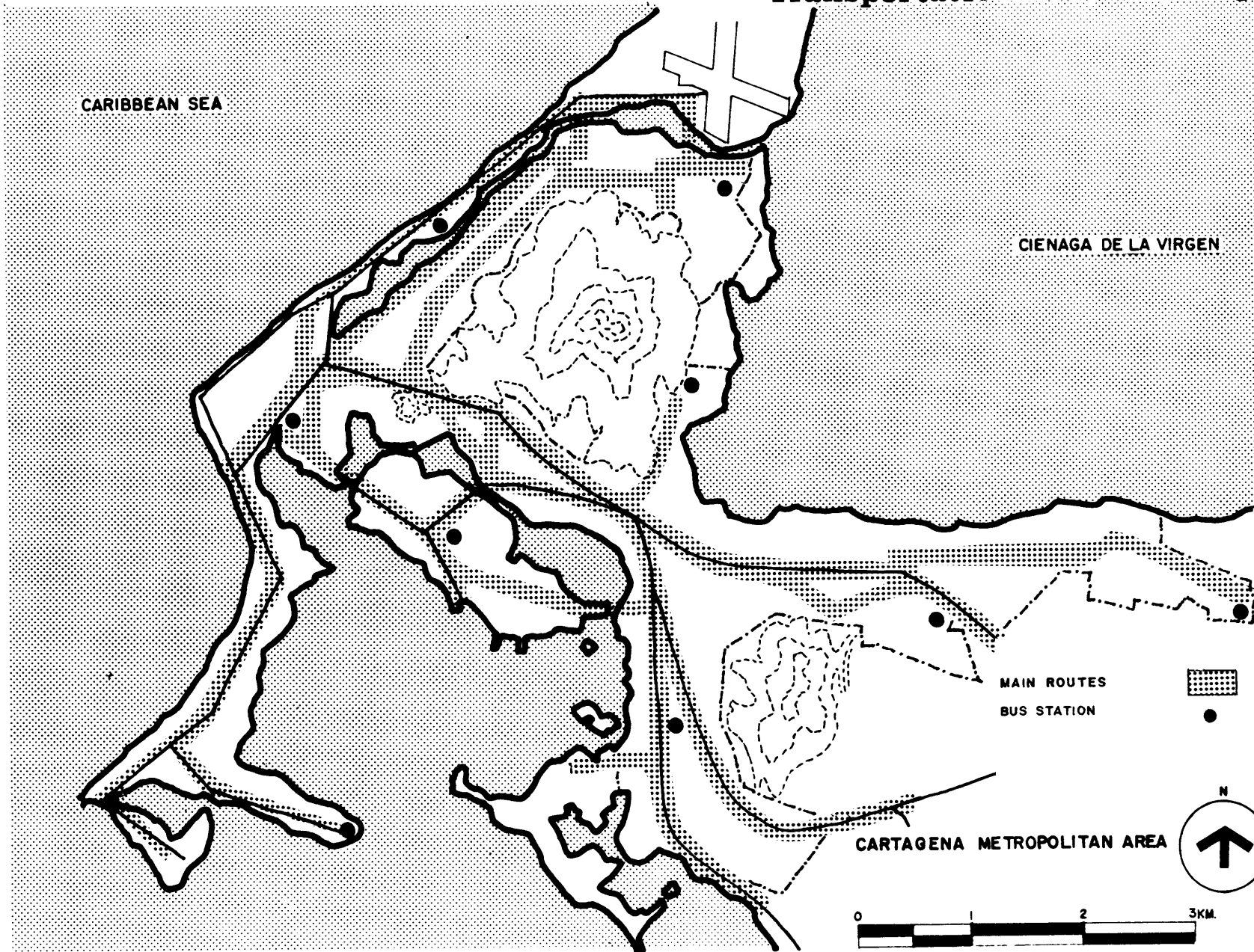
UTILITIES

- Sewage: The sewage system of Cartagena now serves 50 percent of the population. The remaining areas either have septic tanks, latrines, or throw their raw sewage into the lagoons, the bay, or the Cienaga. Until now, the danger of water pollution had not become critical, but recent studies point to the danger that this untreated sewage represents in contaminating the water system.
- Water: This service is provided to most of the population either at the dwelling or in local public fountains. The water is pumped from a canal connecting the bay with the Magdalena River.
- Electricity: This service is provided legally or illegally (from connections made to existing power lines) to almost all of the population.¹³





Transportation Network 3



Context: **HOUSING - CARTAGENA**

Content: CARTAGENA'S ZONING PLAN
HOUSING INVENTORY
HOUSING DEFICIT

Zoning Plan¹

According to the city's development plan done by the Instituto Agustin Codazzi, in 1965 (with estimates and projections until 1980), the urban renewal programs can be classified in four main groups:

1. Areas of zoning changes
2. Areas to be rehabilitated
3. Areas to be eradicated
4. Areas without change

1. Areas to be zoned differently: basically adequate areas which, due to the urban growth or other socio-economic changes, should have their zoning changed before deterioration as a result of conflicting activities. Such cases are the areas in which incompatible activities take place in the same neighborhood (i.e., industry and housing). Approximately 20 percent of the urban area is in this category.

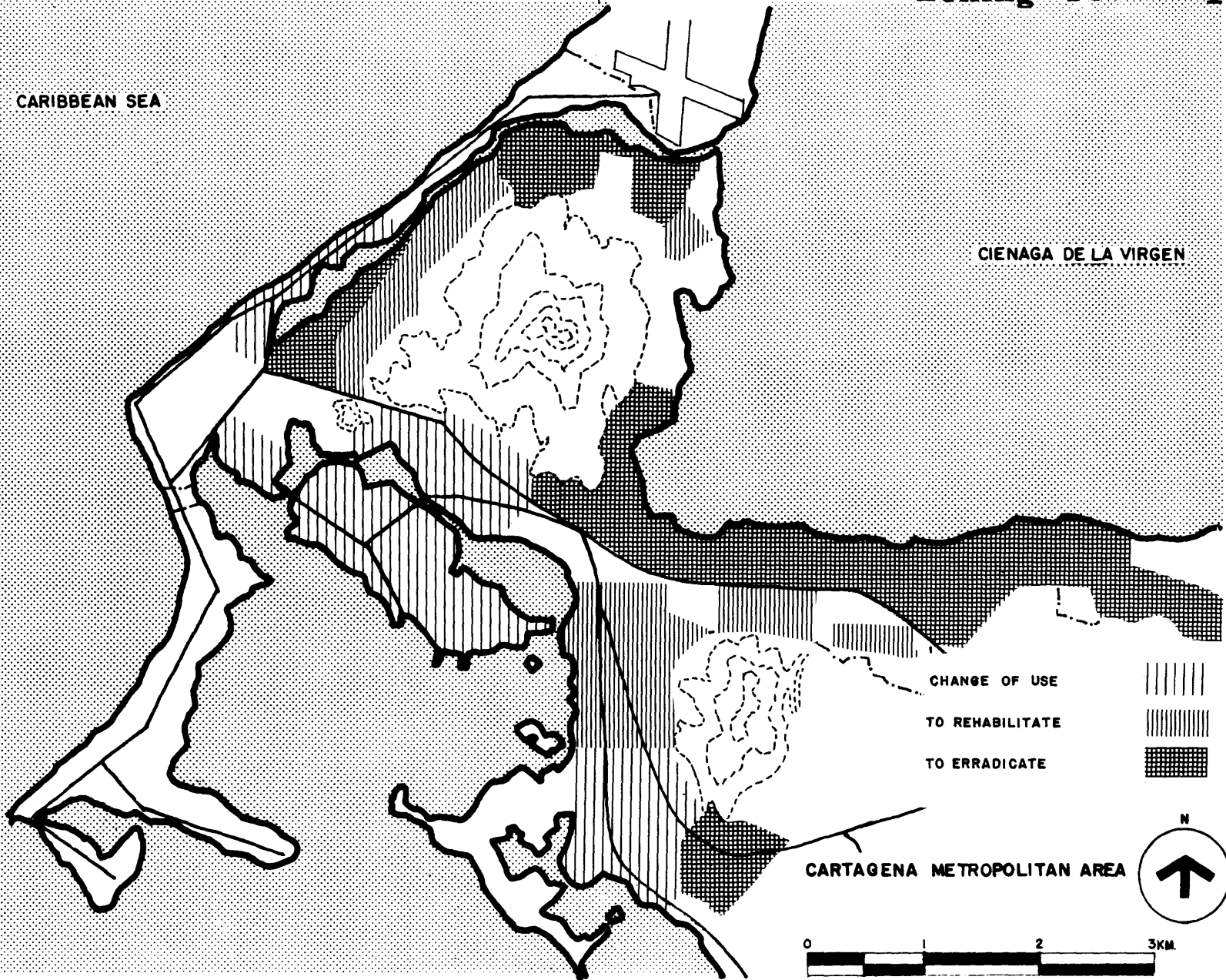
2. Areas to be rehabilitated: zones in the process of deterioration which could be saved by the implementation of minimum requirements such as infrastructure, facilities, density regulations, traffic organization, etc. These areas are mainly concentrated parallel to the major roads connecting Cartagena with other regions and comprise approximately 35 percent of the urban area.

3. Areas to be eradicated: composed of urban zones which could not be urbanized effectively due to topographic conditions or the high cost involved in providing them with services, but which were invaded or bought illegally from land speculators and which developed into slums. Some could be rehabilitated, but major infrastructure works and land fill would have to take place prior to any construction activities.

Zoning Plan 4

CARIBBEAN SEA

CIENAGA DE LA VIRGEN



This action requires the demolition and temporary or permanent removal of the existing families and their belongings. Such cases are the flood areas, steep slopes, or, in a few cases, neighborhoods impeding transportation or social program expansions (such as extension of hospital facilities, street continuation, etc.). These areas represent approximately 25 percent of the urban area.

4. Areas to be left in their present state: healthy areas which satisfy most of the urban requirements in terms of density, services, facilities, etc., and do not require any type of modification. they represent 20 percent of the urban area.

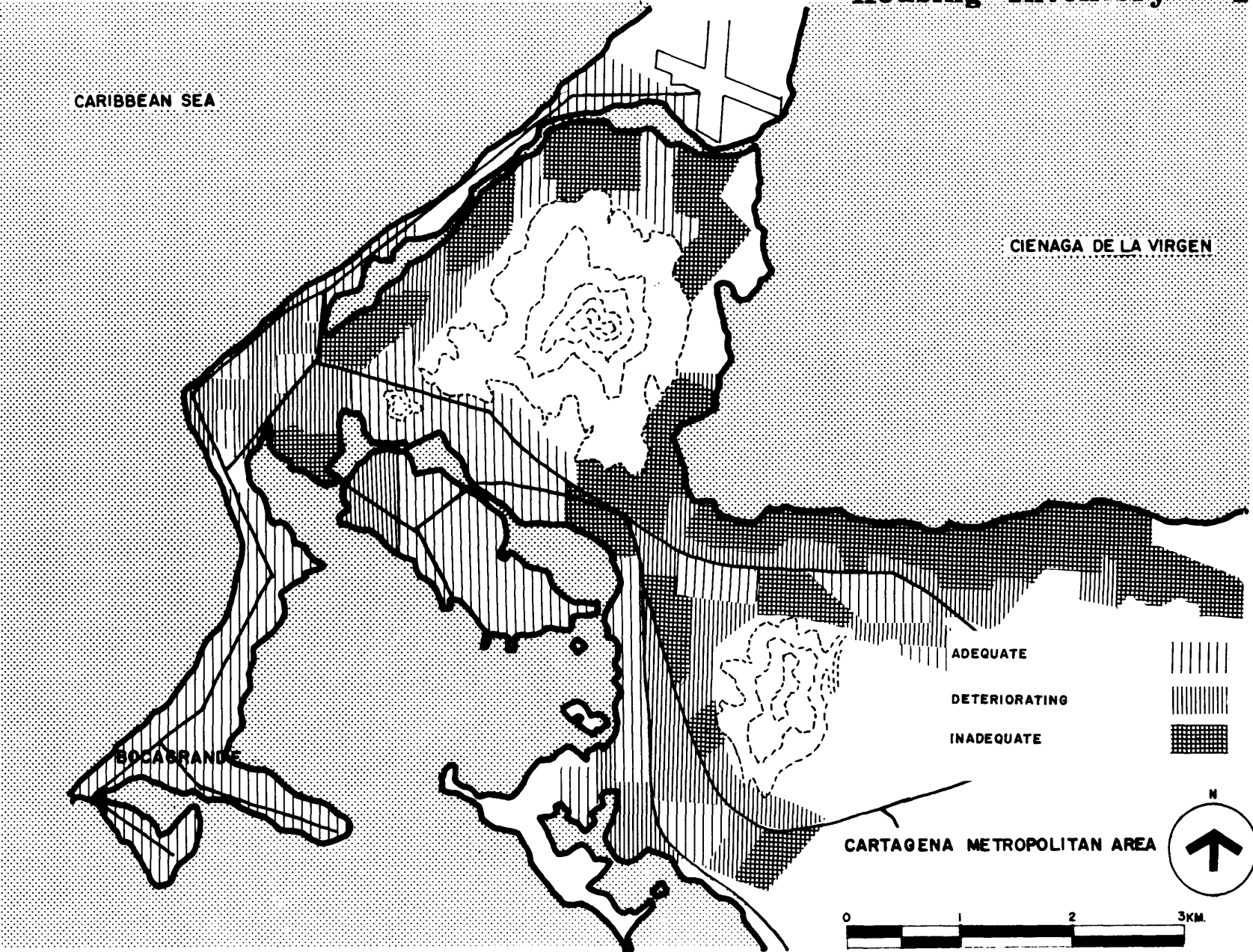
THE HOUSING SITUATION

Cartagena acts as the regional pole of development of the Department of Bolivar on account of its harbor facilities, tourist industry, and sources of employment. As a result, it has become the receptive center for the migrant population of the Department. This large migrant population implies low incomes as they are mostly self-employed, underemployed, temporarily employed and, only in very few cases, the head of the family has a steady job. The chronic unemployment rate fluctuates around 13 percent.²

With the exception of the high-income sector occupying the peninsula of Bocagrande (see map), the rest of the city has a surprisingly high heterogeneity of income groups living in the same neighborhoods.

The housing deficit for the low-income groups which, at present, is already very high (42 percent of the families in Cartagena lack a dwelling) grows at a rate of

Housing Inventory 4

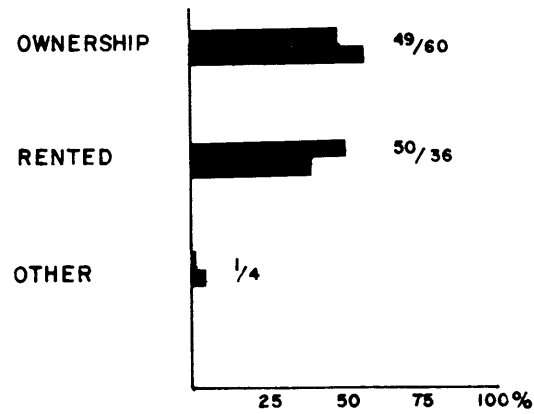


15 percent a year.³ This growth, coupled with the low purchasing power of these families casts a doubt on a possible solution unless the current government emphasis on providing a finished house for every family is more realistically viewed and a different approach undertaken. At the same time that the Housing Institute provides 100 houses, at great detriment to its financial capacity and cost to its clients, there are approximately 700 squatter dwellings being built in the same period.⁴

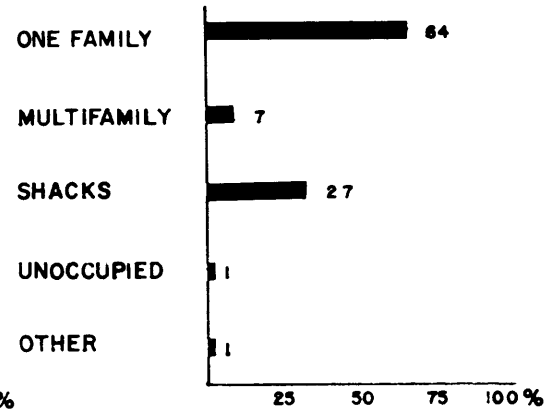
The proportion of owned versus rented dwellings remains constant and independent of the incomes of the families, that is, approximately 60 percent of the dwellings are owned and about 40 percent rented throughout the city of Cartagena. This correlates with a housing survey taken in 1970, which found that the house is not one of the most pressing needs in the family's priorities.⁵

Cartagena's Housing 4

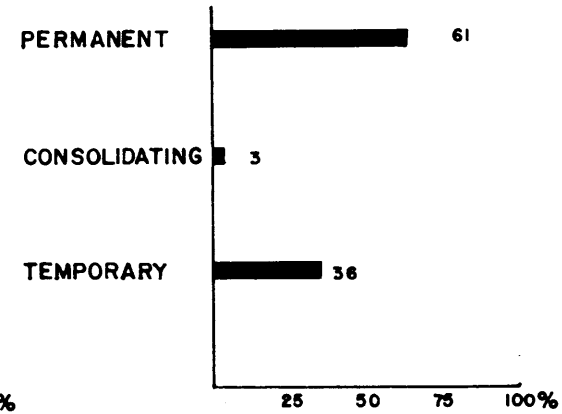
HOUSING TENURE 1951/64



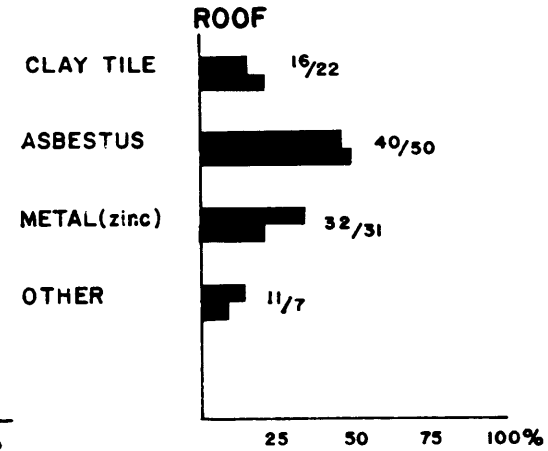
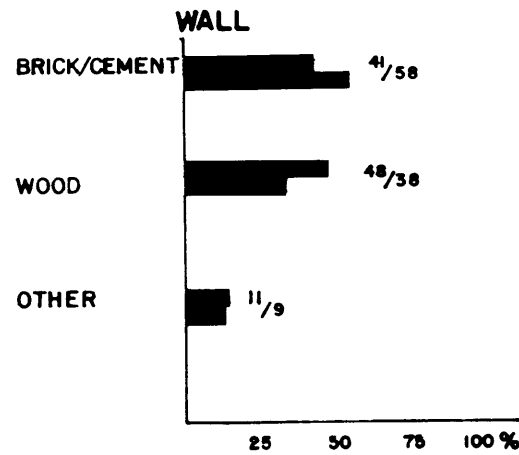
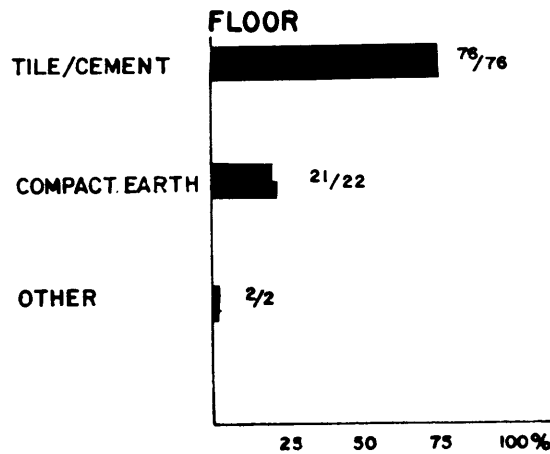
HOUSING TYPES 1964



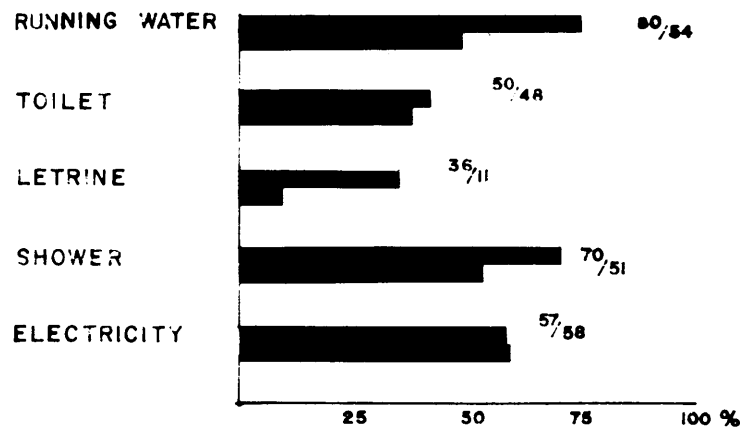
CONSTRUCTION STOCK 1964



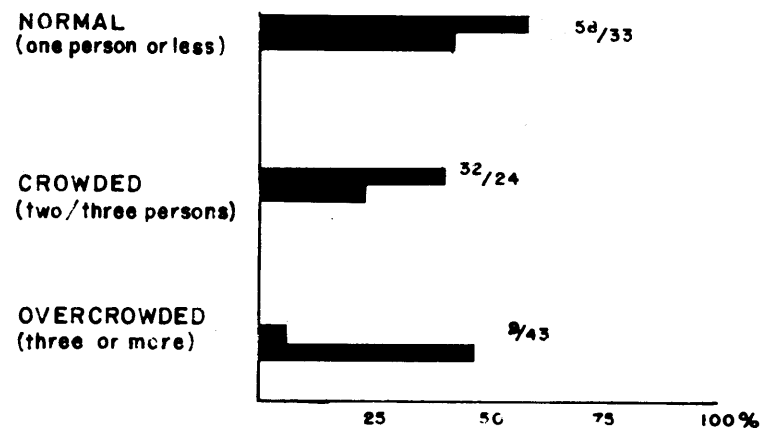
HOUSING MATERIALS 1951/64



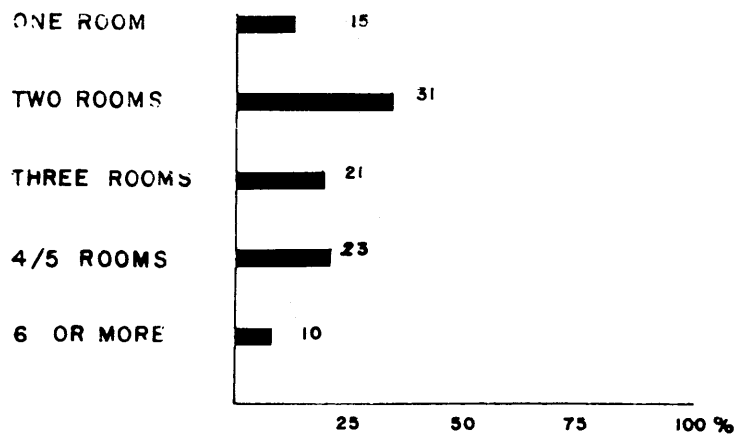
HOUSING SERVICES 1951/64



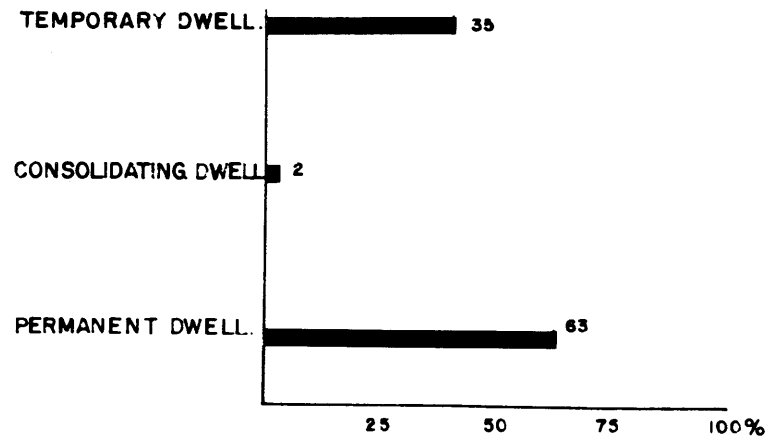
ROOM OCCUPANCY 1954/64



NUMBER OF ROOMS/DWELLING 1964.

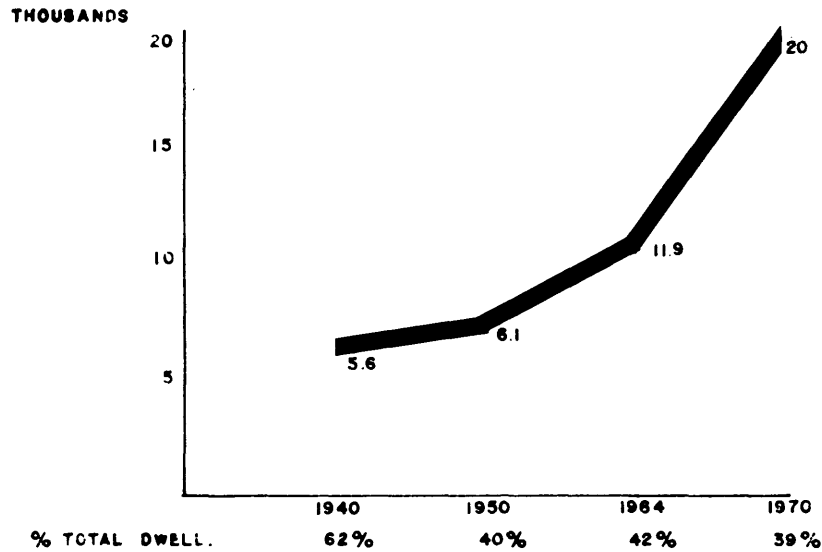


INHABITANTS/CONSTRUCTION STOCK 1964

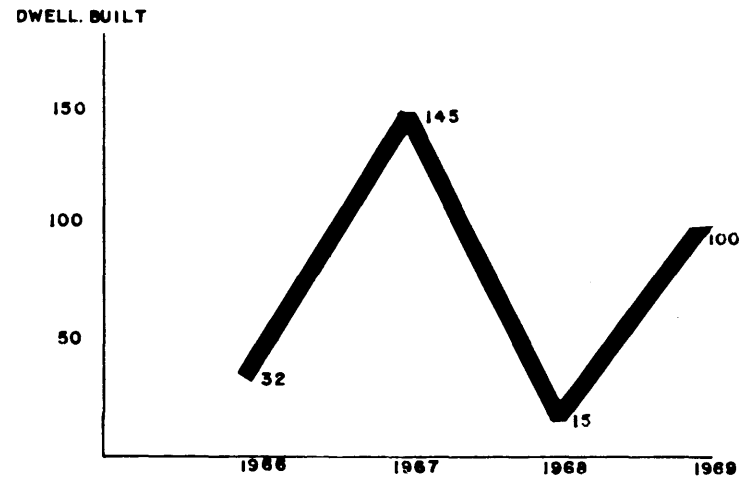


Housing Deficit⁷ 4

CARTAGENA'S HOUSING DEFICIT



ICT PROGRAMS IN CARTAGENA 1966-1970



Housing Deficit: 1967

Families requiring a dwelling	39,145
Existing number of dwellings	<u>28,716</u>
Quantitative deficit	10,429 or 25% of needed dwellings
Substandard dwellings	<u>1,721</u>
Total	12,150 or 42% of total of dwellings

Context: **BARRIADAS**

Content: CHARACTERISTICS OF THE CULTURE OF POVERTY
TRADITIONAL VIEWS ON BARRIADAS
THE DYNAMICS OF NEW BARRIADAS
ECONOMIC FACTORS
SOCIAL ORGANIZATION
COMMUNITY ISSUES
COMMUNITY ACTION PROGRAMS
COMPONENTS OF SQUATTING
SUMMARY

THE "BARRIADAS" OR SQUATTER SETTLEMENTS OF COLOMBIA

Main characteristics of the culture of poverty¹

- Demographic:
- a. High birth and mortality rates
 - b. Low life expectancy level
 - c. Large percentage of population under 15 years of age
 - d. High percentage of women and children in labor force
- Socio-Economic:
- a. State of continuous struggle for subsistence
 - b. Marginal participation in national policies, institutions and public systems
 - c. Low level of education
 - d. High degree of unemployment and under-employment
 - e. Large segment of the labor force involved in non-skilled, temporary jobs
 - f. Low wages
 - g. Lack of benefits from welfare or social security policies
 - h. Lack of savings and consequently reduced cash flow within the neighborhoods
 - i. Lack of food reserves translated in multiple shopping trips during the day
 - j. Informal local credit systems, i.e., large number of pawnbroker shops
 - k. Large market of second-hand goods
- Socio-Psychological
- a. High density and overcrowding
 - b. Lack of privacy
 - c. High incidence of alcoholism and tendency to solve problems through violence
 - d. High incidence of mistreatment of wife and children, a result of "authoritarianism"
 - e. Lack of traditional childhood
 - f. Early sexual experiences
 - g. Belief in male superiority
 - h. Large number of illegal marital unions
 - i. High number of abandoned wives and children
 - j. Importance of the mother within the household
 - k. Tendency toward predeterminism, resignation, and dependency
 - l. Short- versus long-term planning of family affairs
 - m. Tolerance of psychological pathology within the neighborhoods
 - n. Dislike and distrust of "outside authority," i.e., police, church, politicians, etc.

- Results at the individual level:
- a. Sense of marginality translated into superstitions, abandon, and dependency
 - b. Lack of identification with national concepts, history, and social systems
 - c. Lack of class consciousness and interest in politics
 - d. Belief in middle class values and status quo
 - e. Importance given to objects identified with social prestige (i.e., gadgets)

The "traditional view on Barriadas"

Barriadas have had negative connotations, i.e., unhealthy environmental conditions, a high degree of illnesses and malnutrition, family instability, lack of services and facilities, etc., all of which have led these neighborhoods to be seen as potential sources of violence. The middle and upper classes, the political system and all who, in one way or another, identify with the existing status quo, distrust the barriada and its inhabitants as the main element of political and social instability and as the major source of resentment and radicalism. This fear of the barriadas has led institutions to look into the housing conditions (the most apparent source of the problem) as the key element both causing the above-mentioned symptoms and through their improvement, the solution to the problem of "marginality." On the other hand, this marginality of a large percentage of the Colombian population has been accepted by the government as a stage in the process of development. The importation of capital and technical-intensive methods of production has increased the urban unemployment at the same time that "mass-media" have made living in the cities a goal for most rural families.

Although most barriadas do solve the shelter needs of the very low-income groups, their positive value is not material as such, rather it refers to the socio-economic systems developed within them in order for the families to survive. Such systems

deal with marketing of the land, procuring services, credit systems, labor pools, etc. Nevertheless, the housing issue continues to be seen by the government as the key element in integrating the marginal groups into the urban system although the private or government housing interests are neither compatible nor economically feasible for the people in the *barriadas*. Recently, it has become clearer that the problem is economic in nature and resembles the economic problem of the nation at large, that is, the existence of "exogenous forces" which have prevented the development of an autonomous economy while simultaneously destroying the indigenous methods.

The dynamism of *barriadas*--the result of a crisis organization

It is important to understand the difference between "*barriadas*" and other types of low-income slums. The *barriada* denotes a state of dynamism and autonomy with a high degree of community organization and participation. This feeling of group autonomy and self-sufficiency is the product of a crisis organization (the visualizing of goals with no legal ways of accomplishing them). Their solidarity is relative to the socio-political conflict between the authorities and the marginal group, but this solidarity has been mistakenly taken to be a stable situation when, in reality, it is a transitional stage on the road toward middle class values and goals. The system is only challenged when it interferes with the realization of new goals, and as community organization diminishes, self-sufficiency is shifted from the group to the individual. Competition between members of the *barrio* replace the concept of cooperation they previously shared. This stage can also be reached when land titles are given, or when the most pressing communal necessities have been solved (sewage, street filling, etc.) whereupon no special issues rally the community into action.

It also should not be surprising to find dynamic communities giving up hope after working for eight years to obtain the most basic services, while politicians promise "full package solutions" (house, utilities and facilities) in exchange for a vote. Before elections, the government, the opposition, and other institutions move very actively solving community needs. Through this power intrusion, they weaken the grass roots organization of the community. After the elections, the promises are usually not kept, but the internal organization has also collapsed with the consequent feelings of frustration, apathy and sense of futility. After many efforts, a new "Junta Comunal" (communal council) is formed, which, in turn, is cast aside in the following elections. It has only been in recent years that some of the marginal members have formed semi-political groups (i.e., "Pro-vivienda"), which do not share the apathy of the traditional slum-dweller. They have taken seriously the promises made by the politicians, and are willing to force solutions that can lead, in the best of cases, to hodge-podge concessions for, although they signify a political victory, they usually lack the physical and financial requirements vital for their success.

Therefore, the two existing alternatives at the end of the spectrum--dynamism versus stagnation--can lead to the same result: a decadent *barriada* which consolidates into a hopeless slum. This is why it is important to know at which stage in "the urbanization process" the "outside elements" (planners, architects, bureaucrats, etc.) could provide assistance. This stage usually is reached when the communal organization has accomplished its main objectives beyond which individualism will take precedence over communal interest.

The economic factors

The main issue, when dealing with *barriadas*, is one of income. In a recent study done

by the ICT (National Housing Institute), in 21 of the main Colombian cities, the following conclusions became apparent:²

1. 20 percent of the families in these cities have asked the ICT to solve their housing needs
2. the ICT has proposed a "minimal dwelling" to respond to the needs of the low-income families, the cost of which is approximately US\$1,500, payable in 20 years with an interest rate of 8 percent annually, plus 1 percent for insurance; this implies a monthly mortgage payment of \$14
3. ICT considers 25 percent of the family budget in the low-income sector to be available for housing
4. in order for the families to meet the mortgage payments, the minimum monthly income would have to be US\$50
5. according to the survey, 76 percent of the demanding families had an income lower than the required

Therefore, "minimal" housing is not a feasible solution to the low-income sector needs. Policies on income redistribution, urban and land reforms, and better employment opportunities are all closer to being better solutions than the design of minimum dwellings which indebt both the government and the recipients of such programs.

By invading unoccupied land, the barriada families have solved their housing needs without any investments in land or rent, thus allowing the families a minimal saving capacity.

The social organization in the barriadas

The studies done on barriadas reveal a high degree of community organization, a case which is not necessarily true of slums in general. Due to the large populations living in barriadas, a different social system independent of that of the middle classes

has developed. This is important as it takes advantage of old rural social structures clustered around similar traits or geographic backgrounds . Barriadas are recipient to two types of dwellers: direct migrants from rural areas, and families which are already acquainted with the "urban culture" who have lived in the downtown tenement houses, who are aware of the political system, who have understood the social pyramid, and who are in consolidation stages. The recent rural migrants are directly exposed to this ideology thereby shortening their acculturation. One of the first lessons they learn is the political power that results from their cohesiveness; this lesson is an incipient stage of class consciousness, which removes the last vestiges of individual apathy and allows for some of the residents to become potential agents of social change.

Issues with which the community identifies

1. The issue of property is the first common interest uniting the inhabitants. Most of the families agree on the fact that, although they have invaded the land, the improvements they have made upon it have to be recognized by the government in cases of relocation or rehabilitation programs.
2. The economic system of the barriadas also acts as a bonding issue, as it is personal, rather than institutionally oriented (as is the case of the national economic system, i.e., banks, etc.). It is based on corner shops, local lotteries, neighborhood fund raising activities, etc.; it maintains the self-awareness of the participants in relation to their communal and personal problems.
3. The common need to solve immediate environmental conditions acts as a further cohesive force.
4. Their awareness of the state of marginality in which they live in relation to the

city and the socio-political system at large. They also understand that whatever power they have is due to the size they represent if they remain as a coalition of interests and goals.

Community action programs

The degree of how dynamic a community is can be measured through the capacity for action of its members. In the *barriadas*, the community programs usually tackle the jobs of neighborhood improvement. These jobs are done voluntarily and in the spare time of the participants (usually at night and during the weekends). The most common projects are infrastructure layout and the construction of communal facilities.

Until now, the government has been willingly or unwillingly unable to assist in such projects as its major concern was the illegality of the neighborhoods. Therefore, most of the economical or technical help has been done through informal channels. (Cartagena being one of the few cities with an efficient governmental agency in charge of assisting the low-income sectors, *Oficina de Rehabilitacion de Tugurios*).

The main drawbacks to the community action programs have been:

1. Most participants are tired after the daily work and seek excuses for not participating in the projects.
2. Most of these programs have become politicized by the search for power of members within the community and by the search for votes by local or national politicians; to the extent that the programs end up being the antithesis of what they were originally intended to be. As such, community action programs have, at times, lost prestige in the eyes of the members of the communities and have neither been trusted nor worthy of involvement.
3. It is difficult to motivate a community to continue the programs once their most immediate necessities have been accomplished. Few examples exist of efficient community organizations which have remained active after the crisis situation that brought them together has been solved. The cases of Cuba-Chile or China are,

at present neither desired nor suggested examples by the governments, as it is difficult to disassociate them from their political connotations.

4. There exists a doubt about some of the cost/benefit results of community action programs in areas where technical know-how is imperative. Two main problems arise:
 - a. The time lapse required to accomplish any goals is very long.
 - b. The economic cost of the project, through self-help programs, can, at times, be higher than those using conventional systems.

The time lapse obstacle is important, as communities grow disenchanted if progress is not readily seen. As the work is only done on Saturdays and/or Sundays, the completion of the simplest task takes months or years. For a community of 700 families to provide itself with a sewer network, water and electrical services, and build the communal buildings and the initial stages of their dwellings, it can take over ten years, (as in Barrio La Perla in Puerto Rico or Policarpa Salavarrieta in Colombia, both of which were among the most dynamic communities in each country).

The second drawback is the economic cost:

In analytical terms, the two major costs involved in construction are materials and labor. In countries like Colombia, where there is a large supply of unskilled labor and where materials accepted by the codes and construction standards are industrially produced, the material factors represent approximately two-thirds of the total buildings costs. Through self-help programs, the community is optimizing savings in one-third of the building costs, while spending two or three times as much in the remaining two-thirds. This paradox results of the imposition of imported codes and standards upon the local materials and systems of construction.

In order for low-income families to obtain a construction permit necessary to get

loans, mortgages or municipal services, their dwellings must meet the code requirements. The materials involved are industrially produced and require a certain degree of technical know-how, at times foreign to the user, therefore, part of these materials are misused and wasted, raising the cost of construction above that if a contractor or mason had been called.³

Components of squatting⁴

Location. It is important to secure a location that will provide inexpensive access to the job market. Location also plays an important role in securing basic services due to proximity to existing networks (water, electricity, transportation).

Tenure. Closely linked with the shelter are the problems of securing tenure. Tenure is that legal or de-facto security that will justify initiating or continuing investments of time and money in the house and which provides the user with the control over the process of consolidation of his property. In most developing countries, property is also an important social indicator, where ownership acts as a vehicle for social mobility.

"The failures of the official projects based on the construction of dwelling units and the success of the "barriadas," show that the in-migration to improve and to invest in the surrounding development is proportional to the social security that these settlements offer to their occupants and not as assumed in the popular housing policies to the standards of physical comfort."⁵

Shelter. Economically speaking, the shelter represents a number of resources to a squatter family. Because it is their single most expensive possession and consumer of time and energy, it serves to focus the family's attention economically for some years to come. The financial commitment in this respect is stabilizing, and progress

is made on a pay-and-do-when-you-can basis. The investment in the shelter, if met with a sufficient level of tenure can establish the home as a source of income as many families rent out portions of their houses. An important aspect of a squatter's house is that it represents a totally self-determined environment, and, as such, it offers a positive solution to real housing needs. The squatter is quite capable of generating his own house design, for he knows the relationship and priorities he wants to establish.

Summary

Obstacles and accomplishments in the development of the barriadas:⁶

1. Since squatting takes place outside the normal planning process, it often creates impossible solutions in the provision of services and the logical extension of the city.
2. The lack of available jobs for non-skilled workers is partly caused by a low level of education and other obstacles created by bureaucratic red tape, i.e., the need of meaningless credentials.
3. Lack of coordination between existing manpower and available jobs is due to a mismatch of national policies in relation to employment, such as import of technical equipment, rather than labor-intensive productive methods. The government should also provide small industries in the barriadas with some sort of protection similar to those offered at the national level. The construction industry could be one of them. Concrete blocks, window frames, doors, tiles, etc., only require semi-skilled labor and could be located within the neighborhoods, themselves, and administered by local people with legal and managerial assistance only when needed. At present, the barriadas' attempts to generate such industries have failed as they lack the resources, marketing programs, and research methods available to the larger corporations.

4. The present type of centralist government is also an obstacle. Most of the large-scale projects (construction programs) are given to firms lobbying in the capital city. These firms find it easier and cheaper to transport machinery from one place to another than to be involved with local employment problems, thus reducing local employment opportunities.

5. Heavier priority is given by the government to educational institutions providing traditional professions (architecture, law, etc.) at the expense of vocational schools for blue-collar workers (plumbers, carpenters, electricians, etc.).

6. Lack of mechanisms for keeping the available cash within the neighborhoods; such as cooperatives, credit systems to self-employed people, drug and food subsidy programs (both of which take a heavy portion of the family's budget), etc.

7. The present tendency for politicians during elections to promise solutions in the neighborhoods weakens and, at times, destroys the grass-roots organizations within the communities, leading them to a state of dependency from institutional programs which are very limited.

8. The municipal budget is dependent on the local taxes and at the department level, on taxes on the consumption of goods. In both cases, the system's success is based on the existence of a large middle-class which is not the case of Colombia. At present, the largest part of the local budgets comes from the national government and is mainly to be used for health, education and public works programs. The public works agencies of each of the above-mentioned sectors usually have more power of action than the local institutions in charge of solving the problems; therefore, the programs reflect national priorities rather than local needs. A higher degree of autonomy at the regional level seems apparent, although there are doubts about the performance of the existing systems in each region, as political corruption, inefficiency "et al" are components of most administrative setups.

Accomplishments of the *barriadas*⁷:

1. The building of houses in spite of economic and legal obstacles.
2. Dwelling improvements in spite of the lack of legal ownership or assurance of permanence of their houses.
3. Efficient and effective "real estate operations" in spite of being outside of the legal market.
4. Efficient administration of the scarce resources in spite of minimum saving capacity and lack of monetary credit.

Context: **CIENAGA SECTOR**

Content: BRIEF DESCRIPTION
LOCATION
TOPOGRAPHY
POPULATION
NEIGHBORHOODS
GROWTH
UTILITIES AND FACILITIES
HOUSING
SOCIO-ECONOMIC CHARACTERISTICS

Cienaga Sector

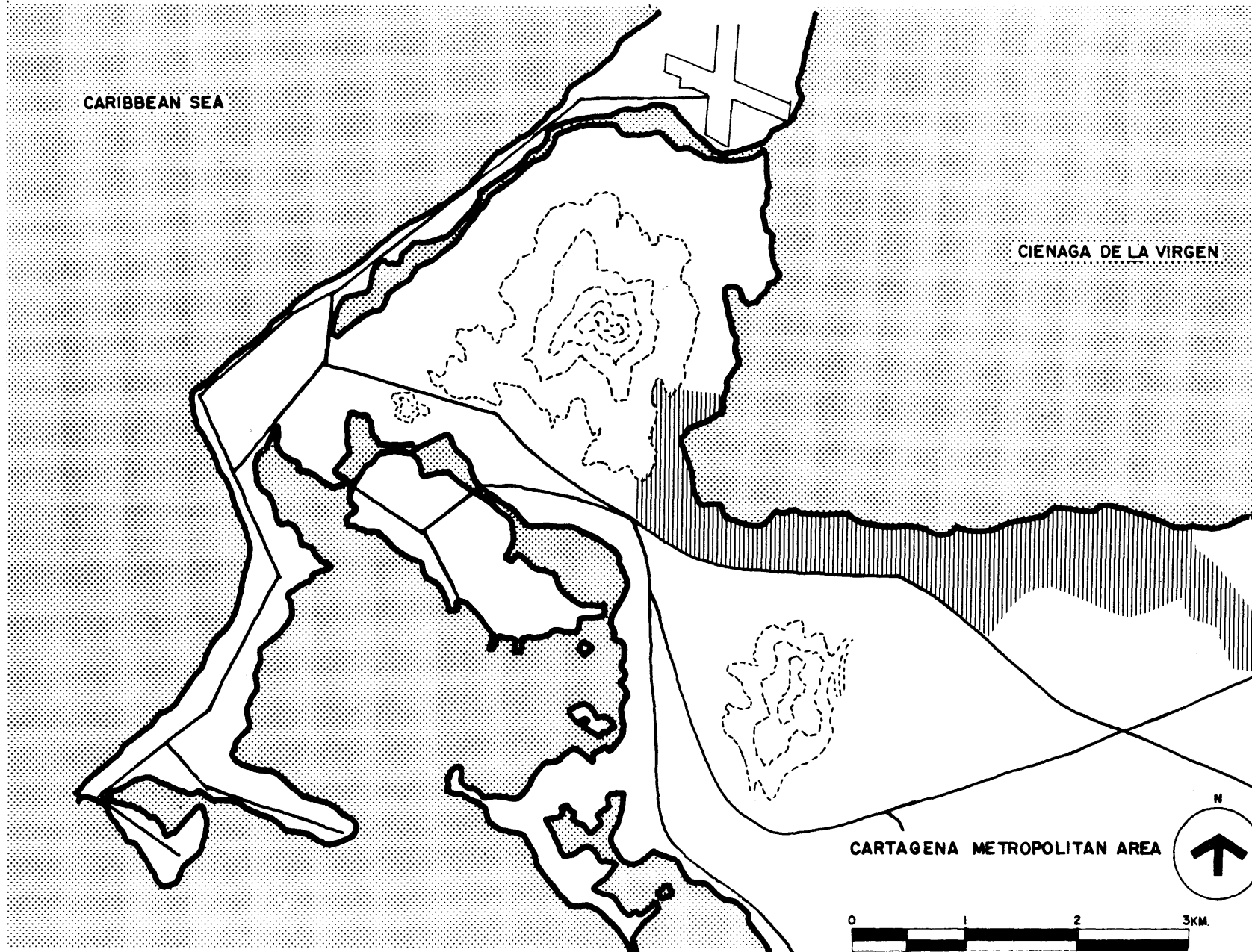
Brief description

The area to be investigated is a linear development on the southeast shore of the Cienaga de la Virgen. It extends 250 Ha. and is located 5 Km. from downtown Cartagena. This area is divided into ten "barrios" or neighborhoods, but the division responds more to the age of the neighborhood within the area than to differences in the characteristics of either the topography, the availability of services, or the socio-economic conditions of the people living there. The linear development expanded progressively. Its first neighborhood was established 25 years ago and is located 3.5 Km. from the downtown area. Its most recent neighborhood is only six years old and is located 8.5 Km. from the downtown area (bordering the city limits).

The reason for this sporadic growth is that most of the actual neighborhoods were initiated by invasion of the land. The land around the Cienaga is public property and is located away from major traffic roads or from frequented facilities such as hospitals or airports. (This guaranteed, to a certain extent, the success of the invasion. The city had more pressing problems closer to its core, as some of its best land five minutes away from the downtown area had been invaded by 700 families.) Once the success of the first invasions became known (in terms of permanence), the other invasions took place progressively. In 1971, this area contained 7,593 dwellings or 22 percent of the total number of dwellings in Cartagena.¹

Two of these neighborhoods will be studied in detail: Barrio Candelaria, established 15 years ago, and Barrio Fredonia, established six years ago. The former is one of the oldest, while the latter is the most recent one. Its organizations, housing situation, socio-economic characteristics, etc., will give a clearer background of this area and its people.

Location 6



TOPOGRAPHY

Most of the soil in the zone is sand and clay. Toward the Cienaga, the soil becomes slime; the remaining part is composed of clay. Neither of these two types of soil permits high-rise construction. The soil supports only one-story dwellings without incurring prohibitive expenses.

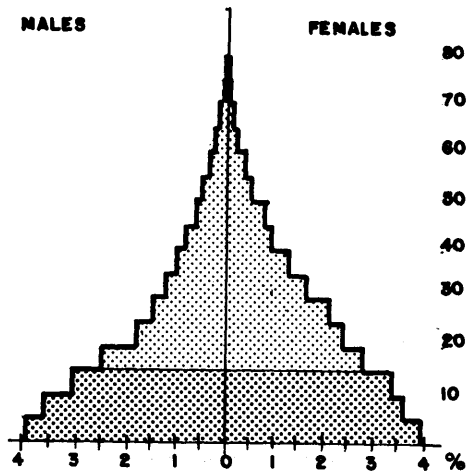
The level of the banks of the Cienaga range from 0.30 to 0.40 centimeters and only a small part of the sector reaches the height of 1.00 meter. Due to technical requirements of the sewage and drainage systems, it is recommended that the minimum height above the Cienaga level should be 1.50 meters. (The cost of filling the area between the existing 1.00 meter level and the bank of the Cienaga is estimated at US\$1,325,000 by Alberto Villegas in July 1969.)²

POPULATION

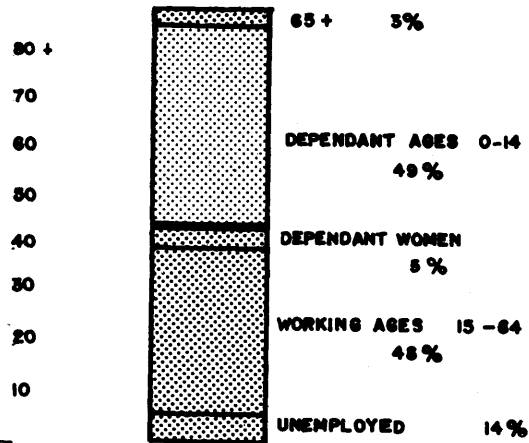
The population of the zone in 1964 was 48,783 persons with a density of 196 persons/Ha. In 1971, this population was estimated to be 71,745 persons with a density of 257.28 persons/Ha. (A new barrio had also been established.) The average number of persons per family amounted to 5.6. Every economically active member of the population supports 4.8 persons. Of the 48 percent economically active population, five percent are non-working females and 14 percent are people with cronic unemployment. Therefore, 29 percent of the total population is economically dependent on 71 percent.³

Population 6

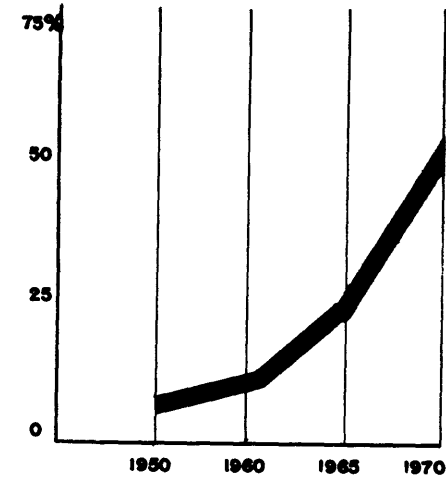
POPULATION PYRAMID



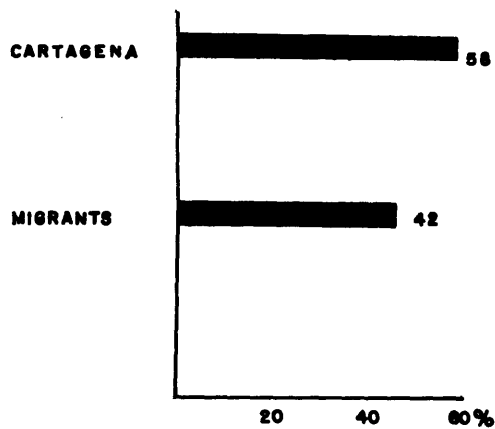
DEPENDENCY LOADS



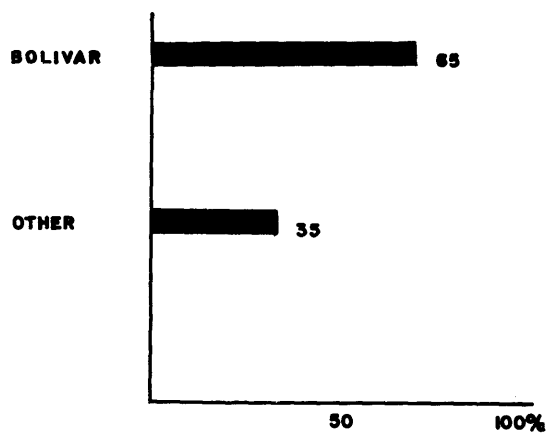
MIGRATION GROWTH



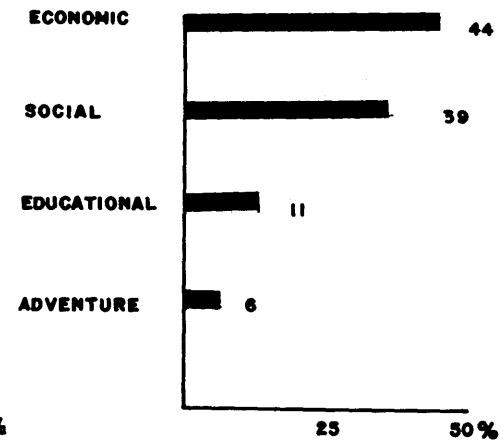
ORIGIN OF POPULATION



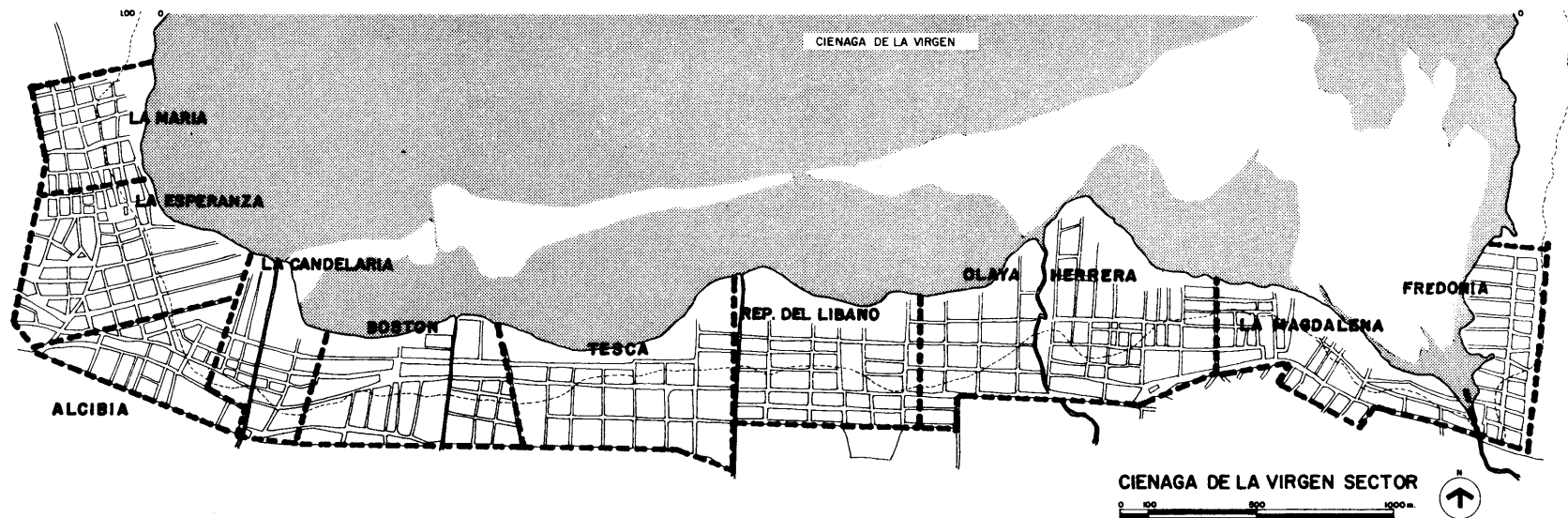
ORIGIN OF MIGRANTS



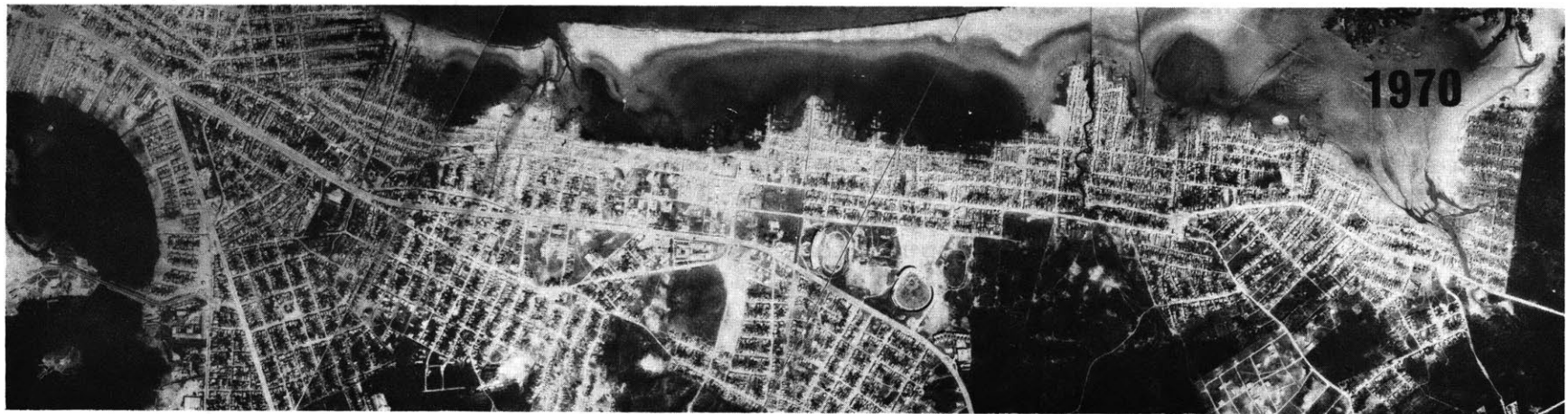
REASON TO MIGRATE

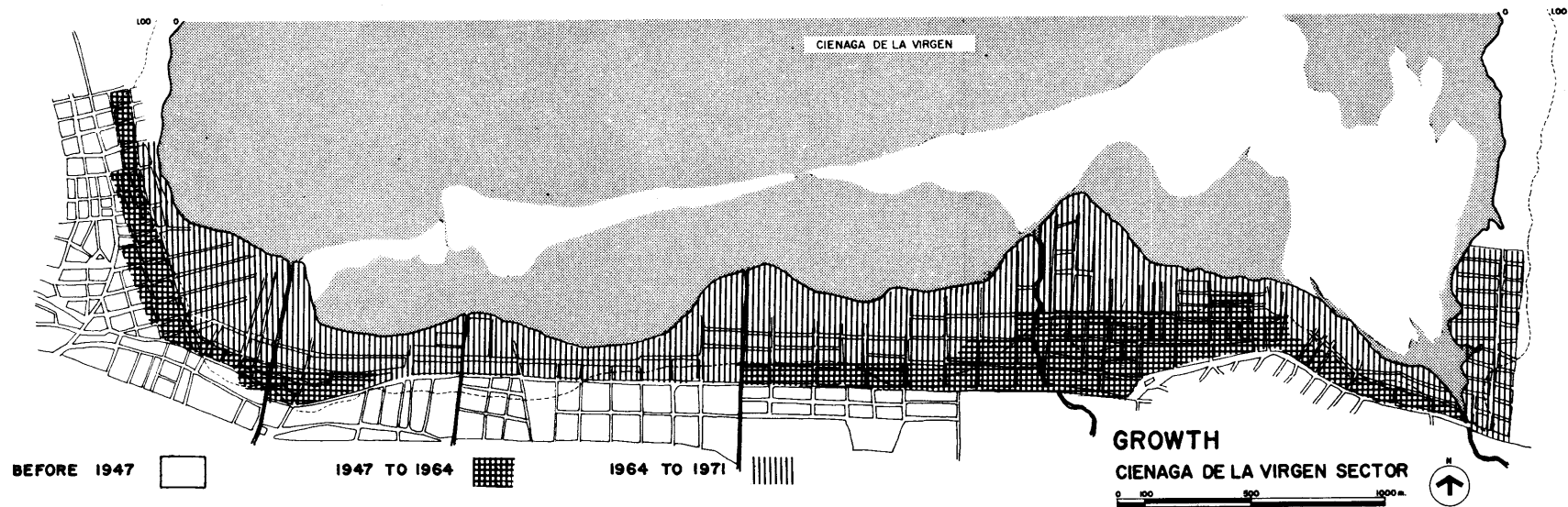


The Sector



NEIGHBORHOOD ⁴	POPULATION 1964	POPULATION 1971	EXISTING DWELLINGS	AREA (HA.)	DENSITY
LA MARIA	1.648	3.836	548	15.05	253.53
LA ESPERANZA	8.129	3.744	624	28.75	133.00
LA CANDELARIA	3.158	3.955	527	12.25	329.00
ALCIBIA	3.359	6.838	834	21.85	325.00
BOSTON	7.132	9.126	1.018	28.80	325.76
TESCA	3.459	3.456	576	30.88	108.64
REP. DEL LIBANO	4.010	1.379	198	20.00	68.00
OLAYA HERRERA	10.370	29.153	2.579	57.20	509.61
LA MAGDALENA	3.518	1.062	177	16.25	66.00
FREDONIA	NON EXISTENT	3.317	512	17.50	195.00
TOTAL	.44783	65.806	7.593	248.53	INH./HA. 265



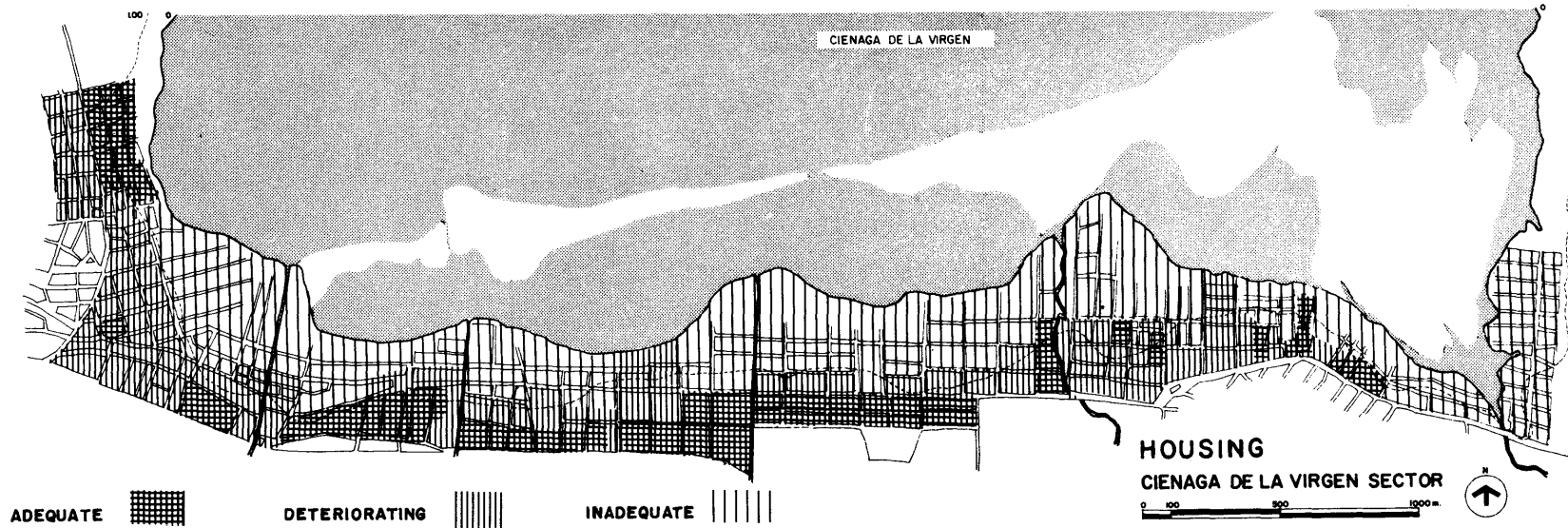


UTILITIES AND FACILITIES

Sewage. The technical, economical and administrative constraints of installation have postponed any municipal or national plan of implementation. At present, the sewage is dumped into streams, ditches or directly into the Cienaga, creating water and environmental pollution and the health hazards present in the whole sector. Any efforts so far to solve the sewage problem have been done through "self-help programs" of which one of the most successful has been Fredonia (to be taken as a case study).

Water. This utility is partially available to the older neighborhoods. For the others it represents one of the major expenses in the family's daily budget. The water is taken home in cans, buckets, etc., and costs up to US 25 cents for two gallons, or 5 cents per can. This water is not pure and is one of the main sources for the endemic illnesses common to this population. Recently, communal water taps have been installed by the government alleviating, in part, the water problem.

Electricity. This utility is not available as a municipal service, but it presents the least amount of technical skill to obtain it; most of the residents have "borrowed" it from existing power lines. Obviously, this "plugging into the system" creates voltage problems, fire hazards, and other unnecessary problems, as Cartagena has enough electrical capacity to provide this service. (This would aid those families who derive their income from activities requiring the use of electrical machines.)



Communications. Until 1970, there were only 49 telephones (of which two were public) serving the 9,000 families, and all 49 were located in the three oldest neighborhoods. None of the streets north of the Avenue Pedro de Heredia are paved, and some are subject to frequent flooding, impeding vehicular access to the dwellings. The improvements made until now have been done through self-help programs and technical assistance from the slum rehabilitation office.

Commerce. There is, within the Cienaga sector, a wide distribution of small stores which satisfy the daily needs of the families and provide a credit system. Due to the limited available cash, a housewife might go shopping two or more times a day to buy what is needed for the next couple of hours

Most of the neighborhoods also have small repair shops, i.e., there are six auto body repair garages, two T.V. and radio service shops, and a variety of carpentries, shoe and dress makers, etc.

Recreation. The whole sector only has two unused spaces which are declared to be parks by the municipal authorities but are so small that they serve little purpose.

Access. The main access to the Cienaga is via the Avenue Pedro de Heredia, a major traffic artery connecting the eastern part of the city with downtown. This avenue has a bus service which is the only public transportation available. Due to traffic congestion, a trip downtown can take up to an hour each way and costs about US 3 cents one way.

Socio- Economic Characteristics

Income and Employment

The average income among the families of the sector ranges between US\$25 and \$50 a month. Apparently, the income and education are interrelated as 80 percent of the population has had only primary education. The charts present other factors which contribute to the state of marginality most of these families experience. Although according to the housing survey of 1970⁵, 91 percent of the household heads were employed, and only 9 percent were unemployed, these figures represent very vague definitions of employment and unemployment. The high percentage of employment responds more to a situation of underemployment or self-employment.

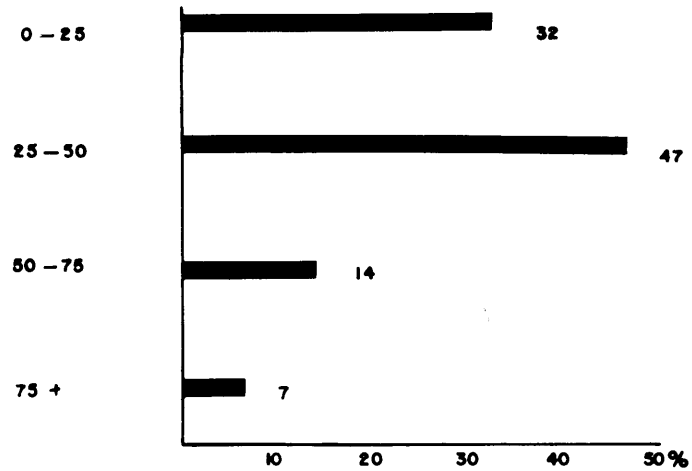
The following are examples of self-employment jobs in the "commercial sector" for the Cienaga families:⁶

Owners of corner stores in the neighborhoods:	5%
Owners of small businesses in the market place:	10%
Street vendors (cigarettes, black market) :	40%
Market vendors earning a commission on sales:	20%
Other (small repair shops, shoemakers, etc.):	25%

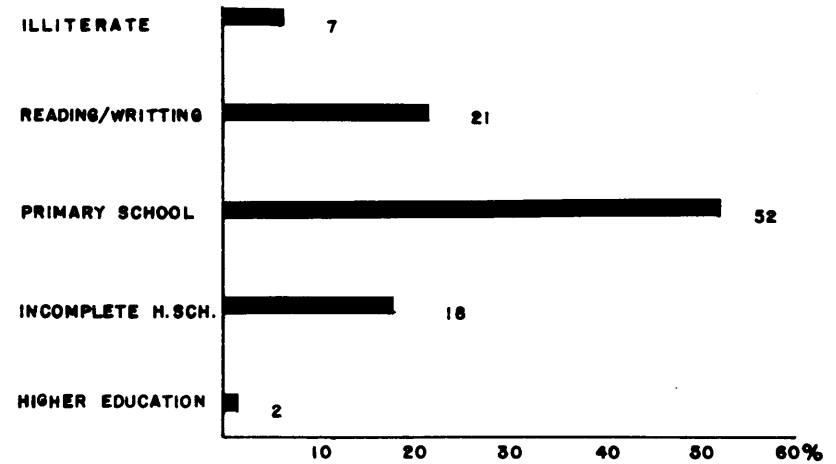
A more correct estimate of employed heads of families would be 29 percent. That is to say, that of the 91 percent of employable people, 61 percent are underemployed and 10 percent are unemployed. (Thirty-eight percent of the total employed people work on a daily basis.)⁷

Socio-Economic⁸ 6

FAMILY MONTHLY INCOME (US \$)



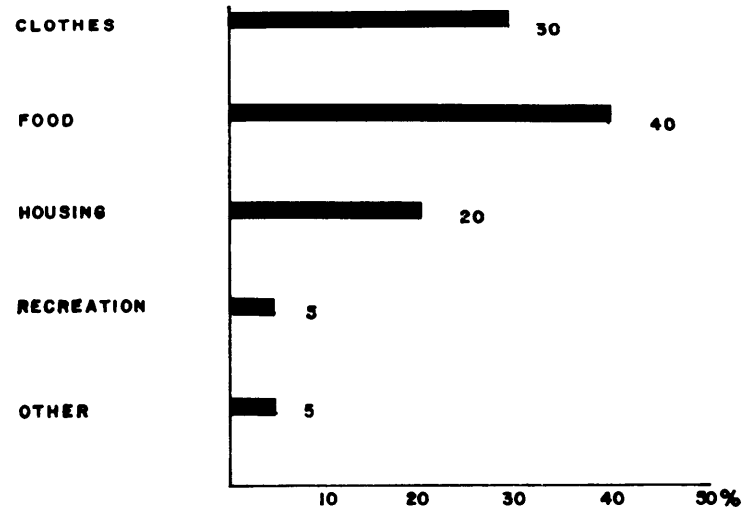
EDUCATIONAL LEVEL



EMPLOYMENT DISTRIBUTION.



FAMILY BUDGET DISTRIBUTION



Obstacles responsible for unemployment

The marginal existence based on daily uncertainties about tomorrow have induced in the population a sense of apathy which can be translated in their beliefs that the conditions necessary to overcome their present situation are dependent upon:⁹

1. Destiny: 25 percent of the population has faith in lotteries, horoscopes, fortune tellers, etc., as the way to improve their situation
2. Social positions: 30 percent of the population believes in a rigid social structure as the limiting factor to their progress. This belief has developed into an inferiority complex
3. "Leverage": 40 percent of the population sees political, economical, or social "pulls" as their solution. The way to attain them is through "connections." Most of these families give a high priority to having a child be a godson to an "important" member of society (whether at the local or national level).
4. Personal effort: only 5 percent of the population is confident on their own capacity to overcome their present state of marginality.

Other indications given by these families to explain the difficulty in obtaining good jobs:¹⁰

- 35 percent of the household heads attributed their unemployment or underemployment to lack of jobs regardless of their capacity, skills, and education
- 16 percent blamed their lack of connections as their major obstacle in getting a good job
- 22 percent lacked "adequate documentation," i.e., military service certificate and, therefore, were automatically rejected from official jobs (those within the legal labor market)
- 27 percent had other reasons

When asked which was the major problem they faced in accomplishing their desires or goals:¹¹

- 41% replied low incomes
- 27% " unemployment
- 9% " lack of training
- 6% " lack of communal organization
- 5% " personal indifference
- 4% " lack of documentation
- 4% " sickness
- 3% " no answer
- 1% " lack of adequate housing and transport

The resulting apathy of the people is not favorable to the traditional "entrepreneurial" success through hard work. Instead, it reinforces the dependence of the families on myths and predeterminism. It accepts with resignation the existing situation and removes from view any opportunities for change.

Socio-political problems

Only very recently have these communities demanded action on the part of the political and social systems. Unfortunately, the system only seems to respond when confronted with a potentially "violent situation" and then only out of fear, which leads into short term "demonstrative" programs which are costly and inefficient. That has been a clear case with some of the housing programs. Due to mismatches between the priorities assigned by the government to the low-income sector and their own interpretations on what it is that they need , the houses have remained vacant or have been occupied by higher income groups.

The psychology of the low-income groups has been left relatively unstudied. Some of the stated motivations these families have in relation to work are interestingly enough composed of "pull" and "push" factors.¹²

Pull:

Desire to obtain material goods: 30%
Want to be seen as "successes": 10%

Push:

Have needs to be satisfied: 20%
Are of working age: 20%
Have a family to support: 20%

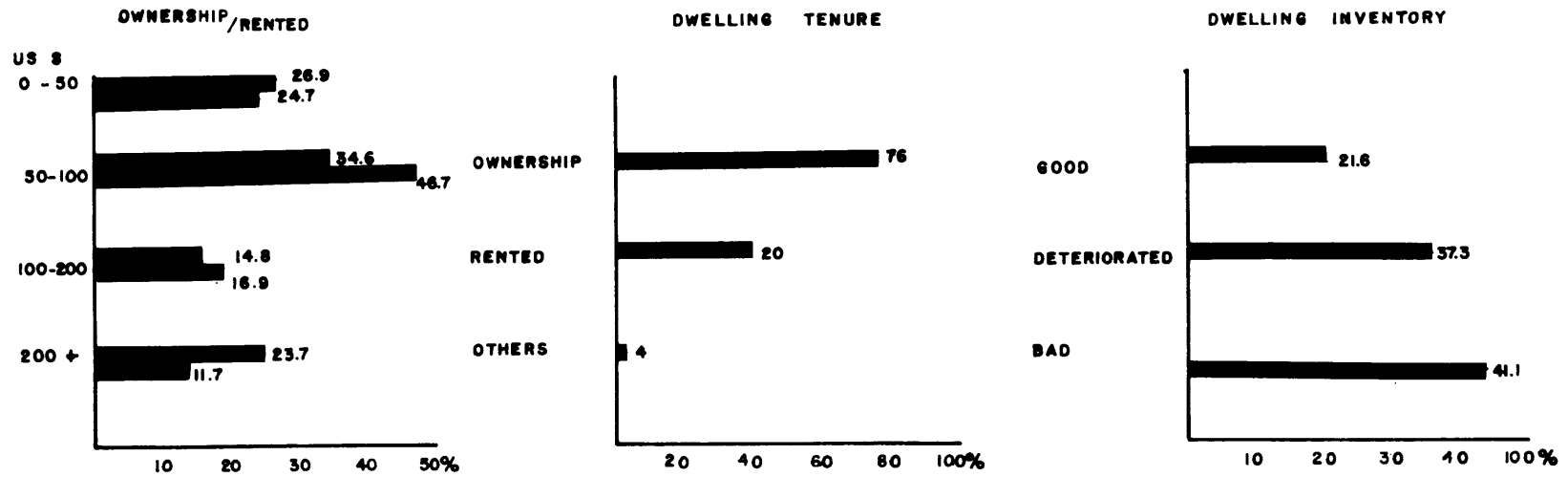
A further problem aggravating the economic conditions of most families in the Cienaga sector is the high percentage of broken families. If it is taken into account that approximately 60 percent of the households have more than four children, and that approximately 24 percent of them lack a father, it is then perceived more clearly that the basic problem affecting these families now and in the immediate future is primarily socio-economic and not primarily of physical needs. This could also be one reason for the relatively high percentage of working women in the Cienaga zone in relation to the rest of Cartagena and Colombia, where 5 percent are dependent women versus 19 percent for Colombia, in general.

The economic problem

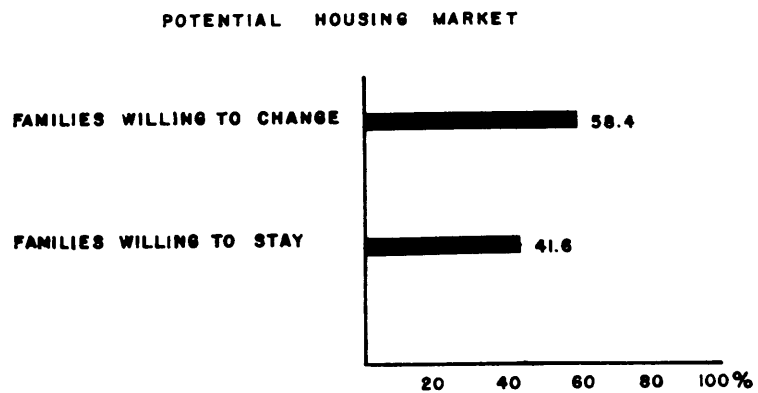
In terms of the economic organization of the families, the following are indicators:

Of a daily average income per family of US\$1.60, \$1.20 (75%) is spent on food. These figures not only point at the day-by-day struggle and the incapacity for saving that these families experience, but also indicate the amount of circulating money in the neighborhoods, as 64.5 percent of these families will spend their money in the central marketplace, while only 35.5 percent of the families will invest their cash into the neighborhoods' economy.¹³

CIENAGA FAMILY INCOMES - DWELLING TENURE¹⁴



HOUSING INVENTORY OF FAMILIES WILLING TO CHANGE



HOUSING	TOTAL	GOOD	DETERIORATED	BAD
OWNED	50.5	11.6	18.2	20.3
RENTED	39.3	7.9	15.5	15.9
OTHERS	10.2	N.A.	N.A.	N.A.
TOTAL	100	29.5	33.7	36.2

Although it seems clear that the problem is economic in nature, it is common to find that these communities are unsure as to their priorities in solutions. When asked which they would choose between having National Investments go into providing industrial jobs for the whole community or getting an equivalent of money to solve the environmental and physical conditions of the neighborhoods, the community was divided almost 50-50. (48.9% versus 49.8%)¹⁵

This apparently unclear perception of the source of the problem can originate from either the discredit of governmental programs to provide jobs or from the approach most families have of solving short-term rather than long-term problems. That is to say, employment solutions for these families are more abstract concepts than infrastructure investment or dwelling improvement and, therefore, they opt for the latter discarding a more direct attack on the nature of the problem.

The following are considered to be the main obstacles in getting better employment for Cienaga's families:

1. low level of education
2. lack of initiative due to beliefs such as predeterminism, etc., aggravated by lack of capital
3. lack of "adequate documentation" necessary to be employed in official jobs
4. lack of local labor organizations
5. lack of vocational and training schools in areas such as plumbing, carpentry, etc.
6. lack of a job agency that could provide city or regional information on employment opportunities
7. lack of local savings programs to retain, within the neighborhood, scarce capital resources
8. structural obstacles such as the need for "degrees" to work in jobs that require, at most, reading and writing knowledge

The health problem

The environmental conditions of the sector promote health problems from which (according to the inhabitants) 69 percent of illnesses originates. These precarious health conditions have a detrimental effect on the economic situation: 57 percent of the inhabitants were sick from 10 to 30 days; 10 percent of them were sick for more than 100 days during the year, with the consequent effect on their employment and the family's budget.¹⁶

The Ciénaga de la Virgen sector has a high infant mortality--27 percent of the total deaths were of children under one year of age. This was equivalent to 29 percent of the births in the same period. Twenty-three percent of the deaths of children was due to malnutrition.¹⁷

There are three health posts in the sector with vaccination services, child care and odontological facilities. Unfortunately, they suffer from staff scarcity and a small budget which limits their efficiency and radius of action. Because of their precarious health conditions, these families require more laboral protection against being fired from job absenteeism, etc., and better medical treatment. As they lack the "requirements," such as documentation and education, their jobs are outside the official labor market and, therefore, they are legally at the mercy of their employers without any of the social security benefits. The final outcome is a very low income which cannot be invested in improving the environmental conditions that originated the cycle.

THE HOUSING SITUATION

The dwellings of the Cienaga sector occupy a secondary importance in the families' priorities. The most pressing physical problem of these families deals with land-fill and environmental conditions rather than with the house itself.

Soil Conditions

Due to the contraction and expansion of the slime and clay which are the most common soils in the area, most of the dwellings made of cement or masonry develop severe structural cracks. (In order to avoid the problem, this clay should be covered with a porous material like sand, which would act as insulation between the clay and the sun preventing its cracking.) Another problem is created by the dwellings being built on the Cienaga itself, due to the saturation of the beaches and the remaining of the mainland.

Their construction system is as follows: The chosen area is marked by wooden posts and a dike is constructed of garbage and other scrap materials, leaving the water inside to be evaporated by the sun. Once the lot has dried, it is filled to a height considered by the inhabitants to be adequate. A wooden shack is built, composed, usually, of two rooms. Bridges connecting the dwellings with the mainland are done by interested parties followed by street layout and filling.

The dwellings

At present, approximately 58 percent of the total dwellings are built out of wood and scrap materials, and the roofs out of zinc sheets or clay tiles. All of these are inadequate in relation to climatic environmental conditions and fire hazards. The houses of brick, concrete block or other masonry comprise the remaining 42 percent.¹⁸



Fifty-four percent of the total dwellings consisted of two rooms; one used during the day as a multi-functional space, and the other remaining as the "master bedroom." The overall sizes of the dwellings are very small. Due to "status quo" pressures, 50 percent of the dwelling space is given to the living room.

The living room acts as a showcase for all the investments in furniture, decoration, and equipment. The house has a high symbolic value and, for this reason, the people prefer to invest their money into seemingly useless expenses such as decoration, rather than in enlarging their living quarters. The people, through their houses, interpret the "architectonic fashion," techniques, etc., which are being used in the city. The radio, record player, and, in some cases, T.V. are necessary investments as they denote stages in the socio-economic hierarchy of the family within the neighborhood and can also be rented for parties (adding to the family's income). A further advantage of such investments is that they can be moved in case of eradication. These "electrical gadgets" become such important components in the families' possessions, that proper names are given to them, such as "the Groovy One" or "Top Banana," etc. Another "must" is the refrigerator which denotes status and is usually placed in the living room.

On the other hand, the bedrooms are underfurnished; usually consisting of one bed where two or more people sleep. In the Cienaga neighborhoods, the average is 2.2 persons per bed.¹⁹

The social structure--a result of overcrowding

Much has been said about the social interrelationships of the low-income families, how they share spaces and require very little privacy. However, there remains a feeling of uncertainty over whether what is being said is not a justification of a given situation in order to make it look less inadequate than it really is.



In the neighborhoods of the Cienaga, the tensions, frustrations, resentments, etc., readily erupt into violence. The presence of an undesired person at a given moment can be enough to translate the frustrations into physical violence. Twenty-three percent of the crimes committed are caused by personal aggression. The high density seems to relate to the high crime rate, as in most of these neighborhoods, there is an average of 6.2 persons per room; 66 percent of the total dwellings are occupied by up to 15 persons; 23 percent of the dwellings contain more than one family.

In order to increase personal income, the families commonly raise animals. In 69 percent of the houses, the family shares the home with pigs, chickens, pigeons, etc. What this overcrowding leads to is that the heads of the families and other adults spend most of their time outdoors, and this outdoor life style has encouraged a large gambling "industry" which takes 20 percent of the head-of-the-family's income and five percent of the family's budget.²⁰

Conclusion

Although the material standards of the existing housing stock are almost totally inadequate, the Cienaga sector satisfies the requirements of the families, as it is rent free and provides accessible location in relation to available jobs and to the city at large.

Seventy-six percent of the families own their dwellings and only 25 percent rent a room. The average rent varies between US\$4 and \$8 per month.²¹ The owners of the dwellings are aware of their precarious legal tenure, but they do not claim to own the land; they simply consider themselves entitled to the improvements made upon it. Any mortgage or "real estate operation" is done on that assumption. Slum lord businesses have begun (seven percent of the owners had more than one house) as the economic potential

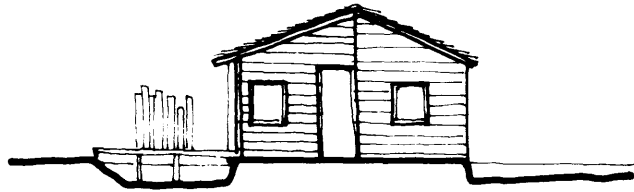


of such a market has been recognized. Also, 25 percent of the lots are not built upon, which has led to land speculation, most of which is done by people from outside the sector. Almost 50 percent of the families, when asked which would be the cost of a dwelling that they could afford, stated an approximate value of US\$750, with a monthly cost of \$7.20 payable in 15 years.²²

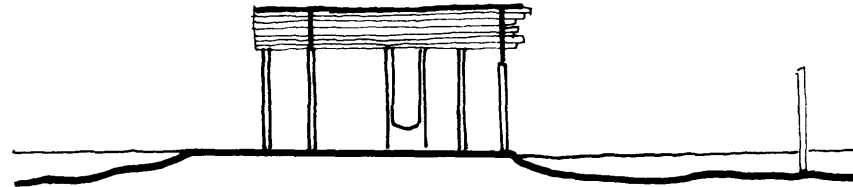
As pointed out earlier, the average cost of a dwelling in an ICT Program is US\$1,794, thus effectively eliminating the families in similar conditions as those of the Cienaga. Some of these families could, at best, dedicate 20 percent of their monthly incomes to satisfying their housing requirements, which for 32 percent of the Cienaga families, would mean less than US\$5 per month.

Recently, the ICT has changed its policies in relation to low-income housing programs, gearing its efforts towards infrastructure projects and neighborhood improvement. It has been recognized that, for these groups, it is not feasible to provide a complete housing package without 1) incurring very high government subsidies, which, at present, are unavailable, and 2) destroying the necessary grass-roots organizations and the autonomy of the "marginal developments."

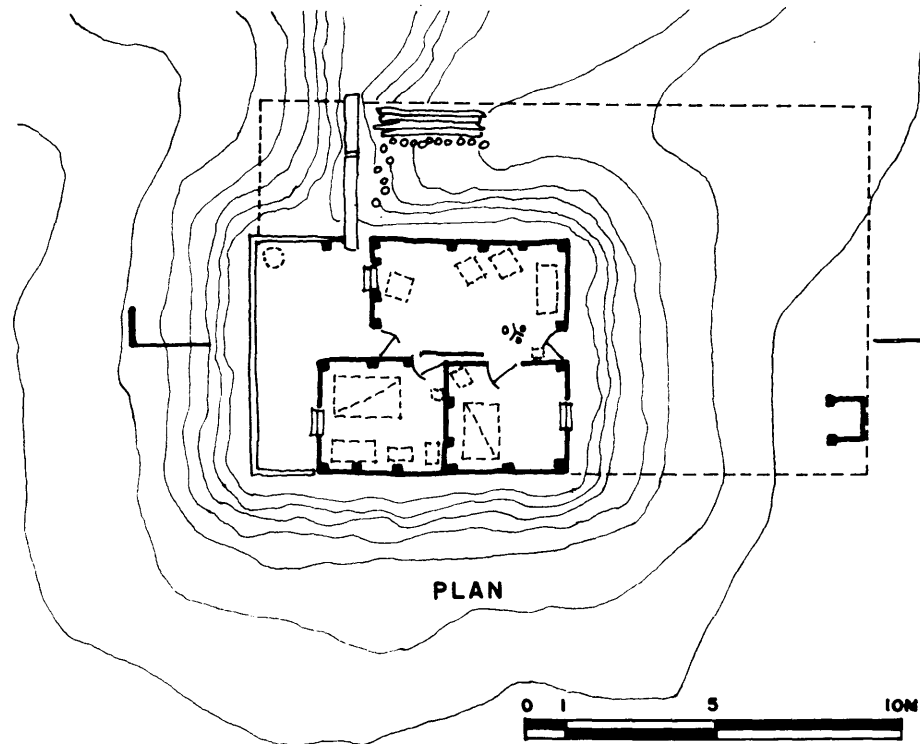
Typical Dwelling 6



ELEVATION



SECTION



PLAN

CIENAGA TYPICAL DWELLING

NUMBER OF OCCUPANTS : 5
TENURE : OWNERSHIP
LOT AREA : 160.00 M2
DWELLING AREA : 42.25 M2
UTILITIES AVAILABLE : ELECTRICITY
UTILITIES NONAVAILABLE : WATER
SEWAGE

CONSTRUCTION MATERIALS

ROOF : CEMENT TILE
WALLS : WOOD
FLOOR : COMPACTED EARTH

Context: **CASE STUDIES**

Content: INTRODUCTION

THE ILLEGAL SYSTEM

CANDELARIA AND FREDONIA

GENERAL INFORMATION

GROWTH

POPULATION

SOCIO-ECONOMIC CHARACTERISTICS

SITE PLANS

HOUSING

DWELLING PLANS

THE LEGAL SYSTEM

CHAMBACU

GENERAL INFORMATION

RELOCATION POLICIES

COSTS

SOCIO-ECONOMIC CHARACTERISTICS

BLAS DE LEZO

GENERAL INFORMATION

SITE PLAN

SOCIO-ECONOMIC CHARACTERISTICS

COMMUNITY ACTION PROGRAMS

IMPLICATIONS FROM CASE STUDIES

Case Studies

Introduction

Four case studies, in two basic groups, will be considered:

I. Illegal housing systems: Squatter settlements

II. Legal housing systems: Government programs

The major differences of the two groups are: 1) costs of construction; 2) degree of participation by the community; 3) legal tenure of the property; 4) access to elements such as credit; 5) provision of utilities and facilities by the municipalities; 6) location of the neighborhood in relation to the job market, transportation and the city at large.

I. The illegal system

BOTH NEIGHBORHOODS STUDIED GIVE AN INDICATION OF THE SOCIO-ECONOMIC CHARACTERISTICS OF THE FAMILIES IN THE CIENAGA SECTOR.

The neighborhoods belong to the chain of invasions which grew around the Cienaga de la Virgen from which two settlements have been chosen: the Candelaria neighborhood--an old squatter invasion--a "stagnant" community; and the Fredonia neighborhood--a recent squatter invasion--a "dynamic" community. They both provide a perspective of the path squatter settlements follow from a dynamic autonomous community to a stagnant apathetic slum. Candelaria was one of the first invasions twenty years ago, and Fredonia is the most recent of the chain settlements around the Cienaga, being only six years old. Although the environmental conditions of both neighborhoods are somewhat similar, they differ greatly in the degree of participation by the residents toward solving their communal problems.

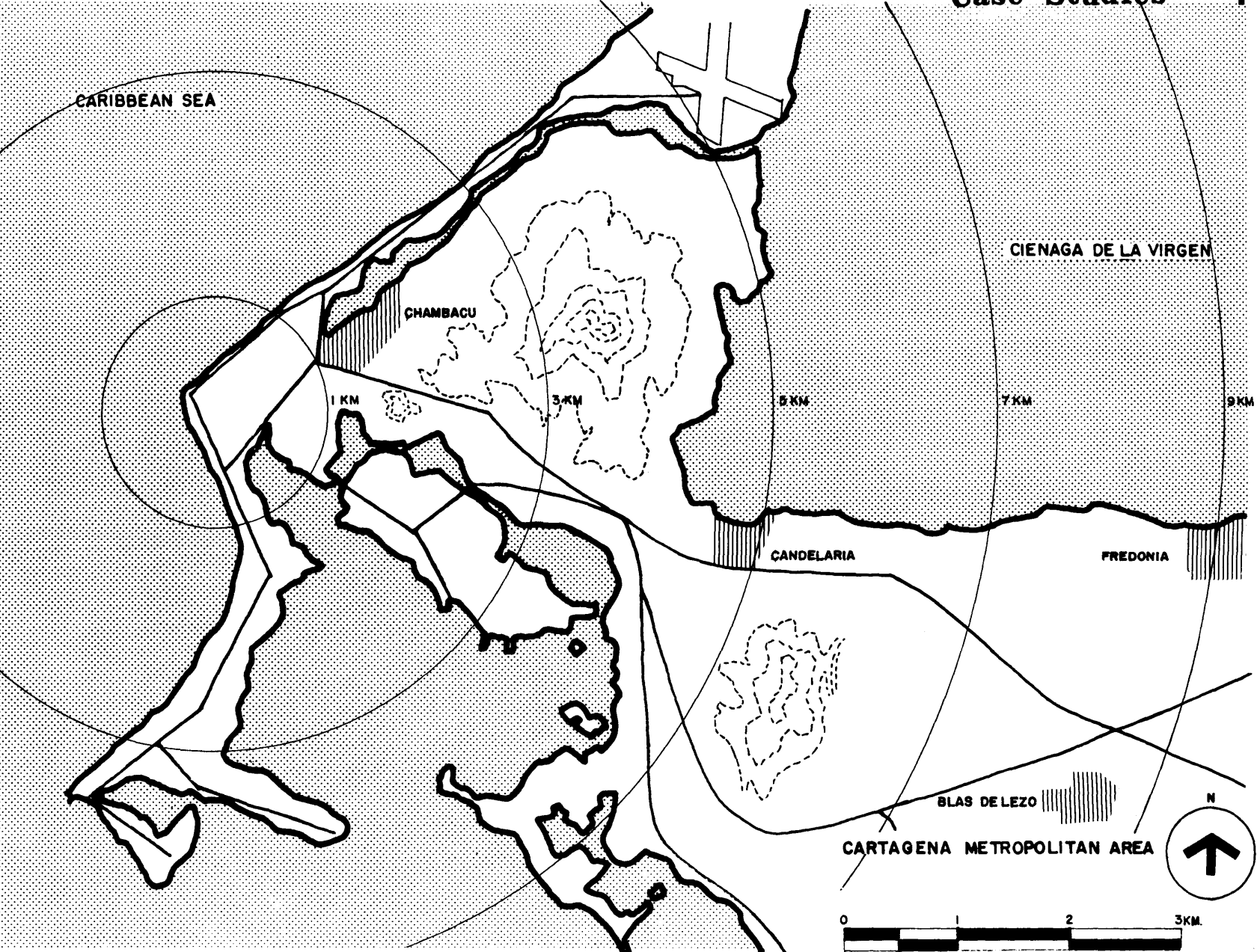
II. The legal system

Two neighborhoods will be briefly studied: 1) Chambacu--a squatter settlement recently relocated by The National Housing Institute (ICT); 2) Blas de Lezo--a community developed through a "self-help" program and directed by ICT.

CHAMBACU GIVES AN IDEA OF THE COSTS INVOLVED IN RELOCATION PROGRAMS. These costs are twofold. One is related to the economic subsidies necessary to allow these families to move into new "minimum dwellings." The second deals with costs which are more difficult to measure, such as: the hardships imposed on low-income families due to distance; the removal of indigenous economic systems which insure the families with access to food and dwelling every day; and the economic burden of payments for services, mortgages, transportation, etc.

BLAS DE LEZO ILLUSTRATES THE POTENTIAL CAPACITY THE LOW-INCOME FAMILIES HAVE IN SOLVING THEIR HOUSING NEEDS. However, in this case, the major drawback the families are experiencing is the distance between the neighborhood and Cartagena. This distance from employment to residence affects the families in terms of time and costs spent commuting to work, higher cost in food prices (as they have little choice of where to buy it or have to take the bus to the central market), and a lack of involvement in politics and participation in urban activities. Blas de Lezo briefly illustrates the "modus operandi" of community programs, their accomplishments and failures, encouragements and obstacles and presents a view on the main economic characteristics of the families one notch higher in the income level than those in squatter settlements.





THE ILLEGAL SYSTEM: SQUATTER SETTLEMENTS--THE CASES OF CANDELARIA AND FREDONIA

General Information

Since the first squatters of the 1950s succeeded in maintaining their settlements around the Cienaga de la Virgen, the remaining shore area was soon progressively invaded. A prime advantage of the location was its proximity to the center of the city, both by water and by land, and the proximity to transportation systems such as buses. (Fredonia, which is the farthest one is only 8.5 Km from downtown.) The settlements paralleled the existing services and infrastructure and "pirated" from them the basic services. The expansion of the settlements from natural growth is 11 percent. Migrations moving into the area have a growth of 4.8 percent a year for a total growth of 16 percent a year.

Growth of Candelaria

The neighborhood of Candelaria is one of the oldest communities in the Cienaga. Its relative age (20 years) has had specific implications in relation to its lack of autonomy and the lack of involvement of the community which has resulted in a failure to solving its own problems.

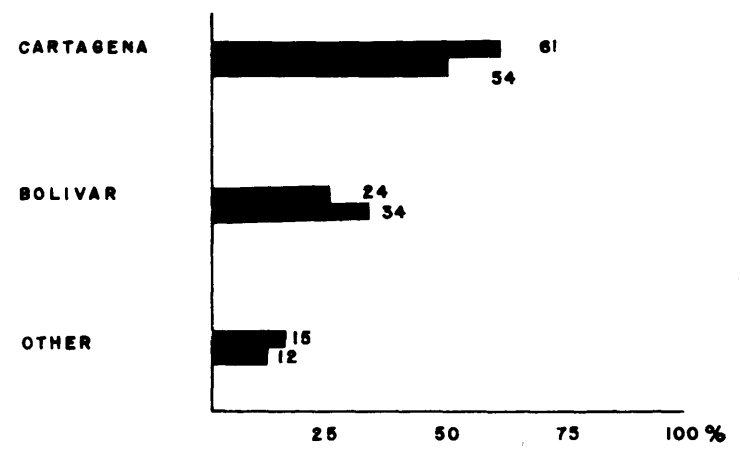
Candelaria has grown rather slowly (in comparison to other squatter settlements); by 1950 it had 90 families or 13% of its present population. Ten years later its population had increased to 290 families or 42% of the total population, and by 1970 the total population amounted to 660 families or approximately 4,000 people. These figures imply a rate of growth which triples every ten years.

Growth of Fredonia

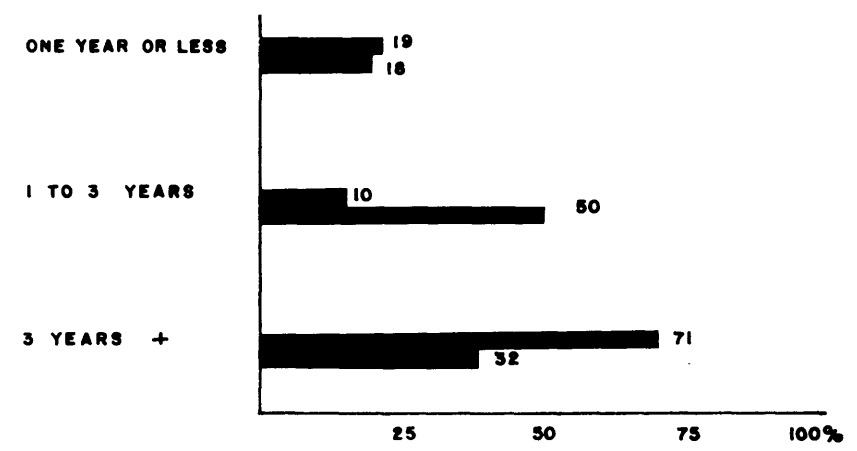
Fredonia provides a dramatic comparison to Candelaria, as its entire growth took place in a five year period. In 1965, fifty five families invaded the beach on the south-east corner of the Cienaga. Four years later, the neighborhood consisted

CANDELARIA / FREDONIA

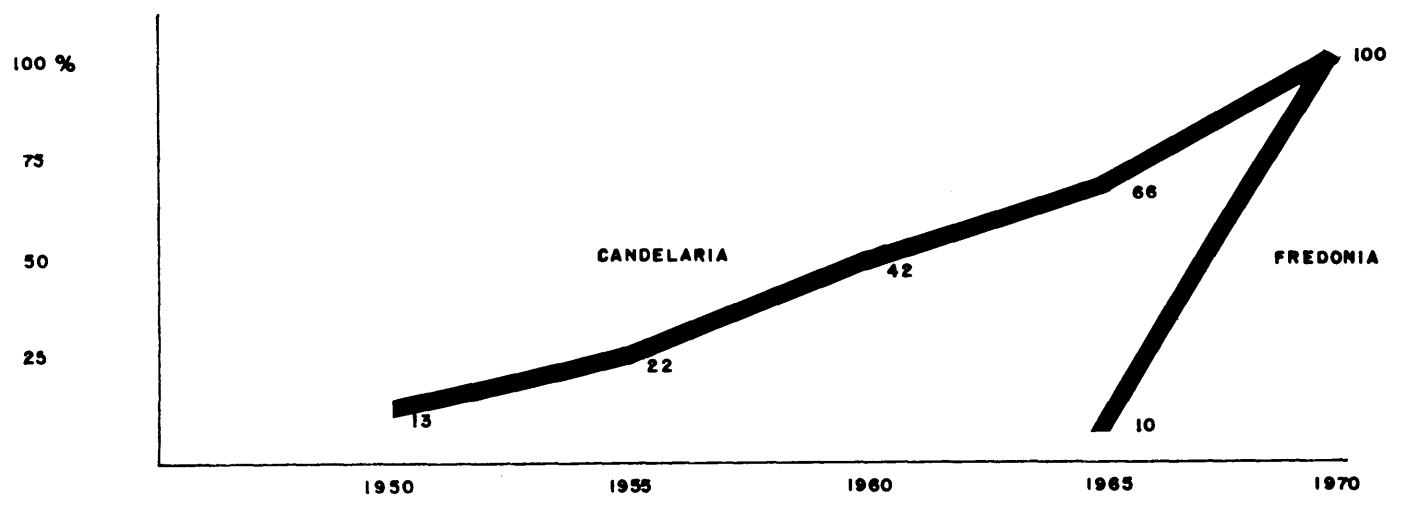
ORIGIN OF POPULATION



TIME OF PERMANENCE



NEIGHBORHOOD POPULATION GROWTH



of 508 families, and by 1970 there were 552 families with a population of 3,317. The rate of growth of the neighborhood represents a doubling of its population every year.

Implications

The growth of the settlements has been in part responsible for the unhealthy environmental conditions in both neighborhoods. Due to the rate of expansion neither the lay out, nor the lot sizes or material standards of the dwellings can be considered to be adequate. Yet, it seems clear that the families living in the area are satisfied with their accomplishments. This satisfaction is directly related to the length of permanence of the families within the respective neighborhoods. Fredonia being the most recent invasion, it has the highest degree of satisfaction, where 82% of the surveyed families by the International Development Foundation¹ (I.D.F) stated that they had accomplished their goals, versus 67% satisfaction in Candelaria. Perhaps a reason for this difference in satisfaction is explained by the fact that in the incipient stages of development, the families deal with basic problems and tangible objectives for which they visualize specific actions.

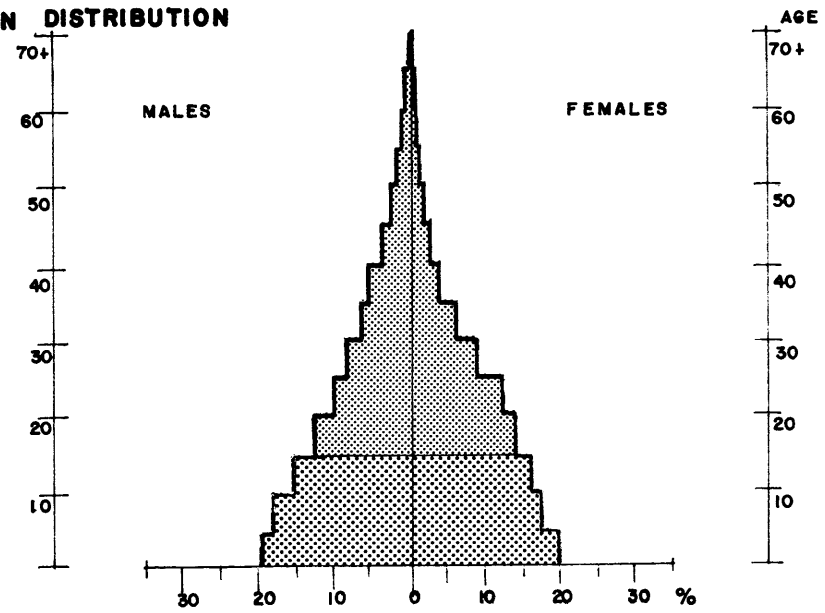
The only reason as stated in the survey why the families of the Cienaga would leave their dwellings or their neighborhoods, is if they are offered a better paid "stable job". Otherwise they stated that they were unwilling to move and would rather improve the environmental conditions of the area they now live in.

The reason for this unwillingness is that by moving they would lose all the advantages provided by their location and the autonomous economic system generated by 9,000 families with similar socio-economic conditions.

Population 7

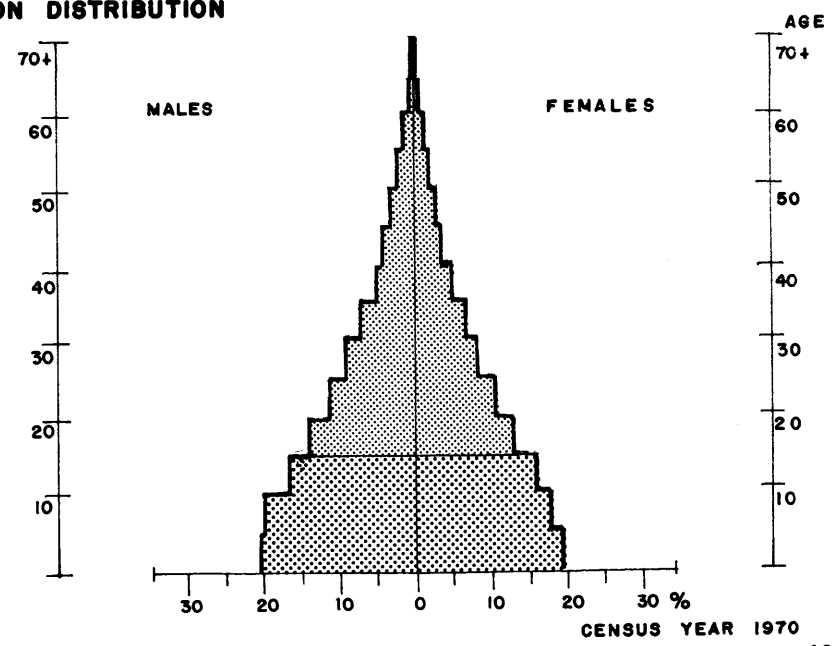
CANDELARIA POPULATION DISTRIBUTION

AGES	MALE	FEMALE
0 TO 4	333	304
5 - 9	344	288
10 - 14	274	261
15 - 19	186	229
20 - 24	140	185
25 - 29	165	117
30 - 34	79	87
35 - 39	83	87
40 - 44	67	63
45 - 49	47	53
50 - 54	45	43
55 - 59	23	31
60 - 64	19	26
65 - 69	10	19
70 +	19	39
TOTAL	1.734	1.832



FREDONIA POPULATION DISTRIBUTION

AGES	MALE	FEMALE
0 TO 4	330	296
5 - 9	321	277
10 - 14	255	205
15 - 19	156	182
20 - 24	109	144
25 - 29	106	105
30 - 34	81	79
35 - 39	90	95
40 - 44	76	61
45 - 49	55	49
50 - 54	36	29
55 - 59	21	25
60 - 64	22	15
65 - 69	9	14
70 +	12	12
TOTAL	1.679	1.588



CENSUS YEAR 1970

Socio-economic characteristics

Education and employment

The level of education and skills is directly related to the available income of the families. There are three basic employment sectors:

The first is for persons employed in household services (mainly women) or in activities such as watchmen, street vendors, fishermen, etc., their monthly wages ranging from US\$ 5.00 to 20 dollars. This group represents approximately 40% of the Cienaga population.

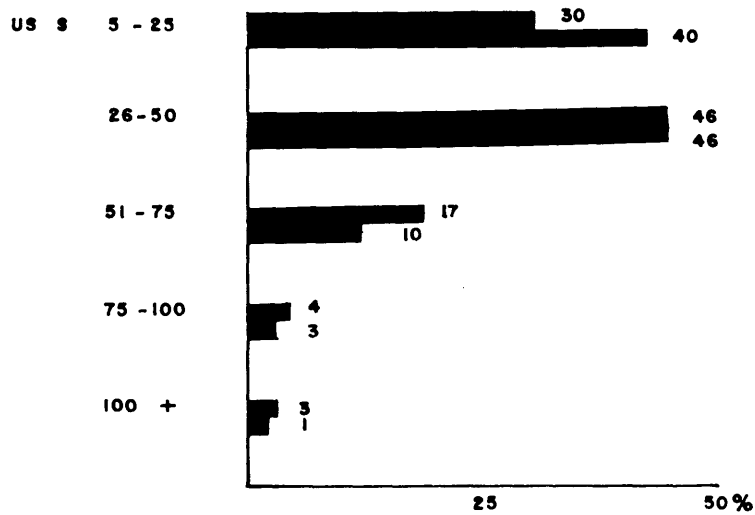
The second group is formed by construction workers, shop employees, drivers, government employees, etc., whose wages range from \$25.00 to 50 dollars a month, and represent 47% of the total population.

The members of the third group are the most "educated and skilled" and are occupied in jobs such as teaching, industrial work, hospitals, etc., earning a monthly salary ranging between \$50.00 and 100 dollars. This group comprises only 13% of the Cienaga population.²

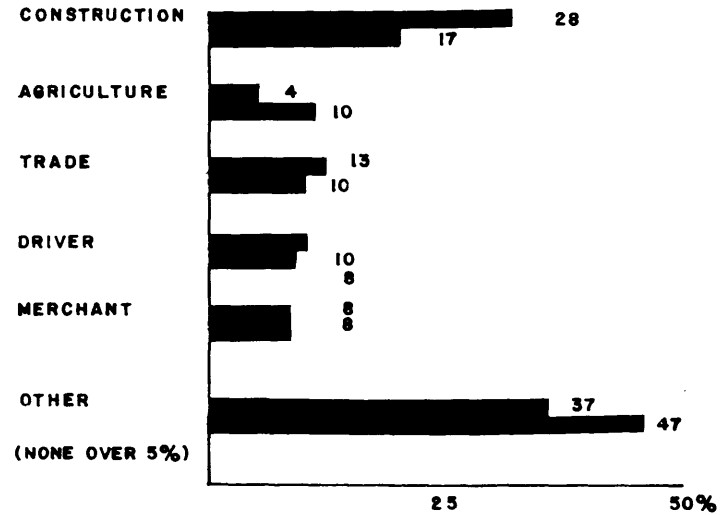
The priorities assigned to different activities by the families and the individuals is also a result of the transfer of educational values from the "upper" to the "lower" classes. "Codes of behavior" influence the families' and the individuals' budget distribution. For the individual, clothes and other "representational expenses" such a liquor, cigarettes, gambling money etc., are necessary requirements to maintain a desirable status-quo. The family, on the other hand, has to be concerned with issues such as food and housing expenses.

CANDELARIA / FREDONIA

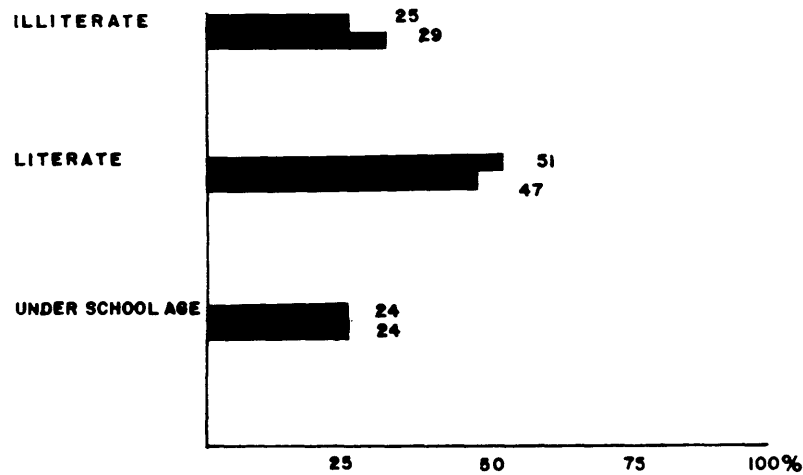
FAMILY MONTHLY INCOME



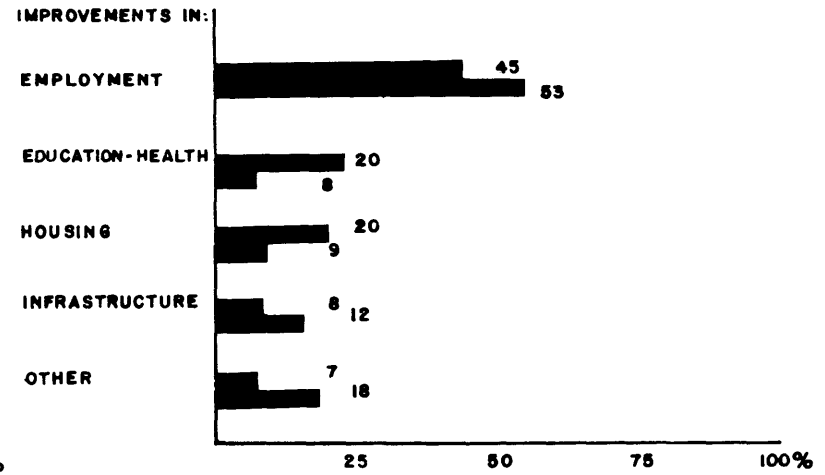
EMPLOYMENT DISTRIBUTION



EDUCATIONAL LEVEL



PRIORITIES OF DEVELOPMENT



The employment figures for the neighborhoods seem rather high at 83% of employment for Fredonia and 82% for Candelaria, but as it is often the case, they represent different interpretations on the meaning of "employment" including situations of under-employment or disguised employment.³ Candelaria's families seem to have better jobs than those in Fredonia as seen by the income figures. (See chart, p.111) As both neighborhoods have similar educational skills, this difference must be accounted by the "degree of urbanization" or the length of permanence in the area, and the different access to "connections", "pulls", "leverages" and other methods used to obtain "good jobs."

Income

Although employed, the lack of an adequate income does not allow these families to maintain anything else than a "subsistence" level, as measured by food consumption patterns and economic capacity to save and physical guidelines such as density per room, families per house etc. Out of economic necessity, the families have been forced to seek additional income; two primary means are: renting rooms and raising animals.

Renting is an important economic element in the marginal communities, for not only does it add to the limited budget of the families, but it also provides an alternative for the migrant who has recently arrived into town, is unemployed, and has no savings.

For Fredonia and Candelaria, rents are divided into three ranges:

The first ranging between \$2.50 and 7.50 dollars a month for a room. This group comprises approximately 80% of the rent market in these neighborhoods.

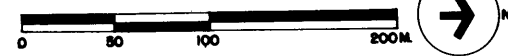
The second group pays between \$7.50 and 12 dollars a month and for the third group, rent is over 13 dollars a month. These last two groups rent a house rather than a room and comprise approximately 20% of the rental market.⁴

Case Study 7



AREA - 29.25 HA
LOTS - 1.039
DENSITY - 35.4 LOTS/HA

BARRIO CANDELARIA



Another factor responsible for the subsistence income of most families in either Candelaria or Fredonia is the high percentage of women in the population (over 50%) and the low percentage of the women involved in economic activities and earning a salary. In Fredonia, 25% of the women of working age are earning a salary, while in Candelaria only 19% of the women are employed.⁵

Whether the families in the longer established Candelaria do not consider this additional income necessary or whether it represents the social pressures of an already established community, it is difficult to assert. Fredonia also has a higher amount of people working in temporary non-skilled jobs; again perhaps due to its short existence.

These families cope with money shortages and solve the daily economic crisis in several ways; the most common are:⁶

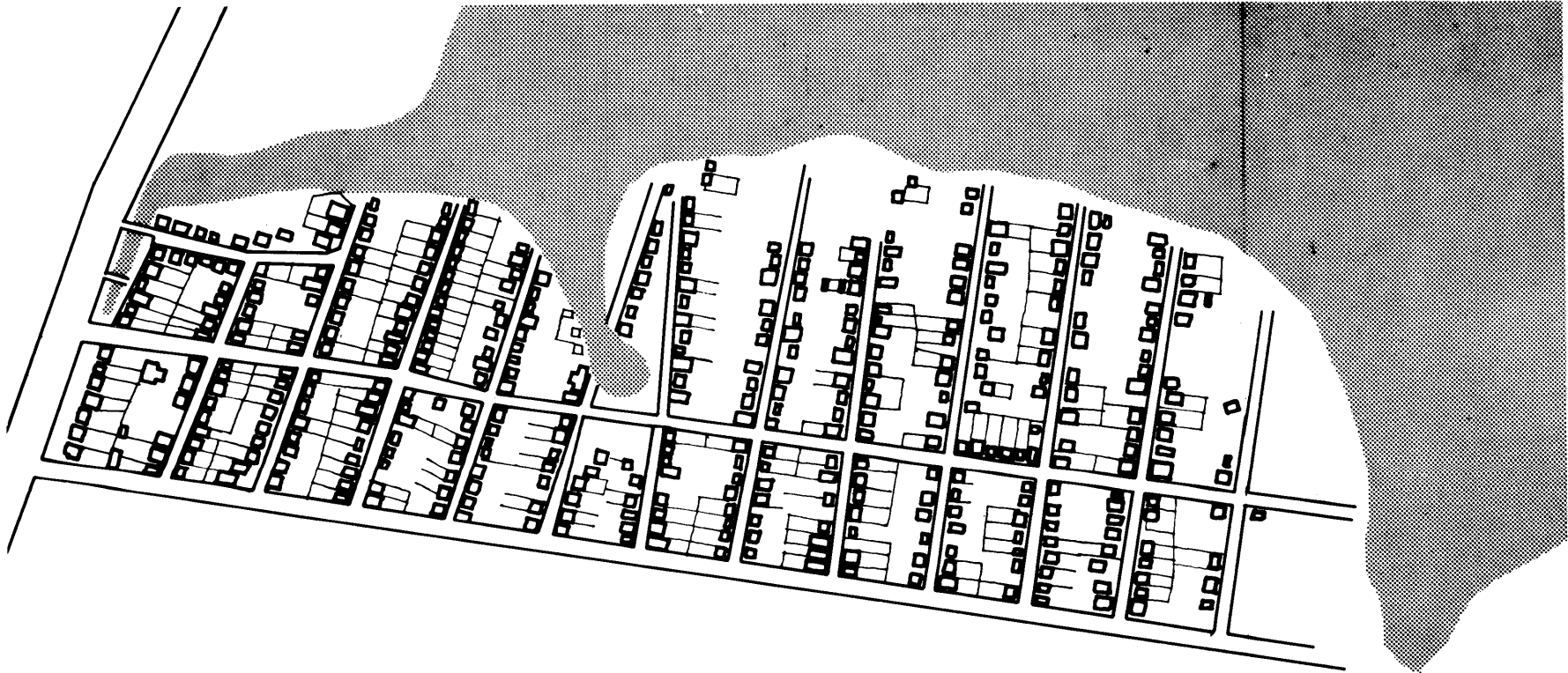
1. Family or friend loans, usually done on short term basis. (40%)
2. Pawning, which in these neighborhoods is one of the most common ways of obtaining cash. (30%)
3. Local credit systems in shops, which although increasing the costs up to 40%⁷ allows these families to obtain what they need when they need it. (17%)
4. Doing nothing or stealing, etc. (10%)
5. Savings, which is almost non-existent and, therefore, seldom used. (3%)

Priorities of development

The priorities given by the families to different "needs", may be taken into consideration by the agencies in charge of assisting these communities and used as plans of action, the sequential order of which would be:

1. Infrastructure works (provision of electricity, sewage, land fill, water, trash collection, etc.)

Case Study 7



AREA - 17.50 HA
LOTS - 637
DENSITY - 56.4 LOTS/HA

BARRIO FREDONIA



2. Facilities (schools, health posts, food, clothing and drug cooperatives, employment agencies, etc.)
3. Housing improvements.

Implications of such priorities

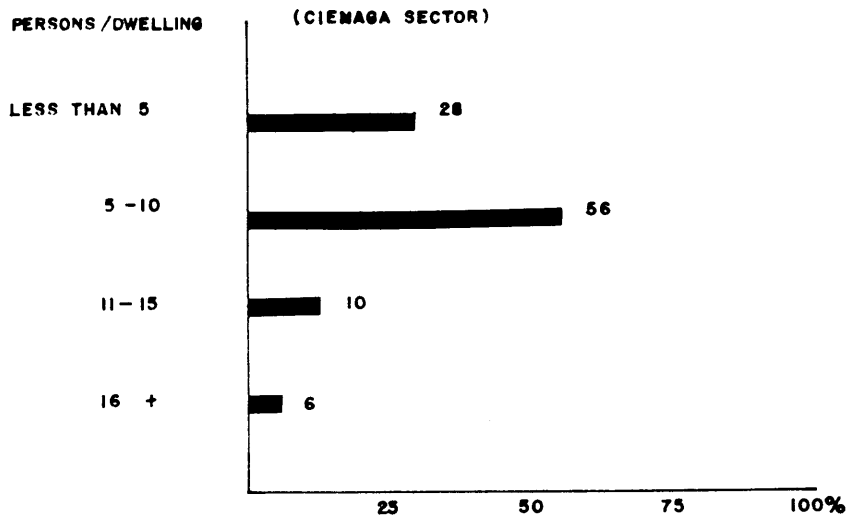
If a complete housing package is provided to these families (including all of the previously mentioned components): it would be dependent on high government subsidies as the return of the investment will be below its costs. Given the existing financial situation of the families, the most that can be spent in housing is 20% of their income or an average of \$6 dollars a month for Fredonia and Candelaria. If a minimum dwelling built the conventional way costs over \$1,000 dollars, this would imply 166 months at 0% interest rate to pay for the dwelling. If utilities and installation charges are also part of the package, the available percentage of income to pay for the dwelling is further reduced. As these families have stated that their priorities are the services, the "housing package" policy even at 0% interest is not feasible without incurring into payment defaults (usually translated into government subsidies) that Colombia at present cannot afford. This economic crisis is further reinforced by the fact that in order for government agencies to provide such housing programs, it is necessary for them to obtain dollar loans from international agencies. The devaluation of the Colombian peso; the high interest charged in such loans; the "null rate of return" of such investments all indicate the non-viability of such programs at the present time, or in the near future.⁸

Community participation

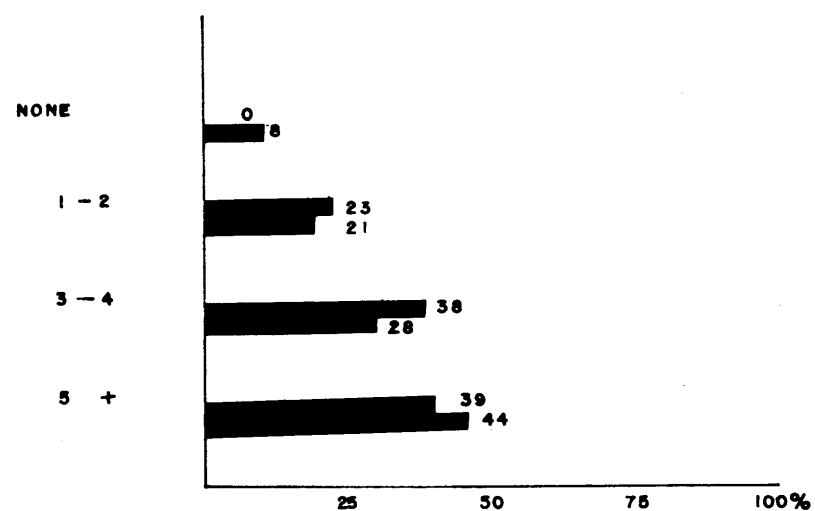
Participation in community action programs also is apparently related to the age of the neighborhoods. In Fredonia, 87% of the surveyed families had a member working in community projects and who had participated in more than three such projects.

CANDELARIA / FREDONIA

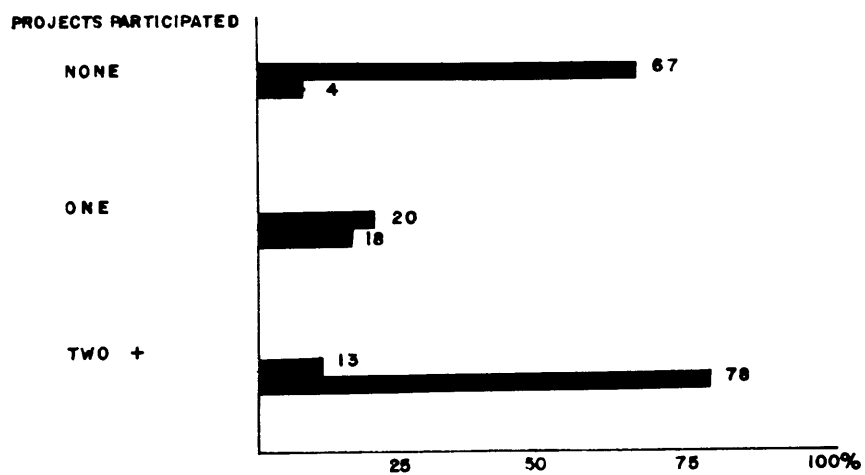
DENSITY PER DWELLING



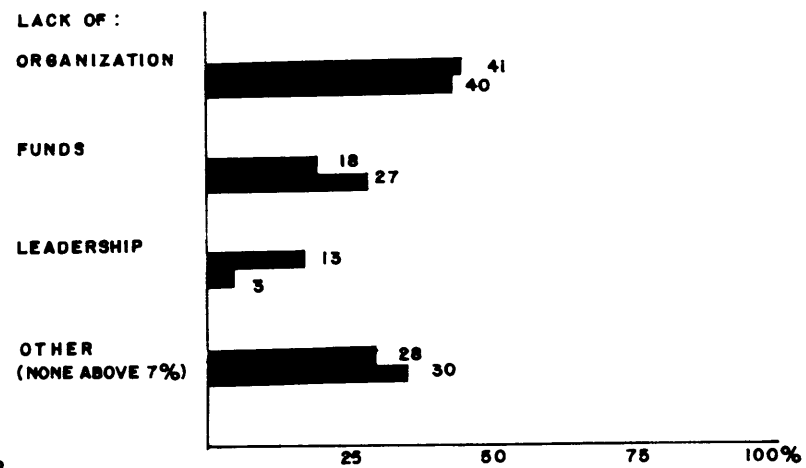
CHILDREN PER FAMILY



PARTICIPATION IN COMMUNITY PROGRAMS



OBSTACLES TO COMMUNITY PROGRAMS



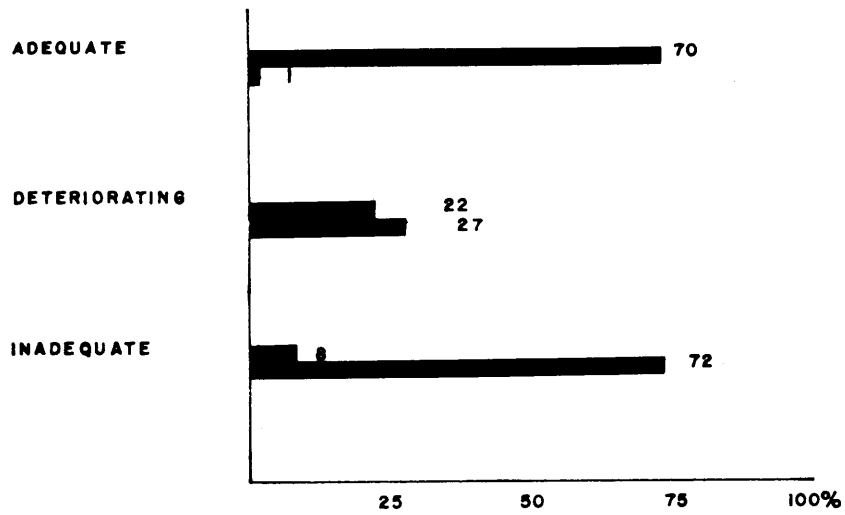
This involvement also included financial contributions by the families, a more significant fact in view of their lack of economic resources. Four years after the invasion of the land in Fredonia, 92% of the 500 families had paid a fee of \$16 dollars to the community association for the development of communal projects. That is a total amount of US\$ 6,400 dollars, the results of which have been impressive. A dike almost 1,000 meters long protecting the neighborhood from high tide floodings; the filling of the three main roads; and other communal programs.⁹

The longer established Candelaria presents the opposite situation. Of the surveyed families, only 32% worked in a community action project. Although certain projects were being carried out at the moment of the survey (street filling), 23% of the interviewed families were unaware of such projects, 75% had never contributed financially to them, and only 4% of the families involved themselves in such efforts.¹⁰

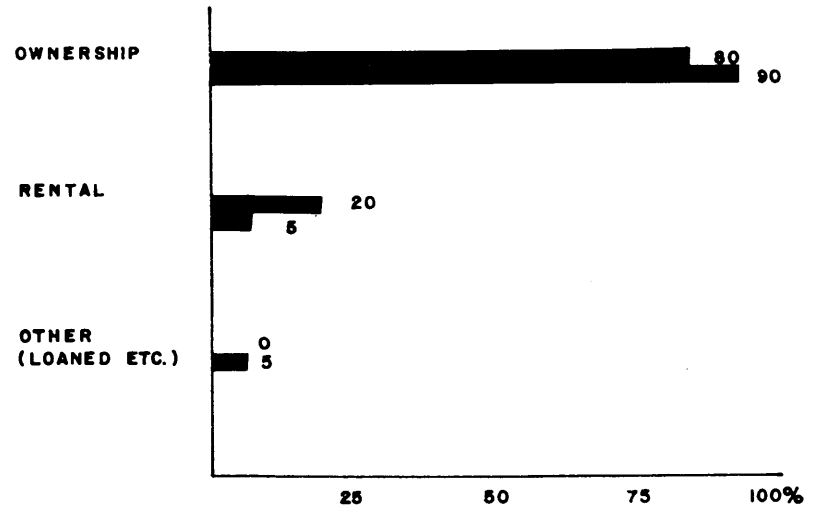
The I.D.F. report attributed this difference of involvement between Fredonia and Candelaria to the presence of a peace corp volunteer and a priest in the former neighborhood, both of which have apparently motivated the community and coordinated its plans of action. Two questions come to mind: 1. What happens if these two persons leave the community, as they have become the key-stone on which the success of the program rests. 2. Could these same persons accomplish the same goals in Candelaria, or is the success in Fredonia an exception. The validity of this question is related to the fact that the two "advisors" came into Fredonia at the time when it was in the process of consolidation and as such took advantage of the participants' dynamism. A key element in the continuation of community development programs is the capacity to transform "abstract" problems into simple "plans of action". While the obstacles are physical in nature, the participants can visualize paths of action; but when the time comes to face employment problems, build cooperative systems, and create savings programs, these are vague goals in the minds of "low-income families" and are not conducive to maintaining the "cohesiveness" of the community.¹¹

CANDELARIA / FREDONIA

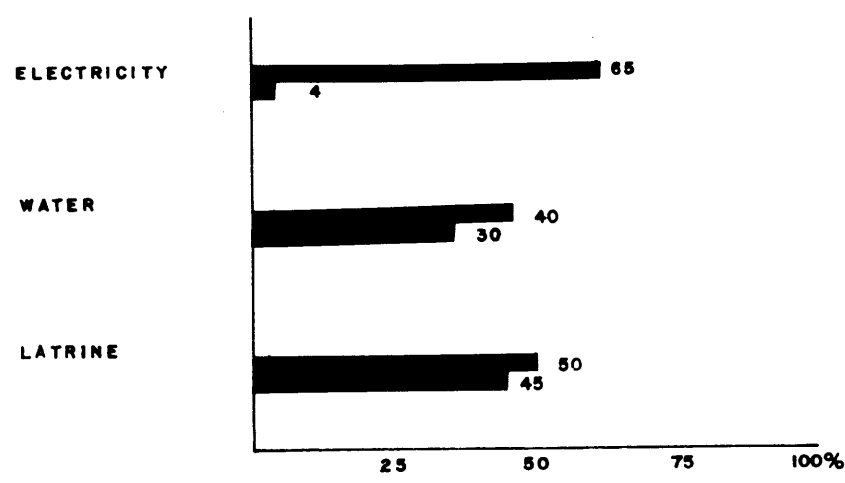
DWELLING INVENTORY



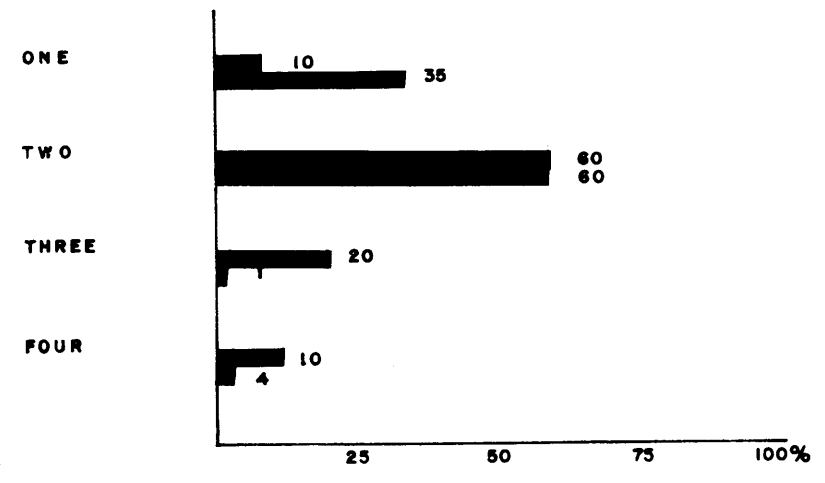
DWELLING TENURE



AVAILABLE HOUSING UTILITIES



ROOMS PER DWELLING

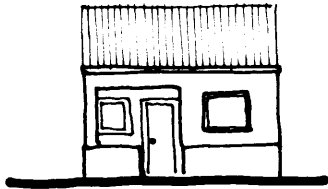




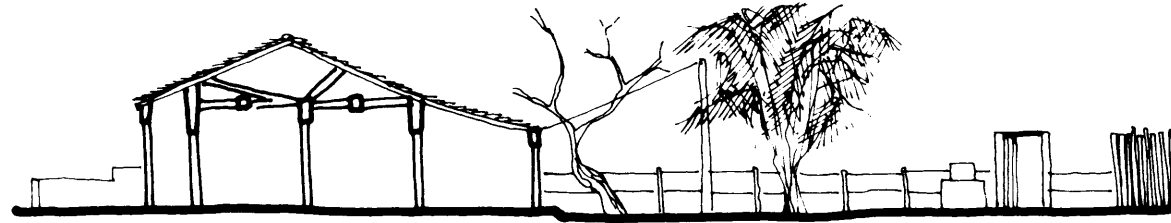




Dwelling¹² 7



ELEVATION

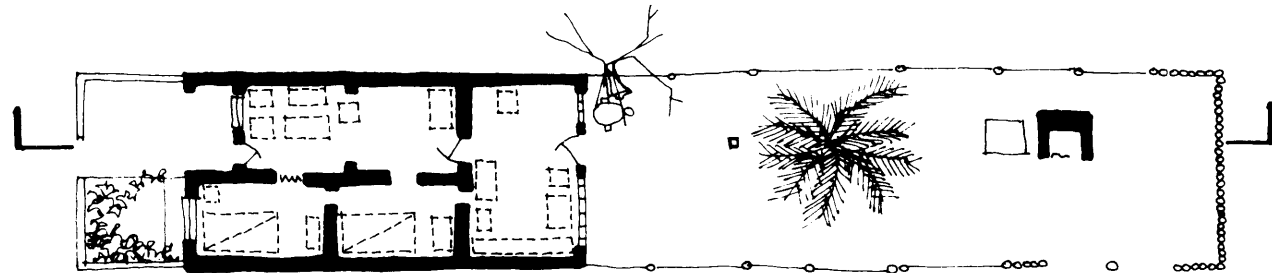


SECTION

NUMBER OF OCCUPANTS : 6
TENURE : OWNERSHIP
LOT AREA : 156.00 M²
DWELLING AREA : 54.08 M²
UTILITIES AVAILABLE : ELECTRICITY
: WATER
UTILITIES NON AVAILABLE : SEWAGE

CONSTRUCTION MATERIALS

ROOF : ASBESTOS TILE
WALLS : CEMENT BLOCK
FLOOR : CEMENT

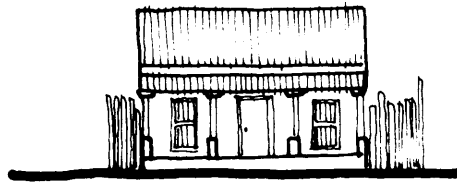


PLAN

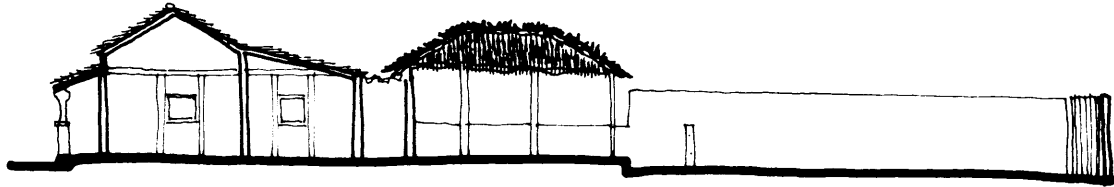




Dwelling 7



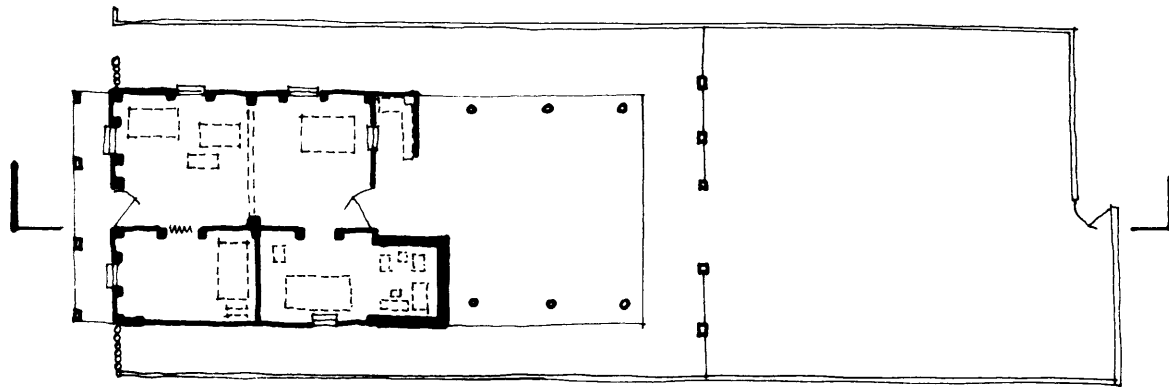
ELEVATION



SECTION

NUMBER OF OCCUPANTS : 5
TENURE : OWNERSHIP
LOT AREA : 246.45 M²
DWELLING AREA : 5600 M²
UTILITIES AVAILABLE : ELECTRICITY
UTILITIES NON AVAILABLE : WATER
: SEWAGE

CONSTRUCTION MATERIALS
ROOF : CEMENT TILE
WALLS : WOOD
FLOOR : CEMENT

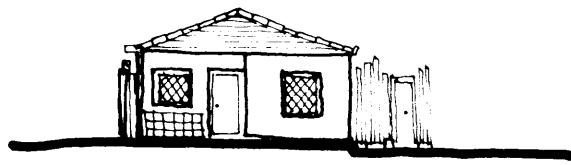


PLAN

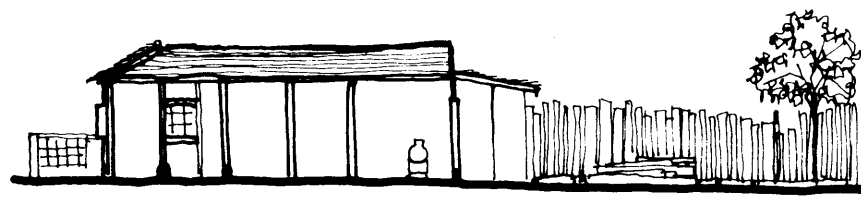




Dwelling 7



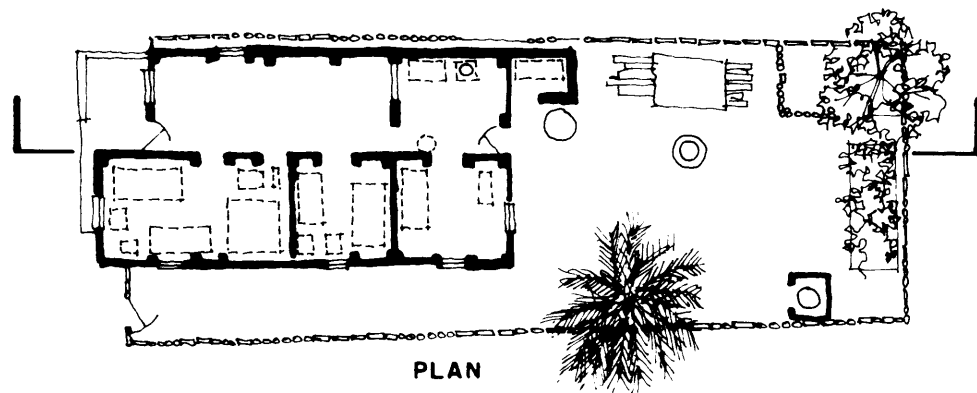
ELEVATION



SECTION

NUMBER OF OCCUPANTS : 10
TENURE : OWNERSHIP
LOT AREA : 157.50 M2
DWELLING AREA : 60.48 M2
UTILITIES AVAILABLE : ELECTRICITY
UTILITIES NON AVAILABLE : WATER
SEWAGE

CONSTRUCTION MATERIALS
ROOF : CEMENT TILE
WALLS : WOOD
FLOOR : CEMENT



PLAN



The legal system:

Government program, the case of Chambacu.

General information:

Chambacu was the result of an invasion in 1949.

The total population for 1971 was 7,850 people. The number of families in 1971 was 1,509 (only 179 families remain of the original squatters) with 1,160 dwellings and 164 unoccupied lots.

According to the urban renewal plan proposed for the north of Cartagena in the 1965 Master Plan, the squatter settlement had to be relocated in exchange for 2,303 dwellings for middle and upper middle class and for some commercial and institutional buildings. The ICT acquired the site by exchanging with the existing families their dwellings for a "complete housing package" (including the dwellings and utilities). These families would then be relocated in different neighborhoods starting in 1971. ICT is planning to rehabilitate the former site and construct in three stages 1,451 dwellings out of the total of 2,303; both the dwellings and the lots would be sold to a private investing company.

As the site has a prime location within the city, it is expected that the demand for new dwellings will be high and that ICT will make enough of a profit so as to recover the investment and subsidies involved in the relocation program.

If this program is successful, similar programs would then take place in areas where this high rate of recovery were applicable. Such are the sites parallel to the beaches where at present there are three or four squatter settlements.

ICT relocation policies in Chambacu

1. Relocation would take place by moving the families to different sectors of the city which they had previously chosen.
2. In the relocation program, ICT would offer each family in exchange for their existing shack or dwelling and any improvements made in the lot, a minimum dwelling in a ICT neighborhood. The average cost of such a minimum dwelling is approximately \$ 800 to 1,000 dollars. This exchange would be offered to all those families whose possessions were worth up to \$ 1,000 dollars. For properties worth more than that amount, the difference would be paid in cash. (28% of the properties were appraised by the owners to exceed the given amount.)
3. Of the 1,509 families, 780 have already been relocated in four different neighborhoods. The average amount of families that are moved into one community ranges between 100 and 300.
4. The day prior to the relocation, each family is loaned a truck and are assisted by ICT personnel and a supervisor who coordinates the moving. The families are allowed to take with them whatever they consider of value in their old dwelling.
5. The land would then be cleared, and necessary infrastructure and filling is done, in order for it to be commercially developed.

Costs:

The estimated cost of the relocation program amounts to \$ 1,475,808 dollars :

Relocation of the families:	US\$ 1,067,223
Other expenses (urbanization costs, etc.)	<u>408,585</u>
Total	1,475,808

The cost of relocation per dwelling amounts to \$ 1,200 dollars. (This price includes the cost of the new dwelling.) Therefore, the ICT has to provide a subsidy of at least 200 dollars to every family, if the appraisal of \$ 1,000 dollars for every old dwelling is accepted as correct.

Socio economic characteristics

The age/sex distribution in Chambacu is similar to that of other low income neighborhoods with 48% of the population being under 15 years and 2% being over 65. The average number of persons per family is 5.2. Although 50% of the population is potentially economically active, only 26% is actually employed. (26% of the population supports the remaining 74%, each person supports 2.7 others).

The average monthly family income is of US\$ 36 dollars and the average monthly per capita income is 7 dollars.

Resistance generated by relocation

Most of these families have been in the neighborhood for over 17 years and 66% of the population stated their being satisfied of the neighborhood. They would only move if they were given a "good deal" plus a new house. In this way they would have legal tenure, access to credit, and other benefits implicit in government programs. Even so, 36% of the people refused to move and were totally against the relocation program; 24% were willing to accept it, and the rest (40%) were undecided.

A great deal of "social work" was needed to convince the population in accepting the relocation proposal. The main bargaining issue was the equal exchange, the old dwelling for the new one in another location.



The case of Blas de Lezo

general information

Blas de Lezo is a large neighborhood (80 hectares) located almost 15 Km away from downtown Cartagena. It was begun in 1960 to test the idea of self-help programs. Families are provided sites and build their own dwellings ("the user as constructor") and, also, provide the community with necessary facilities and utilities.

According to the ICT, it is possible through the use of self-help programs to build a "minimum dwelling" for an amount ranging between US\$ 335 and 800 dollars and payable in terms of up to 216 months and monthly quotas between \$2.35 and 7.80 dollars.¹⁴

The beneficiaries in the program would receive a mortgage from the ICT, providing that their monthly income was not less than 13 and not more than 60 dollars. By 1968, the neighborhood had 1,900 dwellings with an approximate population of 15,000 people and complete sewage, water and electricity services plus two schools, one church, a health post and one police station.

Blas de Lezo was a stepping stone in the urbanization process of many low income families who either sold or rented their previous invasion dwellings to obtain the necessary capital and buy a lot in Blas de Lezo. By 1965, 31% of the population in Blas de Lezo were again using their houses to obtain rent or had sold them, as their value had increased by 25 or 50% since the time of construction.¹⁵ This phenomenon does not apply to most low income neighborhoods, which usually decay into slums; in Blas de Lezo it was due to the amount of propaganda and assistance given to it by the government. The unfortunate fact is that due to the lack of assistance by public agencies, these entrepreneurial families have to change location as a way to improve their present situation, rather than having the whole neighborhood upgrade its physical and economic conditions.



Socio economic characteristics

family structure

In a survey done in 1970 by the International Development Foundation (IDF) covering 163 families, 61% of them had more than four children with only 15% of the families having been abandoned by one of the parents (versus 24% for Cartagena) implying a more cohesive family unit.

Income

FDI estimates that the average daily income of the surveyed families is of US\$ 2.20; that is approximately US 50 cents higher than that in other low income neighborhoods. Still, the families living in Blas de Lezo spend an equally high proportion of their income on food. FDI estimates this expense to be US\$ 1.70 (75% of the daily income)

This equally high food expenditure is due to:

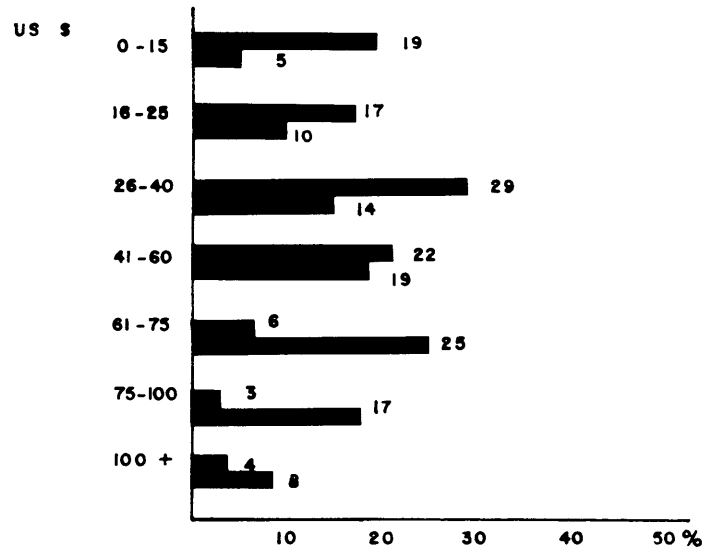
1. The distance of the neighborhood from the central market place and downtown Cartagena, (which causes food price speculation by those merchants selling goods within the neighborhood.)
2. The number of relatives that move into the dwellings is higher than that for other similar communities due to the "high status-quo" attributed to living in Blas de Lezo. (there were 589 relatives among the 263 interviewed families.) The number of persons per dwelling is 7.3 versus 5.2 in other low income areas.¹⁶

Education and employment: As 70 % of the population has had over four years of schooling, the level of education in Blas de Lezo is high.

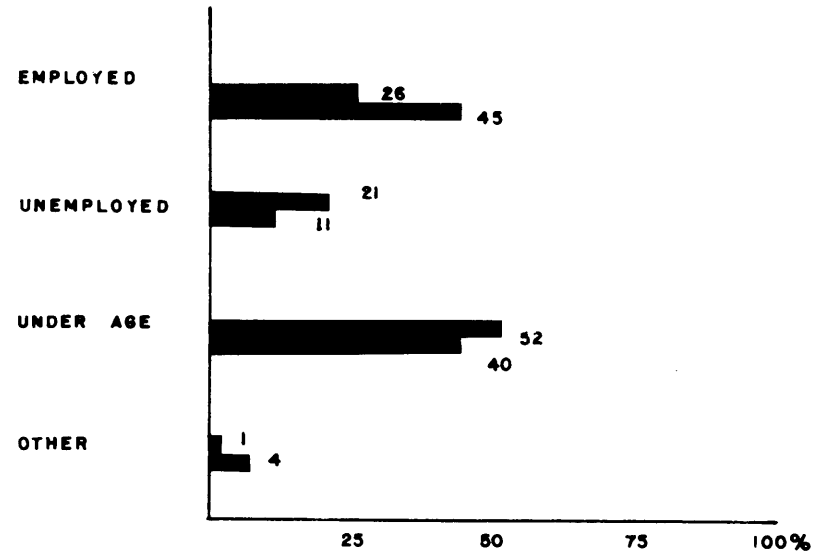
Sixty-eight percent of the surveyed population considered themselves to be "technicians" or "experts" and 81% stated to have a job, while only 19% were unemployed.¹⁷ It is important to notice that these families were qualified even before they arrived to

CHAMBACU / BLAS DE LEZO

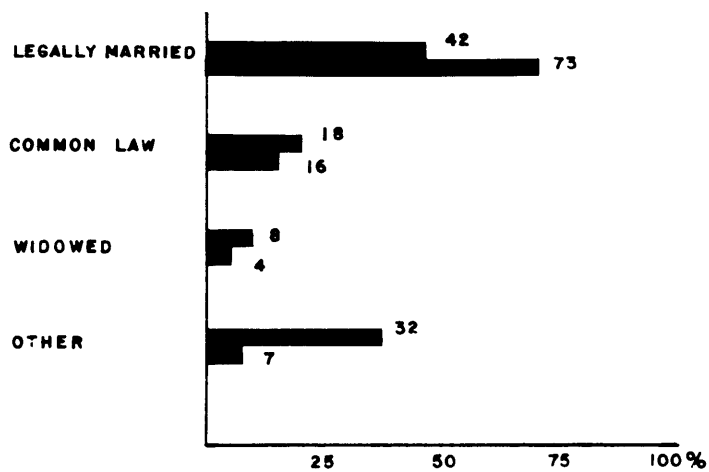
FAMILY MONTHLY INCOME



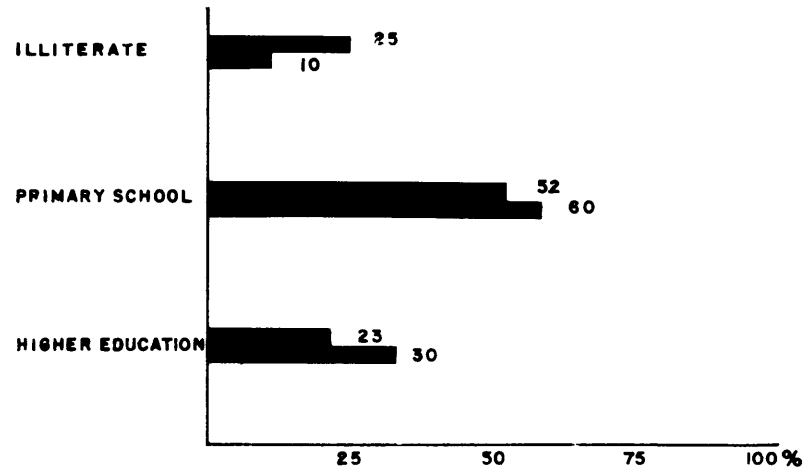
EMPLOYMENT



MARITAL STATUS



EDUCATIONAL LEVEL



Blas de Lezo, so that these figures cannot be attributed to the positive influence of the neighborhood.

Organization and functioning of the community programs:

The basic unit used to organize the labor was the neighborhood block. After the people had finished building their dwellings, they took advantage of their organization and proceeded to solve the most pressing problems affecting the community, which in this case was paving the streets. This issue became the rallying force as it represented a serious obstacle to the inhabitants well-being. (During the rainy season the streets would be flooded making access to the dwellings difficult and creating health hazards.)

The relative ease with which these families grouped together and their efficiency in solving the problems can be attributed to the following factors:

1. The knowledge and organization already available because of the self-help housing program.
2. The common concern shared by the community with the lack of street paving.
3. Their awareness of the incapacity of the municipality to provide this service. (due to the lack of funds and the low priority of street paving)
4. The effective social pressure of assuring cooperation in the community. (i.e ridicule, fear, friendly persuasion) versus the lack of success of institutional measures in accomplishing the same task.

The main drawback to such community organizations is the disintegration they suffer once the main problems have been solved. The same case applies to squatter settlements. In the case of Blas de Lezo, after the dwellings and services (including street paving) had been accomplished, the organization collapsed and failed to lead to further improvements in the conditions of the families. (the available energy



was used in accomplishing individual goals such as improving the dwelling. Twenty-four percent of the houses were improved and 66% were enlarged by 1970). In the most recent survey (1970) only 14% of the families were actively involved in communal programs.¹⁸ The crisis of participation is further reinforced by the danger implicit in external aid. If the participants become accustomed to working only when external material "rewards" are given, then their capacity to act will be directly related to such rewards. That is to say, the incentives become goals in themselves and the original purposes of the project lose importance.

Advantages and disadvantages

1. Usually self-help programs are assisted both in economic and technical terms by the government, and they also are given a great deal of attention and propaganda.
 2. The technical know-how of some of the participants, whose normal job is in construction.
 3. The indigenous systems of maintaining interest in projects, available in some autonomous communities during their dynamic stages.
-
1. The tendency to distribute the financial aid in small portions given to different groups in the community and which end up lost or wasted on account of their insignificant size.
 2. The lack of available monetary resources within the neighborhoods.
 3. The problem of status-quo, translated in the conception of manual work as a demeaning activity.



Implications from case studies

At the public level:

1. Housing packages are neither compatible with the interests of the low income families nor are they viable in economies suffering from a scarcity of economical resources as found in developing countries.

If housing packages are provided, subsidization of the house is required or a high rate of default payments will occur. These high subsidies limit the benefits to only a small segment of the population.

There are three levels of analysis and action in which the government can operate.* The levels are defined in terms of risk in investment and rate of returns.

The first level is that of housing packages which have high risk and low returns. An intermediary level is that of "component programs" in which partial services are provided, (road and transport, or water and electricity) following the priorities of the potential users.

The third level is considered as the least risky and the most reproductive level of action and consists of providing elements. These elements which are common through the three levels are: land, building materials, tools, labor, management, finance and credit.

"The obvious conclusion is that the conventional priorities must be reversed if significantly large numbers of people are to be served by public action and if that action is to generate any significant increase in housing investment without draining the national budget and economy." ¹⁹

* after professor John Turner at MIT

2. Relocation policies usually are detrimental to the self-sufficiency of the communities and forces them into a state of dependency on government programs. Families are only willing to relocate when they may have a lot to gain economically which usually implies high government subsidies.

At the user level :

1. Community participation depends on a sense of autonomy and is related to the age of the neighborhood.
2. The higher the income, the lower the level of physical involvement by the inhabitants. At times this lack of direct involvement is compensated by economic contributions.
3. The dwelling will only become important at a later stage in the process of consolidation of the families, the incipient stages being concerned with communal environmental problems. Once the dwelling becomes the key investment, a neighborhood is searched for in which the valorization of the house is assured as in the case of Blas de Lezo.
4. After the initial obstacles impeding "progress" have been removed, community organizations usually collapse. At this time incentives or other external "inputs" might be desirable in order to maintain the self-sufficiency and capacity for action of the community beyond the consolidation stages. Perhaps the case of the Juntas Vecinales in Chile should be studied, as there, the organizations become "labor unions" protecting the interests of the families.

Context: **PROTOTYPE DEVELOPMENT**

Content: PLANNING POLICIES AND GOALS
REASONS TO HAVE CHOSEN THE CIENAGA SECTOR
VIABILITY OF THE REHABILITATION AND RELOCATION POLICIES
ADVANTAGES OF REHABILITATION PROGRAMS
THE EXISTING SITUATION
PLANNING CRITERIA
LAND SUBDIVISION
TYPICAL SEGMENT
CIRCULATION
PROTOTYPE DEVELOPMENT

Prototype Development

Planning policies and goals:

The policies and goals determined for the Cienaga are:

- A. Type of program: Site and services (provision of site with attendant services.)
Area: approximately 582 Ha.

- B. Land use context: Primary use: residential community with a maximum of 21,000 families and supporting commercial and community services
Target income group: families earning \$300-1,000 dollars per year.
Intensity of use: medium density; 350-400 persons/Ha or 60 dwellings/Ha.
Land tenure: private ownership
Financing group: mainly government for filling and infrastructure; families finance dwellings.

- C. Time context: Incremental growth divided in five stages.

Reasons to choose the Cienaga region:

1. It comprises approximately 20% of the total population of Cartagena.
2. Most of the Cienaga families live in inadequate environmental conditions.
3. The "marginal population" has become "politicized" and demand an improvement in their material living standards.
4. The municipal authorities have recognized these demands and are searching for ways in which to assist these families.
5. The available policies to the government are: relocation of the families to another site or rehabilitation of the present site.

Viability of the alternatives

1. Socio-political:

RELOCATION POLICIES are usually resisted by the low-income families.

Due to the number of people who have become identified as a single group in the Cienaga sector, it is dubious that relocation could take place without the need for either police action or large "economic incentives" such as government subsidies.

A high level of dependency is also imposed on the families once they have been relocated on account of the destruction of their socio-economic autonomous systems.

REHABILITATION POLICIES sometimes imply heavier economical costs, but do not incur into most of the social/political problems. Rehabilitation policies are generally not resisted by the affected families if they are allowed to participate in the "decision-making process" and the project itself.

The "existing socio-economic system" is allowed and encouraged to continue operating through the use of incentives and government assistance, assuring relative stability of the neighborhoods.

2. Economical :

RELOCATION costs may be approximated from the case of Chambacu. The cost of relocation per dwelling is approximately \$1,200 dollars which when multiplied by 9,000 (the total amount of families to be relocated in Cienaga) equals to a total of \$10,800,000.

In Chambacu almost 40% of the relocation costs went into "other expenses" which would increase the cost of relocating the families of Cienaga to \$15,120,000.

There are also "hidden costs" such as "social programs" which are required to inform and convince the communities on the values of the particular projects.

Although part of these costs are necessary in both relocation and rehabilitation programs, in the former, the resistance presented by the families is much greater than that in the latter.

For Chambacu it signified approximately five years of educational programs prior to moving the families.

REHABILITATION costs for comparison are obtained from studies done for the Cienaga sectors as well as for other similar areas within Cartagena.

According to the report of Dr. Alberto Villegas in 1969, the cost of filling the area of the Cienaga sector (up to the required height) was estimated at \$1,325,000 dollars.

From another report done in 1970 by the Oficina de Rehabilitacion de Tugurios for an area similar to that in the Cienaga , it was found that the rehabilitation and provision of infrastructure for 19 hectares would cost approximately \$475,000 dollars. When applied to the Cienaga, this site and services project implies a cost of \$14,500,000 dollars.

To rehouse the existing 9,000 families, Blas de Lezo serves as a model both in terms of cost estimates as well as the demonstration of the viability of self-help programs. If an average cost per dwelling of \$500 dollars is accepted (from the ICT estimates for Blas de Lezo), it is found that the total costs for the 9,000 dwellings would be \$5,040,000 dollars.

Summary:

For relocation, the costs:

relocation and moving of 9,000 dwellings:	\$10,800,000	
other expenses	<u>4,320,000</u>	
total	\$15,120,000	cost per dwelling \$1,200

For rehabilitation, the costs:

rehabilitation of 116 Ha.	\$ 2,755,000	
construction of 9,000 dwellings	<u>5,040,000</u>	
total	\$ 7,795,000	cost per dwelling \$866

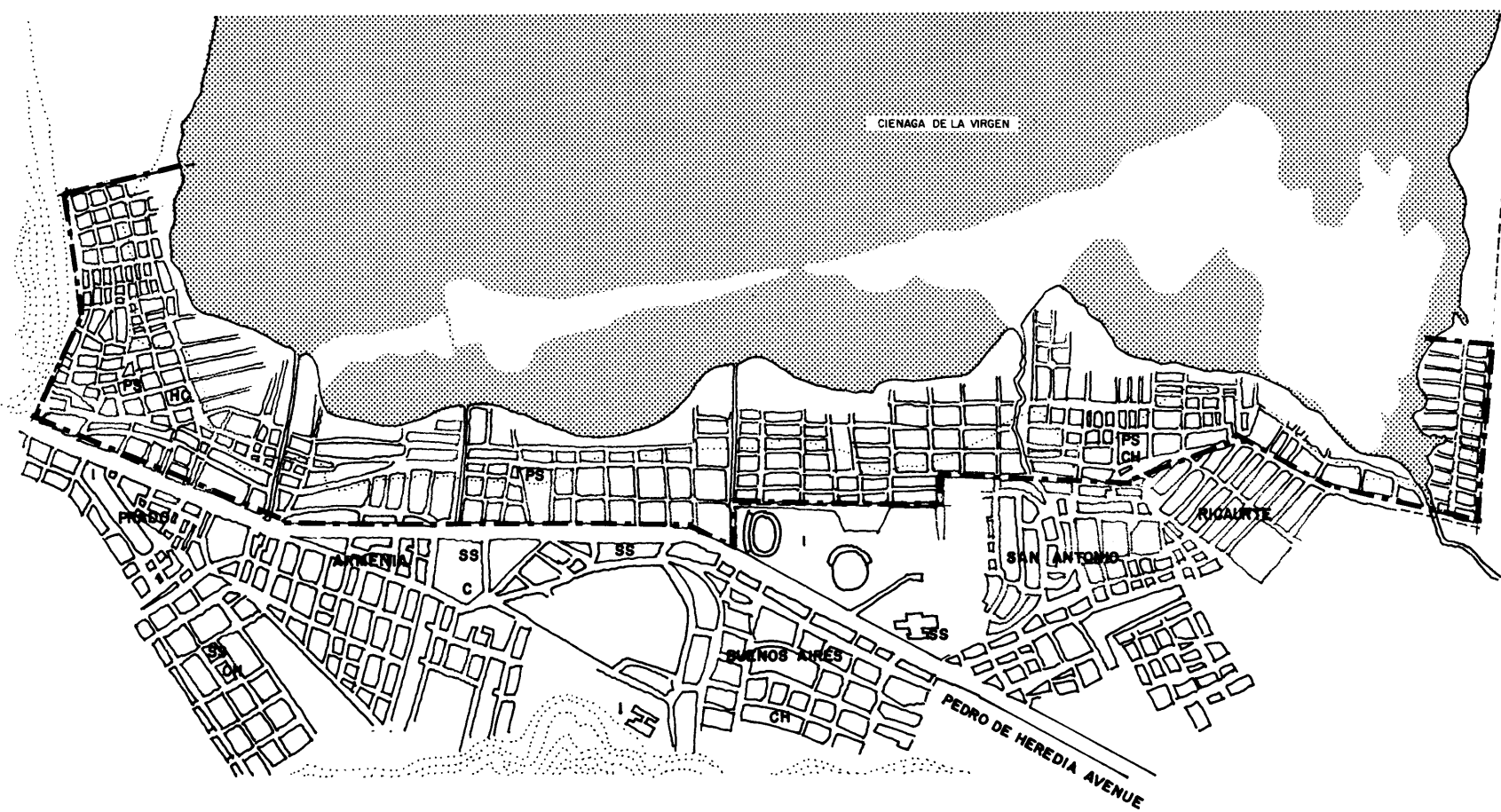
If only the rehabilitation costs of fill and infrastructure are taken into account, each family would only have to pay \$306 dollars to cover for the provision of such services.

Giving ten years as an adequate time lapse in which to pay such an amount and with a rate of interest of 5%, the amount per year to be paid is \$31.50 or \$2.60 a month. The average available income for housing expenses is \$6 dollars a month in the Cienaga region.

Advantages of a rehabilitation project

1. Although the above estimates are very approximate, the costs of rehabilitation are not necessarily higher than those of relocation, specially when taken into consideration the socio-economic benefits obtained by not fighting against the families, or disrupting the stability of the community.
2. In the Cienaga case, rehabilitation provides the possibility of doubling the population capacity of the site at a relatively low cost per family.
3. Independently from the proposed site and services project, the Cienaga itself is going to be ecologically and environmentally rehabilitated by the government. Extensive dredging will be undertaken in the bay. The dredged material (named "caracolejo") is an excellent fill and is a good base for the construction of dwellings.
4. The Cienaga families have lived in the site for a long time and have invested their resources there. These resources would probably be lost if relocation took place.
5. A rehabilitation project would take maximum advantage of the capacity and technical ability of each sector involved. The municipality would provide infrastructure and land-fill works, both of which require a certain amount of technical know-how. The families would contribute with the construction of their dwellings, thus avoiding the misinterpretation of priorities and needs common in government housing programs.

Existing Situation 8



- PS PRIMARY SCHOOL
- SS SECONDARY SCHOOL
- P PLAYING FIELD
- CH CHURCH
- C CLINIC
- HC HEALTH CENTER
- I INSTITUTIONAL

CIENAGA DE LA VIRGEN SECTOR

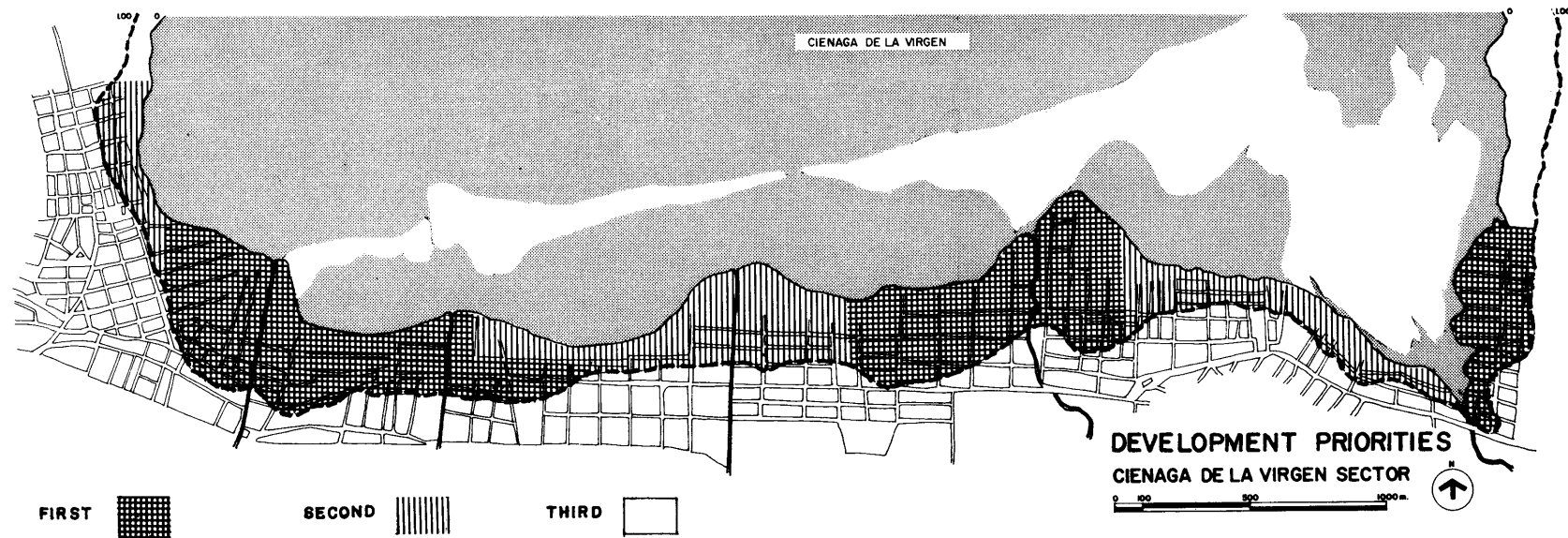
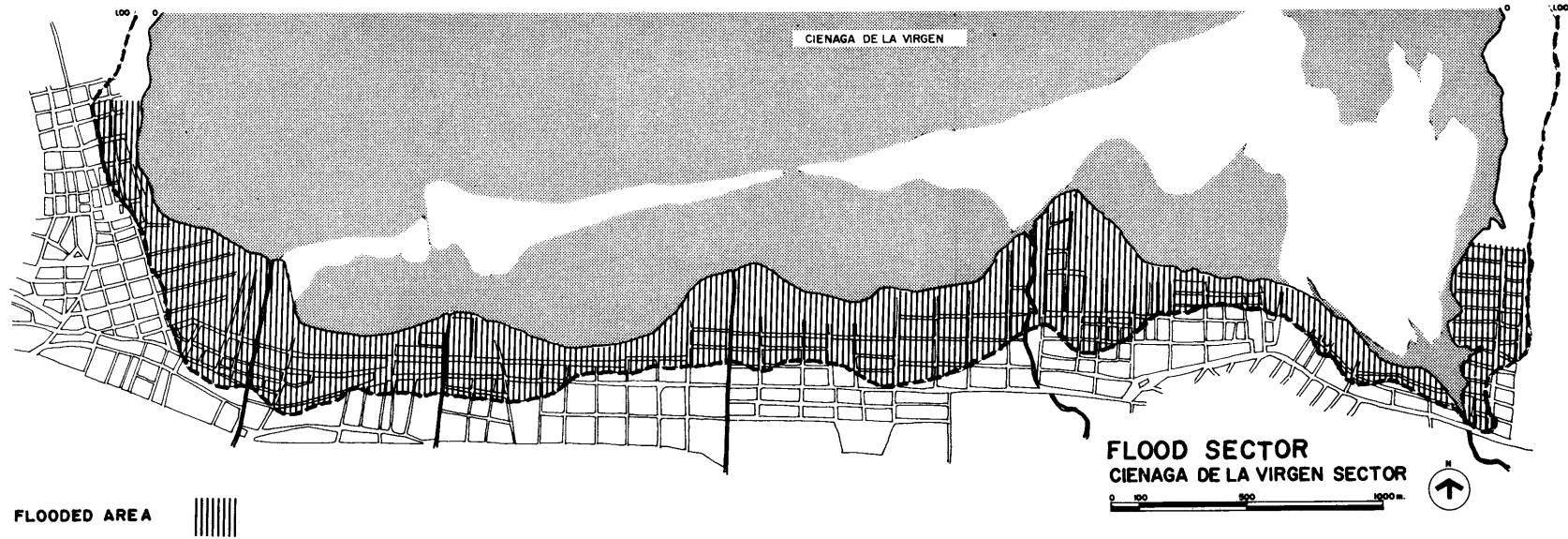
0 50 100 1500 m



Planning criteria: General, land use and land sub-division

1. The area will be rehabilitated due to the existing environmental and housing conditions existing below the 1.00 meter level.
2. The major rehabilitation required is land fill and the provision of infrastructure; 50% of the site being below the 1.00 meter level and subject to flooding impeding implementation of services such as sewage.
3. In order to rehabilitate the site, 2,755 dwellings would have to be moved which at present are located below the 1.00 meter height.
4. Due to a potential of minimizing wasted space as implied in the present lay out and increasing the density from 265 to 400 persons/Ha. only a relatively small portion of the site would be required to house the 9,000 families presently living there.
5. With a newly proposed lay-out plus the additional land regained from the Cienaga, the site could contain up to 23,000 families. The growth of the site would permit the connection of utilities into the main urban system as needed.
6. It is possible to give a prime location to all the families as measured by access to transportation ; existing facilities and the city at large. At present, the families living in Fredonia are 5 Km. farther out than those living in Candelaria or la Esperanza.
7. The best location in the site is between the Popa hill and the area in front of the Stadiums, having the Pedro de Heredia Avenue run parallel to the south boundaries with all its commercial and institutional facilities.
8. A new avenue is being widened and paved running the length of the site and paralleling the Heredia Avenue. This new avenue would be used as the major circulation distributor with pedestrian circulation encouraged over vehicular traffic. The completion of this avenue is anticipated in two years.

Priorities of Development 8



9. A main canal parallel to the 1.00 meter level has been proposed by the municipal authorities and is intended to serve three purposes: 1) To act as a barrier to any further invasions once the site has been cleared. 2) To provide filling material for the areas adjacent. 3) To provide drainage to the newly filled areas while a complete infrastructure system is laid out.

Three smaller canals would connect the main one with the Cienaga itself. These canals would replace the existing ditches and contain the sewage lines which would lead to oxidation lagoons already proposed for the Cienaga.

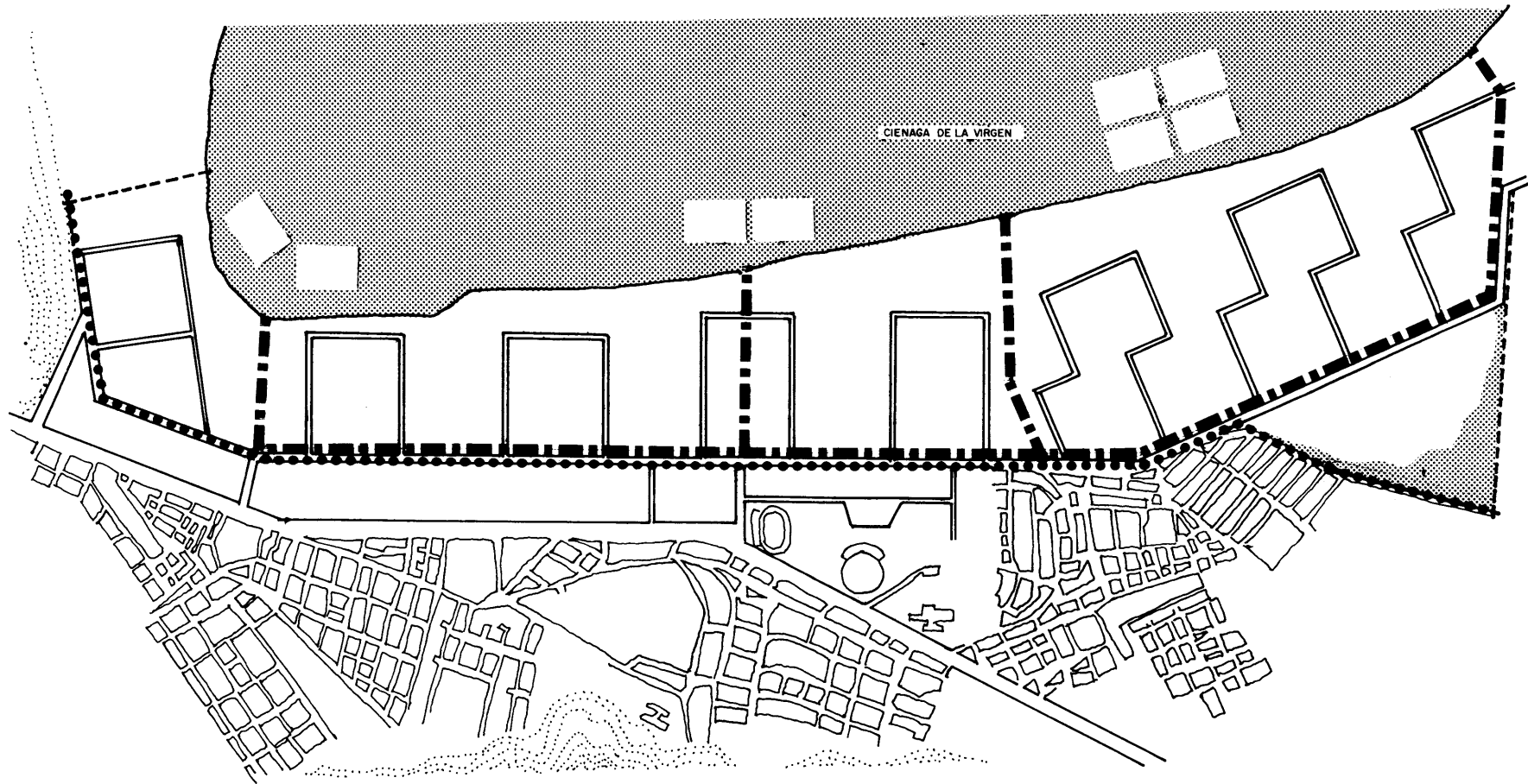
10. The south west area between the new avenue and the Heredia avenue, could, in time, become totally commercial and contain light-industries which would both provide jobs and create outlets for products manufactured within the neighborhoods. This area at present already has small commercial and industrial facilities paralleling the Heredia avenue.

As this area is above the 1.00 meter level, it does not require any immediate assistance and could be slowly improved with the provision of services and economic aid where needed. This area could also hold higher structures, therefore, before full consolidation of the present activities has taken place, it would be important to plan the necessary changes in street widths, traffic system, etc.

11. The area immediate to the stadium and bordering the newly created avenue could be used for communal activities (such as health centers, churches, communal headquarters, etc.) as it is centrally located within the site.



12. The spaces next to the water (the Cienaga and channels) are left open and provide the required recreational areas including facilities such as primary schools, nurseries, etc.

Proposed Improvements 8



-  CHANNEL
-  OXIDATION LAGOON
-  NEW AVENUE

CIENAGA DE LA VIRGEN SECTOR



13. To the southeast of the site, a large area is left open as reserved land for the future development of any demanded activities.

14. It is recognized and considered in the planning of the site that a water based network of transportation or recreation could be established in the future.

15. The project also attempts to enhance the natural assets of the Cienaga by integrating it into the urban environment.

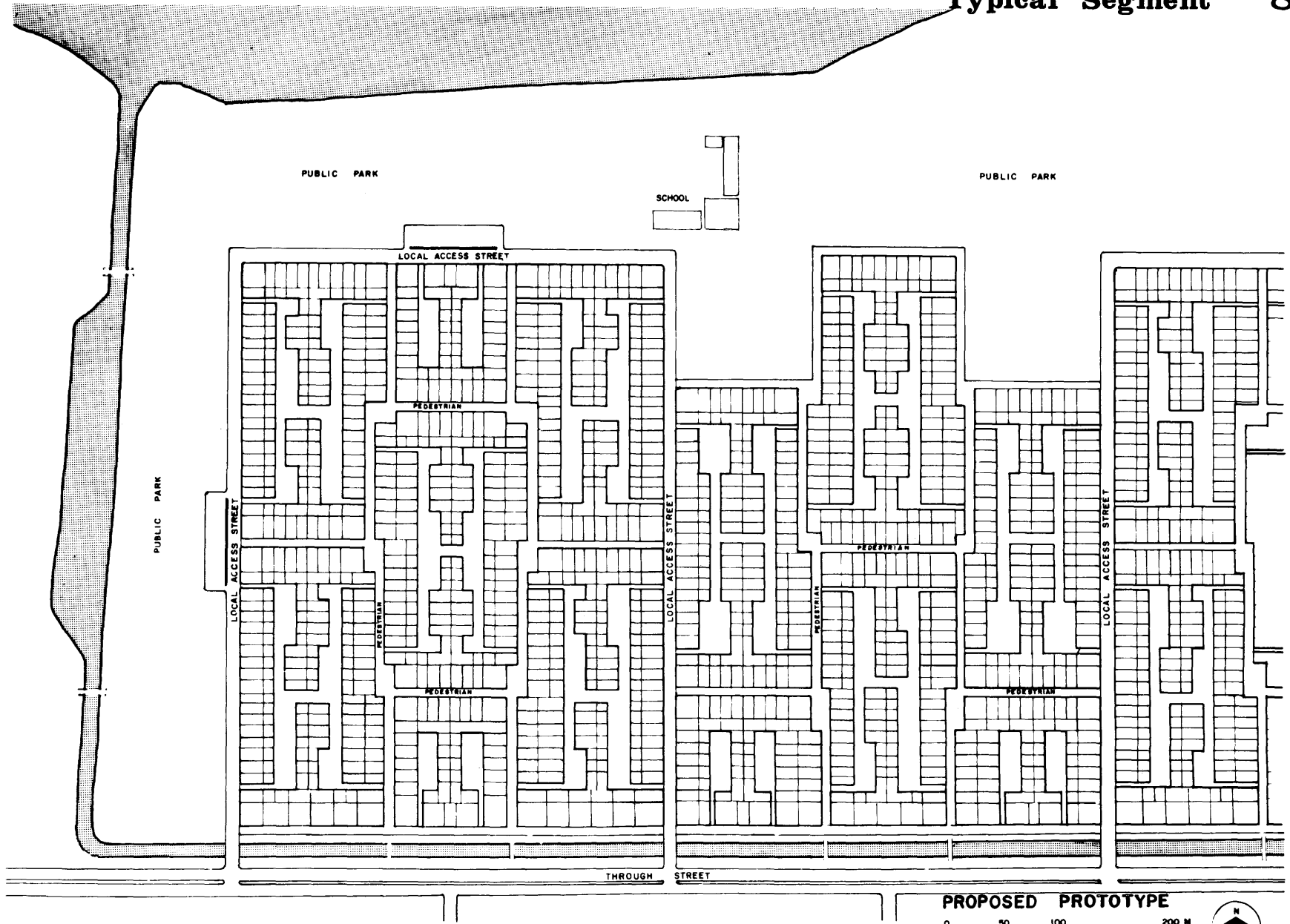
Land subdivision

1. It is recognized that in the Colombian case the traditional Hispanic urban grid system is not the optimum for low income neighborhoods if it implies the design of small blocks surrounded on the four sides by public streets for intensive vehicular use. The waste in vehicular circulation space is not justified by the reality of the economic situation of the families.

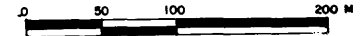
2. It is important to minimize "wasteful public property" as: 1) they lead to becoming garbage dumps requiring continuous maintenance by the municipality, 2) reducing the cost of the public sector investment through the minimization of the length of infrastructure per area served, 3) removes land from private ownership whose costs support the public area.

3. The above premises (1 and 2) lead to a type of land subdivision known as "cluster or horizontal condominiums" where lots are grouped together around a common space which also provides the circulation system. This communal space is owned in condominium by the dwellers which control, share the use and responsibility for its maintenance.

Typical Segment 8



PROPOSED PROTOTYPE



4. The circulation network provides the framework on which the site is developed. It defines the path of movement as well as the spine from which all the attendant services branch off.

The following circulation modes are considered:

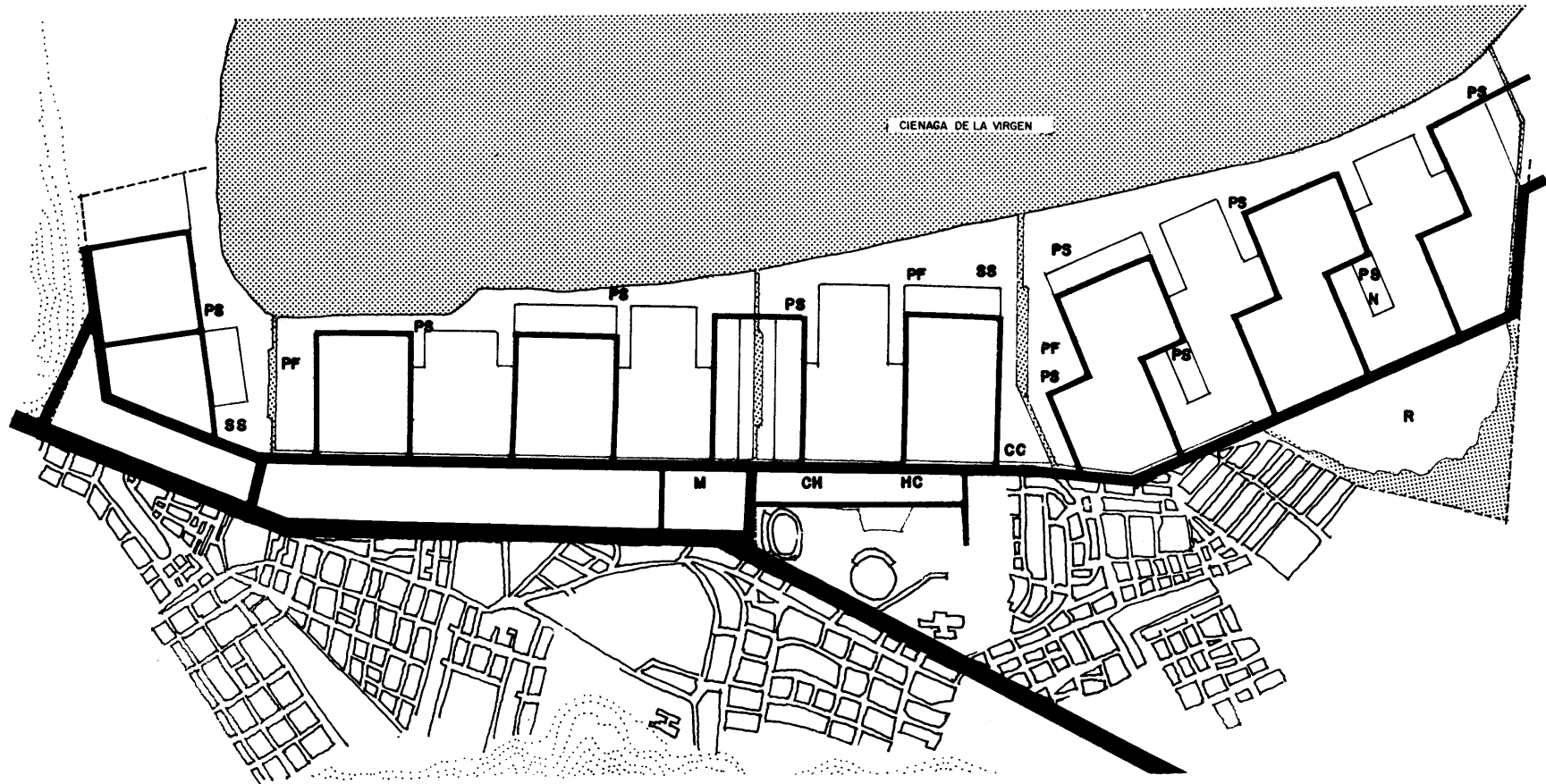
- A. Pedestrian only: example: a network of pedestrian walkways
- B. Pedestrians and vehicles mixed: where pedestrians dominate over vehicles; vehicular traffic is controlled by street layout depending on intensity of use. example: local streets in residential areas and the "peripheral loops".
- C. Vehicles and pedestrian mixed: vehicles dominate but do not control circulation. Controls are established for the protection of pedestrians: example: cross-walks, traffic lights, etc. major commercial streets, transverse connectors, etc.
- D. Vehicles only: exclusive use by vehicles: example: the Pedro de Heredia avenue (if it becomes a major interstate highway.)

Note: (The water ways are considered to be viable to be used as a transportation system.)

Two major systems are defined:

- A. The external network connecting the site with the urban complex.
- B. The internal network distributing the movement within the site.

The axis of movement being defined by the two major existing forces: the water and the Heredia avenue.



- PS PRIMARY SCHOOL
- SS SECONDARY SCHOOL
- PF PLAYING FIELD
- N NURSERY
- HC HEALTH CENTER
- CC COMMUNITY CENTER
- CH CHURCH
- M MARKET
- R RESERVE

- ACCESS - PEDRO DE HEREDIA AVENUE
- THROUGH STREET
- LOCAL STREET

PROPOSED PROTOTYPE

CIENAGA DE LA VIRGEN SECTOR



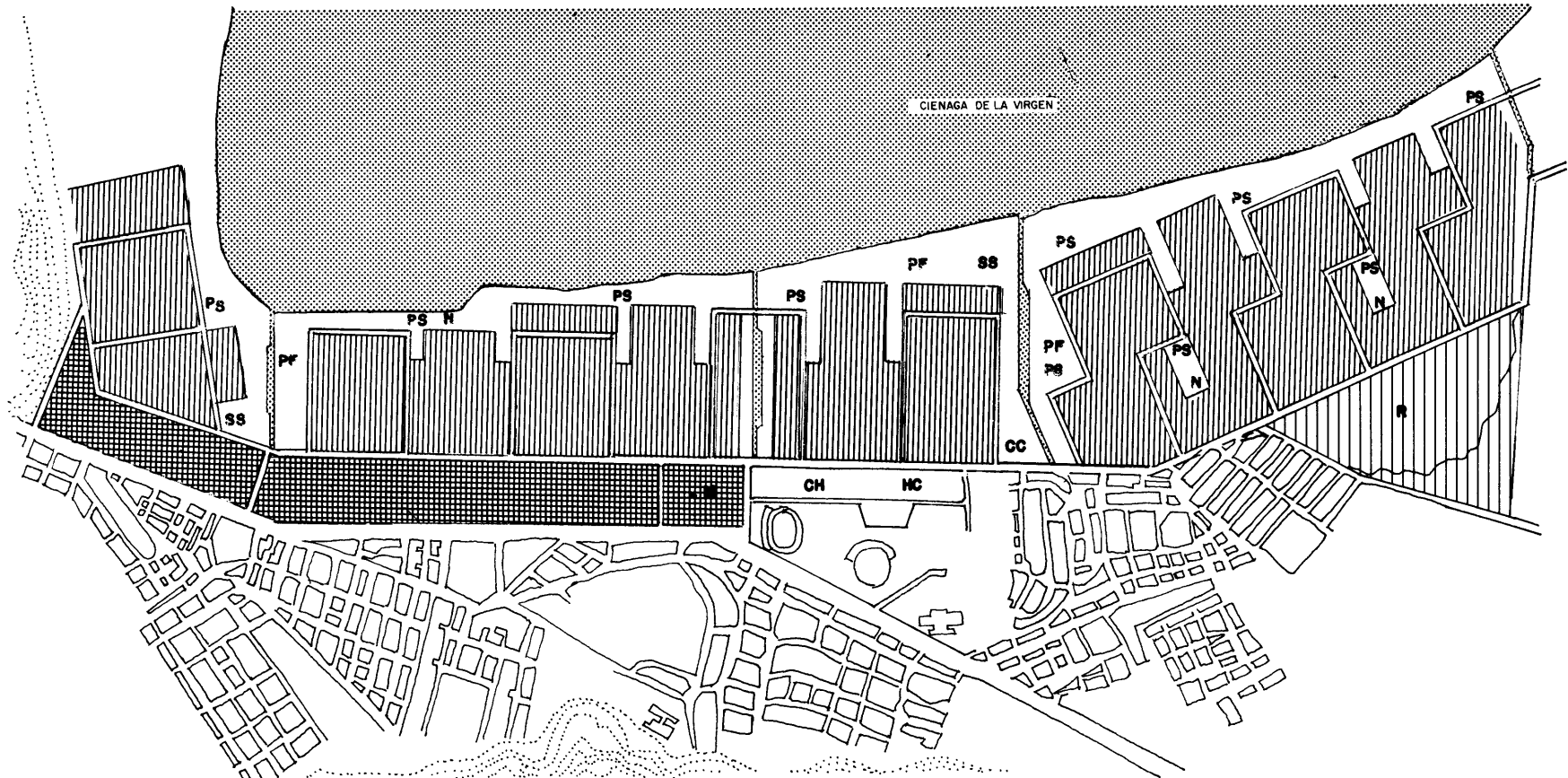
5. It is accepted that the construction of the dwellings would be left up to each family to decide, and that "unconventional" use of standards and materials would be permitted. To those interested, financing would be offered for the purchase of building materials.

6. Prior to moving the families, the lot layout would be available so that the dwellers have a choice in reference to their future location. This is an attempt to preserve certain neighborhood structures which have been considered to be important.




7. The provision of different lot sizes allows for a degree of flexibility in the development of each cluster.

8. The distance of movement between the old location and the new location would be minimized.

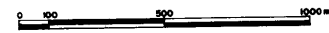
<u>LAND USE PLAN</u>	ha.	%
Gross area within boundaries of site	582	
AVAILABLE LAND FOR DEVELOPMENT		100%
PUBLIC OWNERSHIP AREAS		
Parks	59	
Public Facilities	55	114
Circulation	25	5%
PRIVATE OWNERSHIP AREAS		
Residential	353	60%
Commercial/Industrial	60	10%
Reserve Land	30	5%
NUMBER OF DWELLINGS		
at 58 units/ha.		20,474 dwellings
at 66 units/ha.		23,298 dwellings



- PS PRIMARY SCHOOL
- SS SECONDARY SCHOOL
- PF PLAYING FIELD
- N NURSERY
- HC HEALTH CENTER
- CC COMMUNITY CENTER
- CH CHURCH
- M MARKET
- R RESERVE

-  RESIDENTIAL
-  COMMERCIAL - LIGHT INDUSTRY
-  RESERVE

PROPOSED PROTOTYPE
CIENAGA DE LA VIRGEN SECTOR



Site development:

The site will be developed in stages according to existing and potential needs of the low income sector in Cartagena.

Different design units are considered:

1. The site as a whole: considerations with land fill; urban infrastructure; circulation network; population density
2. The area needed to house the 9,000 relocated families (116 Ha. or 20% of the total site) considerations of the ways of integrating the area into the transportation and services network; minimizing the distance to available facilities and to the present location of the dwellings; proximity to drainage channels.
3. The communal unit (defined by peripheral circulation loops); consideration of approximately 840 families; neighborhood shopping units; pedestrian and vehicular circulation; primary school.
4. The dwelling cluster (defines the immediate neighborhood which includes approximately 140 dwellings); consideration of access to each lot; size and use of communal spaces; privacy of cluster.

The growth of the site has also been divided into five stages in order to allow for the incremental location of the families following priorities on the urgency of solving their physical conditions.

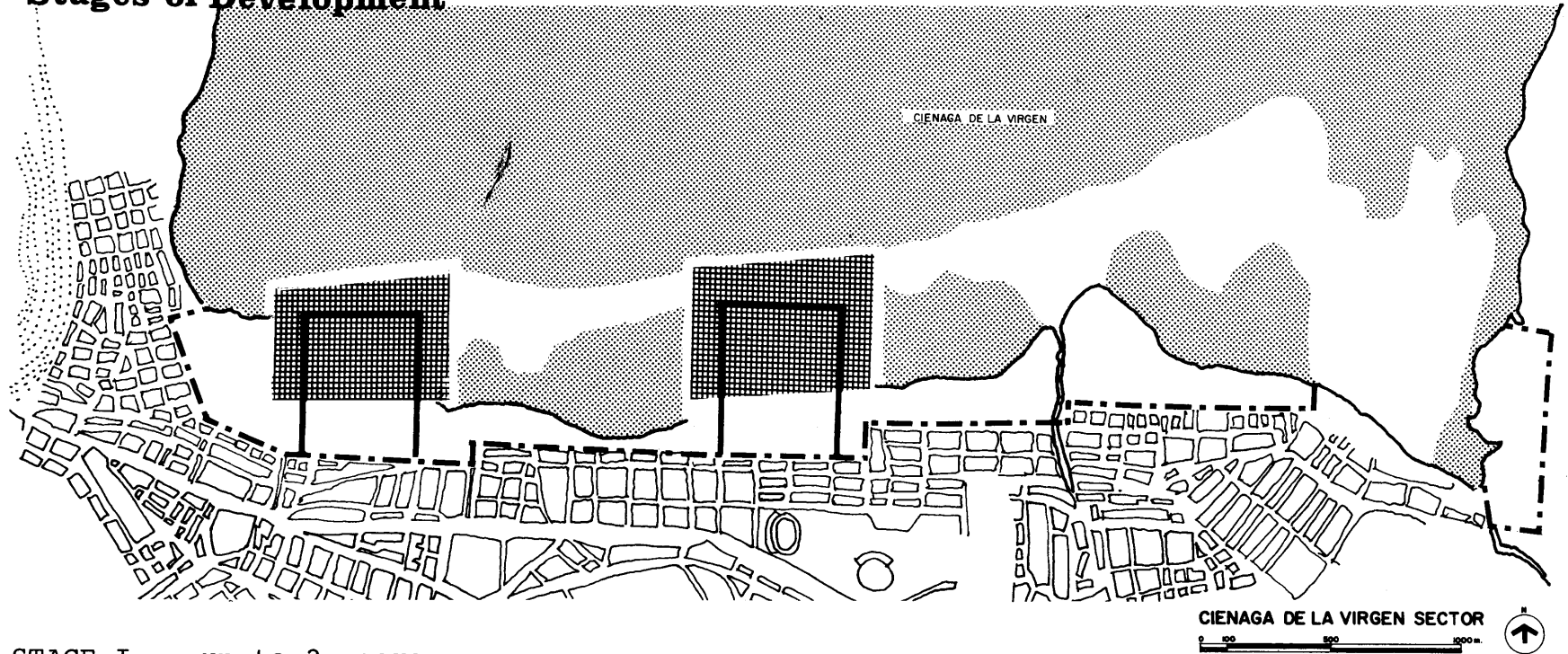
The priorities of family relocation within the site and service project depend on:

1. Family location above or below the one meter level and its incidence of flooding.
2. Family location with respect to access to facilities and services, transportation, etc.
3. The material standards of the dwellings, giving high priority to the totally inadequate houses.

Advantages of staged development:

1. It allows for flexibility of physical growth and of economic investment.
2. It allows the possibility of "feed-back" prior to the completion of the project and to adjust policies where needed.
3. It takes advantage of the limited output of dredging being carried out in the Cienaga.
4. It impedes the potential invasion of the newly available land by not having the whole site filled and rehabilitated at once.

Stages of Development



STAGE I : up to 2 years

AREA TO BE FILLED : approximately 58 ha.

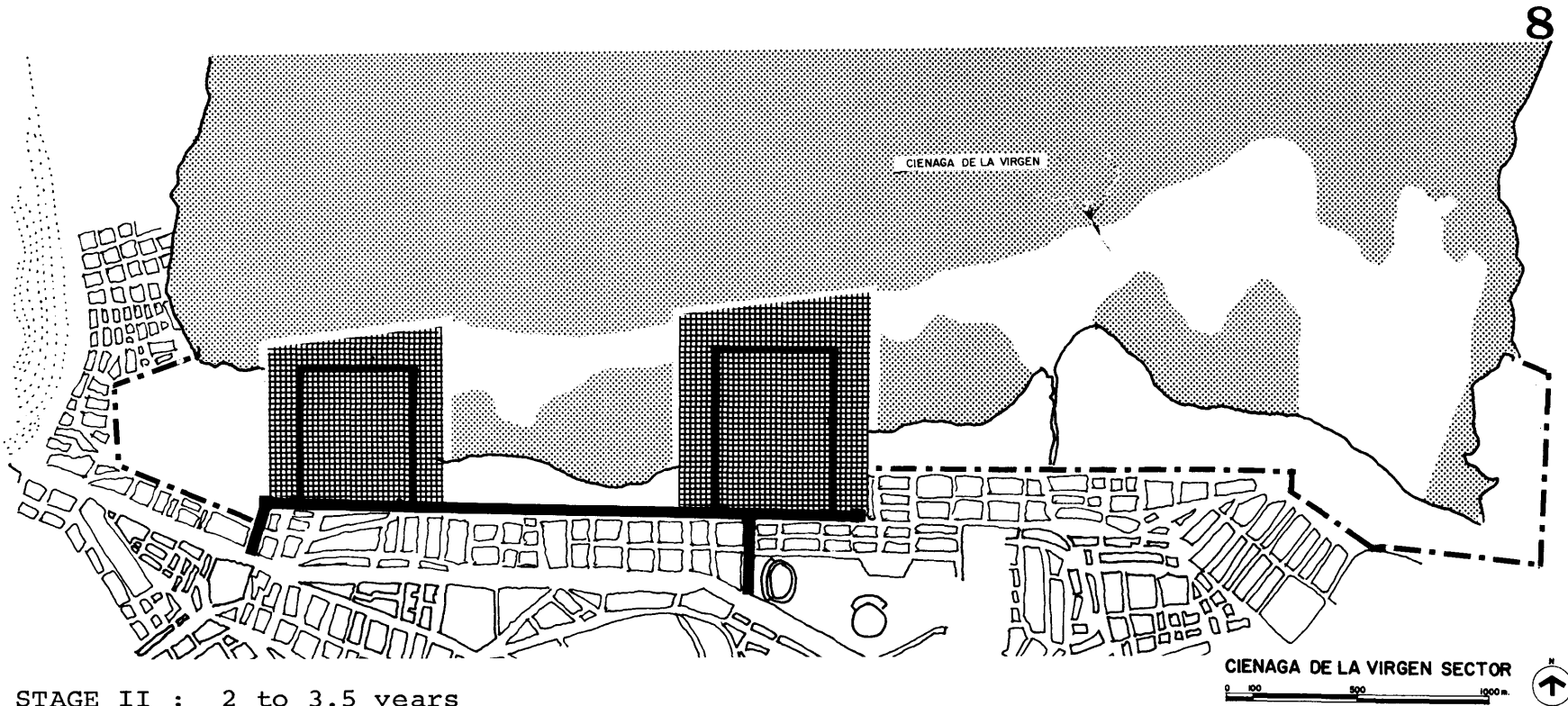
HOUSING : Total: 2,542 dwellings; at a rate of 20 dwellings per week;¹ 62 dwellings/ha. and using 60% of the newly filled land for residential purposes.

CHARACTERISTICS : Two poles of development are created in order to minimize the distance between old and new locations. The poles are located where minimum filling problems are found, while being near to channels to be used for drainage. They are situated outside the existing area so as not to require the moving of families prior to having an already rehabilitated land. Utility layouts would take advantage of their proximity to existing services. Families are moved from existing flooded areas into newly filled land. Sectors of the now vacant land are progressively rehabilitated.

CIRCULATION : Peripheral loops are created to connect the new land with the existing circulation system; they also contain the utility network. The axis of movement responds to the major forces in the site: the water and Pedro de Heredia Avenue.

COMMERCIAL : Small local stores are allowed to take place in the open spaces within the communities; they would fulfill the daily needs of the dwellers. All major commercial activities would be satisfied by the facilities existing in the adjacent areas.

PUBLIC SERVICES : Initial development of the required services; i.e. schools.



STAGE II : 2 to 3.5 years

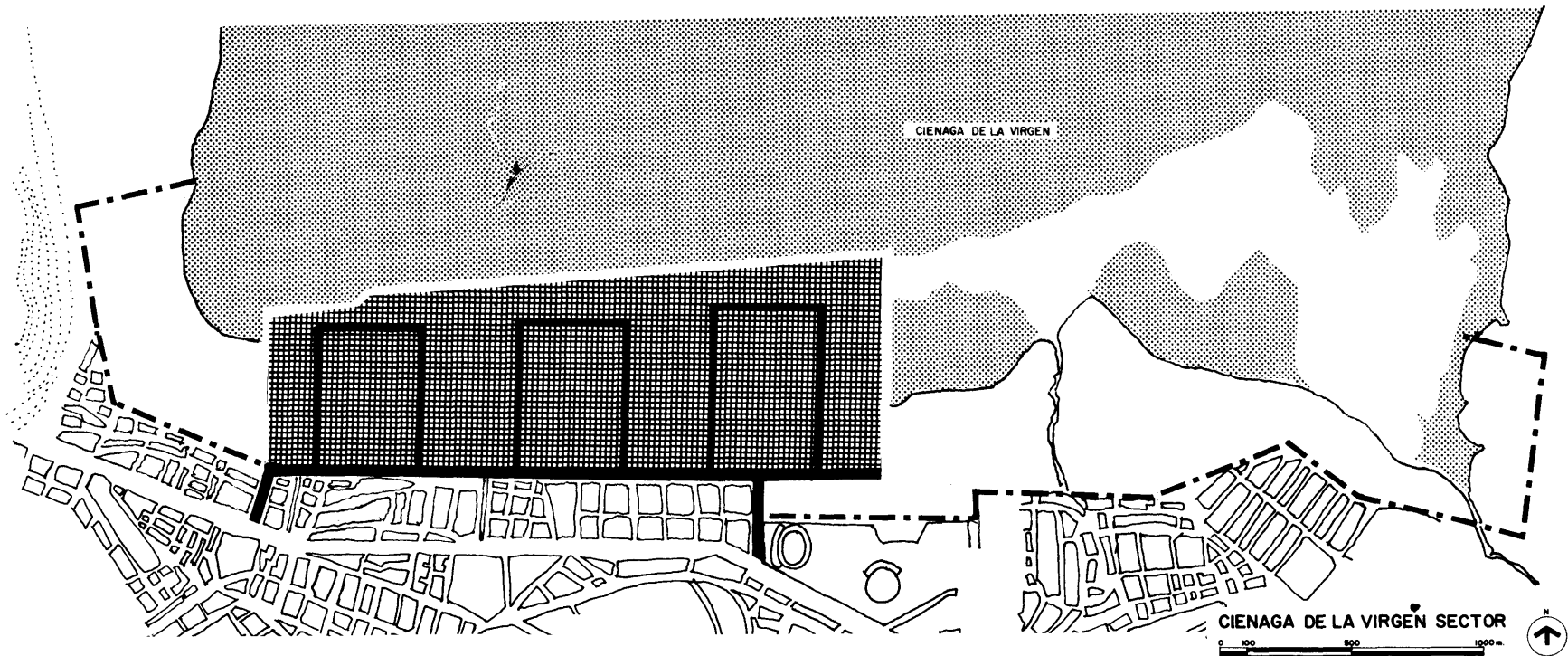
AREA TO BE FILLED: approximately 36 ha. (Total filled area: 94 ha.)

HOUSING : 1,550 additional dwellings. (Total dwellings: 4,092)

CHARACTERISTICS : The newly filled areas complete two community units with their respective facilities and utilities and bridge the gap between the newly settled land and the existing stable neighborhoods. The project may also now be evaluated and necessary changes may be implemented.

CIRCULATION : The peripheral loops are completed, including the interior pedestrian network. The loop roads are integrated into the main circulation artery within the site.

COMMERCIAL/ PUBLIC SERVICES : consolidated and expanded as required.



STAGE III : 3.5 to 6 years

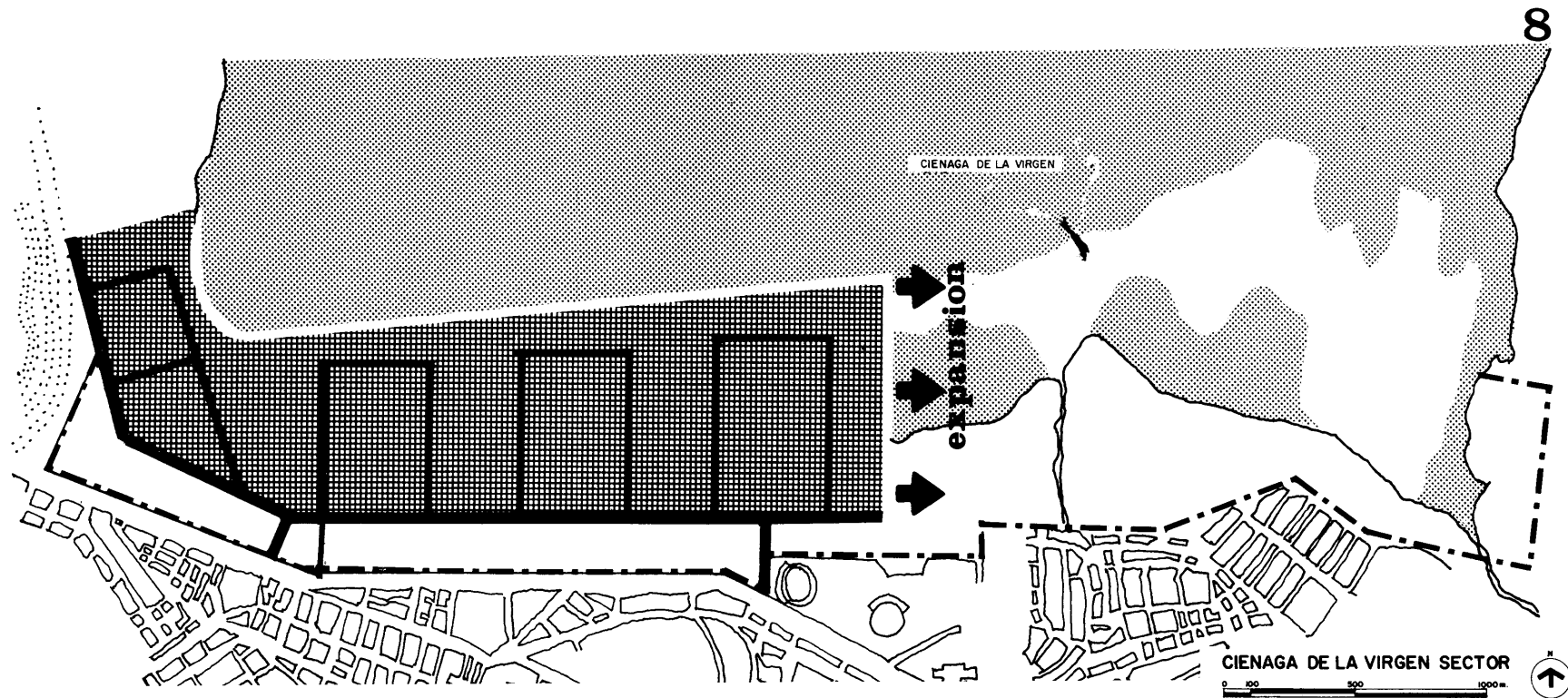
AREA TO BE FILLED : approximately 61 ha. (Total filled area: 155 ha.)

HOUSING : 2,666 additional dwellings. (Total dwellings: 6,758)

CHARACTERISTICS : The area between the two established poles is filled and rehabilitated.

CIRCULATION : The three loops and their internal networks would be bordered on the south by the main circulation spine.

COMMERCIAL/ PUBLIC SERVICES : consolidated and expanded as required.



STAGE IV : 6 to 9 years

AREA TO BE FILLED : approximately 70 ha. (Total filled area: 225 ha.)

HOUSING : 3,038 additional dwellings. (Total dwellings: 9,796)

CHARACTERISTICS : The central and eastern sections of the site would be totally rehabilitated. By this stage the filled land with utilities and facilities, would house the 9,000 families now living in the Cienaga. Most of the families would be now located in the east part of the site closest to the city and its services.

Two hundred and fifty seven (257) ha. are left for future expansion, allowing for the controlled incremental growth of the site up to its saturated capacity. (23,000 dwellings)

CIRCULATION : The main circulation spine within the site could be extended to connect with the airport highway, thus providing an alternate route to the downtown area.

COMMERCIAL/ PUBLIC SERVICES : The southern east sector would be mainly used for light-industrial and commercial activities, bordered by the new avenue within the site and by the Pedro de Heredia Avenue. Its streets may be widened, multi-story structures built and other necessary investments made to guarantee the economic growth of the area. The communal center would be developed (including a Church, health center, market, etc.,) across from the existing stadiums.

BIBLIOGRAPHY

Chapter One:

1. Encyclopedia Britannica. 1971.
2. New York Times Almanac 1972. "World Nations" page 679.
3. Map obtained from Arquitectura en Colombia. Ed. Jorge Araujo and Carlos Martinez Proa. 1951
4. Atlas Basico de Colombia. Instituto Agustin Codazzi. 1970.
5. New York Times Almanac. op.cit.
6. Ibid
7. Mendoza Hoyos Hernan. Caracteristicas Generales de la Poblacion Colombiana. page 16 in "Urbanizacion y Marginalidad". ASCOFAM. 1968
8. Alternativas para el Desarrollo Urbano. page 5 CID Universidad Nacional. 1969
9. Ministerio de Desarrollo Economico. Departamento de Planeacion Nacional. Politicas de Vivienda. page 7 1970.
10. New York Times Almanac. op.cit
11. Ruiz Lara Jorge. La Funcion de la Ciudad en el Desarrollo Nacional y Regional page 21 DNP 1970.
12. Griffin Keith. Underdevelopment in Spanish America. An Interpretation. page 88 MIT press 1969.
13. Arrubla Mario. Estudios sobre el Subdesarrollo Colombiano. page 179 Ed. El Tigre de Papel. 4th edition. 1971.
14. Tendencia de la Industrializacion y el Comercio exterior en Colombia. page 104 Documento de Trabajo. CID Universidad Nacional. 1970.
15. United Nations. Monthly Bulletin of Statistics.
16. CIDA Tenencia de la Tierra y Desarrollo Socio Economico en el Sector Agricola en Colombia. page 72
17. Ibid. page 139
18. Social Science and Health Planning: Culture and Disease, Health Services in Colombia. Milbank Memorial Fund Quarterly Vol 46 No. 2 April 1968, Part 2 Appendix B. Table 2, page 336

19. Manrique Rodrigo. Localizacion Industrial y Proceso de Urbanizacion en Colombia. page 217 CID Documentos de Trabajo op.cit 1970.
20. New York Times Almanac. op.cit.
21. Alternativas para el Desarrollo Urbano. CID op.cit. page 5
22. New York Times Almanac. op.cit.
23. Caballero Antonio. Talismanes para el Desarrollo. El Tiempo. page 6 Febrero 13 1972.
24. Incora: Informe de Actividades. page 17 1965
25. Encyclopedia Britannica Year Books.
26. Ibid.
27. Ibid.
28. Tendencia de la Industrializacion y el Comercio exterior en Colombia. op.cit page 104
29. Encyclopedia Britannica Year Books.

Chapter Two:

1. Modelo de Regionalizacion. page 66 DNP Migracion y Desarrollo Urbano. ASCOFAM ed. Cardona Ramiro. 1969-
2. Cardona Ramiro. Urbanizacion y Marginalidad. page 65 ASCOFAM ed. Tercer Mundo. 1968.
3. Ruiz Lara Jorge. La Funcion de la Ciudad en el Desarrollo Nacional y Regional page 22 op.cit
4. Ibid. page 23
5. Ministerio de Desarrollo Economico. Politica de Vivienda page 2 op.cit.
6. Ibid. page 3
7. Ibid. Anexo 5 page VII.77
8. Ruiz Lara Jorge. Op.cit. page 30
9. New York Times Almanac page 211 op.cit.

10. Andrade Lleras Gabriel. El Proceso de Urbanizacion en Latino America. page 31 Urbanizacion y Marginalidad. op.cit.
11. Ministerio de Desarrollo Economico. Politica de Vivienda. page 4 op.cit.
12. Ibid. page 4
13. Ibid. page 17
14. Ibid. page 19
15. New York Times Almanac page 680 op.cit.
16. IDB Informe de la Comision Asesora para la politica de Desarrollo Urbano. Washington DC 1965 Appendix 11, page 14. Unpublished Document.
17. Ibid.

Chapter Three:

1. Atlas Basico de Colombia. page 56 po.cit.
2. Arthur D'Little, Integral, Habitar, Obregon Valenzuela. Corturismo. Estudio del Desarrollo Turistico de la Costa Atlantica y San Andres.
3. Cartagena Plan Piloto de Desarrollo Urbano. Instituto Agustin Codazzi. page 166 1965
4. Ibid. Anexo page 8 Cuadro No. 2
5. Dorta Marcos. Cartagena de Indias.
6. Medina & Fullea. Mercado de Vivienda en Cartagena. page 3 ICT 1970.
7. Plan Piloto de Desarrollo Urbano. page 23 op.cit.
8. Arthur D'Little op.cit.
9. Ibid.
10. Plan Piloto de Desarrollo Urbano. page 11 op.cit.
11. Ibid page 13
12. El Problema Tugurial. Desarrollo Urbano en Cartagena, Colombia SA. ICT page 5 1970

13. Cartagena. Plan Piloto. op.cit.
14. Ibid. page 20
15. Ibid. page 21
16. Ibid. page 17
17. New York Times Almanac page 680 op.cit.
18. Arthur D'Little. op.cit.
19. Ibid.
20. Plan Piloto. page 13 op.cit.

Chapter Four:

1. Cartagena. Plan Piloto de Desarrollo Urbano. page 39 op.cit.
2. Medina and Fullea. page 3 op.cit.
3. Ibid. page 7
4. Oficina de Rehabilitacion de Tugurios. Informe.
5. Medina and Fullea. page 24 op.cit.
6. Rodriguez Garavito Jorge. Informacion Censal sobre Vivienda. 1951-1964.
CID 1969
7. Medina and Fullea. page 7 op.cit.

Chapter Five:

1. After Oscar Lewis. "The Culture of Poverty" and "Investigacion de Trece Barrios Marginados". Reporte del Doctor Triana al Ministerio de Gobierno. Unpublished document.
2. Informacio Censal sobre Vivienda. 1951-1964, page 44 op.cit.
3. From: "The Viability of Low-Cost Housing Programs" a paper by Rafael Obregon MIT Urban Studies and Planning Department.

4. After Earl Kessler and Earl Popko "The Growth Pole System". Thesis MIT 1971.
5. Rojas Ernesto. "Urbanismo y Migracion" in Migracion y Desarrollo Urbano page 189 op.cit.
6. For a more detailed study see: "Identificacion de Oportunidades para Desarrollo Civico y Social" a document by International Development Foundation Inc. 1970
7. Ibid.

Chapter Six:

1. Dr. Triana. Trabajo de Investigacion sobre Trece Barrios Marginados. Chapter 3. Unpublished Document. op.cit.
2. Informe "Oficina de Rehabilitacion de Tugurios" Zona: Cienaga de la Virgen.
3. Dr. Triana's Report, chapter 3 op.cit.
4. Ibid. and Oficina de Rehabilitacion de Tugurios. op.cit.
5. Medina & Fullea. Mercado de la Vivienda en Cartagena. page 20 op.cit.
6. Dr. Triana's Report, chapter 7. po.cit.
7. IDF Report. Identificacion de Oportunidades para el Desarrollo Civivo y Social page 26, op.cit.
8. Dr. Triana's Report, op.cit.
9. Ibid, chapter 7
10. IDF Report, page 29 op.cit.
11. Ibid. Anex E. page 2
12. Dr. Triana's Report, chapter 7 op.cit.
13. IDF Report, page 14 op.cit.
14. From Medina & Fullea op.cit.
15. IDF Report, page 31 op.cit.
16. Dr. Triana's Report, chapter 5 op.cit.

17. Ibid.
18. Ibid, chapter 4
19. For a more complete study on the subject see: Triana's Report chapter 4 op.cit.
20. Ibid.
21. Ibid.
22. Medina & Fullea, page 26 op.cit.

Chapter Seven:

1. IDF Report. Anexos E-1 and E-6. op.cit.
2. Dr. Triana's Report. Chapter 7, op.cit.
3. IDF Report. Anexos E-1 and E-6, op.cit.
4. Dr. Triana's Report, chapter 4 op.cit.
5. Ibid.
6. Ibid, chapter 7
7. According to official reports quoted by the IDF Report, page 15 op.cit.
8. For a more complete study on the "decapitalization" of government housing agencies, see: Ministerio de Desarrollo Economico. DNP. Politicas de Vivienda op.cit.
9. IDF report, page 43 op.cit.
10. Ibid. page 44
11. After a study titled: The Dependency Syndrome, made by Rafael Obregon and Jorge Uzategui, on the problems of dependency in Puerto Rican squatter settlements and presented to the Urban Studies and Planning Department at MIT. 1971.
12. All the plans were taken from the study on the Cienaga de la Virgen, done by the Oficina de Rehabilitacion de Tugurios.

13. All statistical information on Chambacu was obtained from two ICT documents: Investigaciones sobre Vivienda- Chambacu/Cartagena. Seccion de Investigaciones y Estadistica. 1971. and Desarrollo Urbano en Cartagena/ Colombia. El Problema Tugurial. Document presented to SEMUNDIAL Medellin 1970.
14. ICT. Plan de Mejoramiento de Barrios. Cartagena, page 9. XII Congreso Panamericano de Arquitectos, 1968.
15. IDF Report, page 56 and 62 op.cit.
16. Ibid, page 58
17. Ibid, page 60
18. Ibid, page 65
19. From: "Notes for a Housing Policy with Special Reference to Low Income Housing Systems in Metropolitan Mexico." John Turner, MIT 1971

Chapter eight :

1. The number of dwellings to be moved is taken from a study done on a rehabilitation project of a Rio de Janeiro Favela, (squatter settlement) of similar characteristics as those existing in the Cienaga sector; i.e land fill requirements; small distance relocation of dwellings; incremental growth; socio-economic conditions of the participants, etc., and titled; "The Possibilities of Developing Policies supporting Autonomous Housing Action in Underdeveloped Countries." The Bras de Pina Redevelopment Project Case. by Carlos Nelson F. dos Santos. MIT Urban Studies and Planning Department. 1971.