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CIUDAD GUAYANA AS A GROWTH POLE:
AN EVALUATION

By

Maria de L. Pinto

A PLAN B PAPER

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

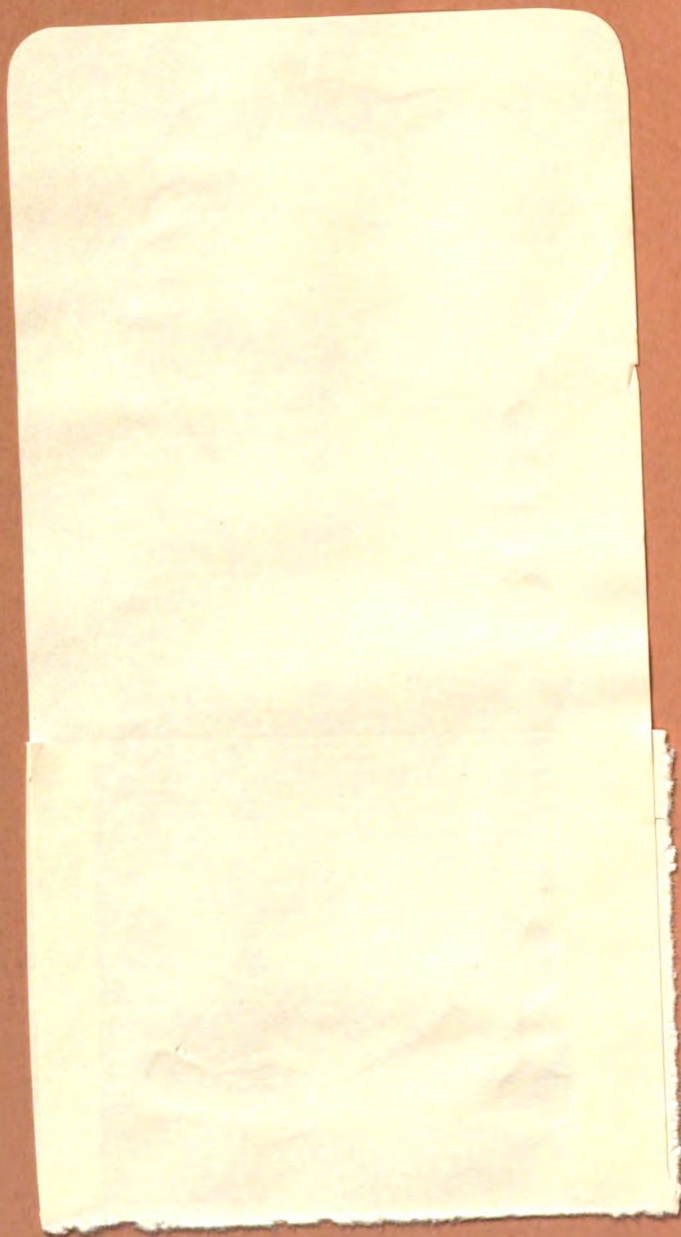
MASTER OF URBAN PLANNING

School of Urban Planning and Landscape Architecture

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ABSTRACT

Many governments in developing countries have been using different methodological approaches in order to achieve economic and social development. In 1960, the Venezuelan Government adopted the growth pole strategy for the development of the resource and power oriented Guayana region and established objectives and policies to carry out the strategy. After several years of intense planning efforts, little evidence exists about the degree of accomplishment obtained.

This paper attempts to find out the correspondence between objectives and accomplishments. A brief description of the development approach and the features considered for giving rise to developmental-service centers is presented. Policies and objectives established regarding population, employment and economic development, housing, education and health are analyzed and compared with the outcomes. The limitations which made the implementation difficult are outlined. Finally, intermediate city strategy is suggested as an alternative to growth pole approach.

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Governments and international assistance agencies have been using different development policies in developing countries with the hope that economic and social transformation may be achieved. One of them is the Venezuelan government that in 1960 adopted a methodological approach for the programming of development of the resource- and power-oriented Guayana Region of Venezuela. To this effect, it was created the Corporacion Venezolana de Guayana (CVG) as an autonomous agency responsible for the overall planning and coordination of the comprehensive development of the region. The CVG obtained technical assistance from the Joint Center for Urban Studies of the MIT and Harvard University in 1961 when planning studies were commenced.¹

The primary focus of the Guayana Region programming was to be the economic and social development of the traditional Guayana which showed growth potential and enormous natural resource base. Development efforts could be concentrated not only to utilize the full growth potential of this region but also to create a new city, "Santo Tome de Guayana," later entitled Ciudad Guayana, as the major growth pole of the region in an attempt to soften the growth of Caracas and other urban areas on the north coast of Venezuela, and to provide a development center for the exploitation of mineral resources of the

area.² The location of the new city is at the confluence of the Orinoco and Caroni rivers and includes the municipality of San Felix, the urbanizaciones of Puerto Ordaz, Macagua and Matanzas, as well as Palua and all the barrios on both sides of the Caroni River (see Figure 1). The physical development strategy originally considered three generalships; a single-city strategy, development to the west and concentration of most business and administrative facilities in a major city center. All the factors including not only extraordinary resources base and few physical development constraints but also adequate public and private funding made the region equipped for success.

After two decades of intense planning efforts little evidence exists that theoretical assumptions were accomplished in the way they were stated. Most of the studies realized look at the growth that has been taking place in the region since the early stages of the planning program in terms of permanence of settlement. There has not been however enough studies explaining the level to which the new city has been a source of development and of service activities reaching out over the countryside and other communities of the region in a two-way stream of contact.

It is the purpose of this paper to analyze the goals and objectives of the CVG regarding the development of the Guayana Region in order to find out the degree of accomplishment of these goals and objectives. First, the type of development approach applied to the region according to its characteristics is portrayed to have an idea of the nature of strategies to be deliberated. A brief description of the features considered for giving rise to the city as a growth pole center is also presented. Then, the different elements that the CVG and planners and scholars believe are of importance for the integral development of the area are analyzed taking into account the objectives and policies established by the CVG and the result obtained after several years of widely held planning practices. Finally, these outcomes are interpreted to determine the reasons for the actual accomplishments, and to find out if it is desirable to continue with the model.

In order to achieve this purpose, academic literature from authors interested in urban development strategies in developing countries is reviewed in order to have a clear understanding of what they consider the guideline principles for national and regional planning should be. Annual reports from the CVG are analyzed to observe the aims that this agency stated as requirements for the

entire development of the region and the city. The IX and X Censos of Venezuela corresponding to the years 1961 and 1971 respectively, as well as statistics of the region until 1979 presented by the CVG are examined in order to acquire data regarding the final accomplishments in the indicators of development and compare them with the purposes of the CVG stated in the comprehensive planning.

Although this paper attempts to provide an evaluation of the Guayana program since its beginning in 1961 to 1979, it is recognized that there is not a complete analysis due in part to the lack of material available for information and in part to the limitations of time. Nevertheless, this report constitutes a gate for those who are interested in further investigation regarding the development of the Guayana Region.

THE DEVELOPMENT APPROACH

The Guayana Program has been considered by many planners as one of the most grandiose and sophisticated spatial experiments of all time, as well as the major effort of the Venezuelan Government in regional development. The task, set by the government headed by President Romulo Bentancourt, was to devise an appropriate strategy for the entire development of the Guayana Region and its resources taking into consideration the goals and norms

of the Venezuelan National Plan.³ Guayana was to be fully integrated as a permanent element into the life of the nation. As John Friedmann states "the goal was to be self-sustaining, cumulative growth and a gradually improving level of living for the people of the region."⁴

Because of the characteristics of the development area and the type of National Objectives established, Friedmann considered the region as an exemplary case of what he calls resource frontier development (a development approach).⁵ He deliberates resource frontiers come into existence when major natural resources are discovered and private firms or the government commit to exploit them because of their commercial opportunities. The basic condition of the resource frontier is then the presence of large-scale and economically attractive natural resources. Remoteness from existing centers of population is another characteristic of these areas that suggests that their development must be focused on a city. This city should be the agent for transforming the wilderness into a suitable habitation and because of its relative isolation it performs only limited central-place functions which means the city is a specialized center. Exports are the principal reason for the existence of the resource frontiers. They export nearly everything they produce to both national and international markets and produce very little

of what they consume. The growth of the population is related to the conditions above described. After an initial boom which normally lasts for few years, there is a tendency for the population growth to level off; a cumulative growth process can not set into motion unless a diversification of the region's economic base can be achieved. The development of the resource frontiers is carried out as an integrated investment program under a single executive authority which have to bear a portion of the total development costs including investment in housing, community facilities, utilities, health, education and transportation. Other important factors are the high transportation costs for supplies during the initial phase of construction and the high costs of labor.

Given these general characteristics for resource frontiers, Friedmann believes the following elements of strategy may be considered: a) establish a regional authority for development; b) create a new location matrix; c) achieve a minimum size as soon as possible; d) reduce physical isolation; e) reduce cost of living; f) diversify the economic base of the region; g) create a basis in community. These elements constitute the preconditions for the successful development of regions in a national context (Friedmann, 1966:60).

The Guayana Program was under the responsibility of the Corporacion Venezolana de Guayana (CVG), a public

corporation created by the government to carry out the research, planning and development of the area.⁵ As it was stated before, the focus of the program was the development of the natural resources of the region in order to convert it in the country's principal center of heavy industry and the development of the new city Ciudad Guayana which was to be the focal point for the series of interrelated industries complexes that would transform the resource frontier into a permanent part of the economy.

The strength of the region derived from its potential for development of low cost power, its large high-grade iron-ore deposit, its vast petroleum and natural gas reserves, its extensive hardwood forests, its supplies of fresh water and its accessibility by air, sea and land⁷ (see Fig. 2). All those resources well combined would be the basis for an enormous industrial complex.

Before the program started, the region had been occupied by foreign investors (the Orinoco Mining Company and the Iron Mines Company) who developed some highly profitable mining concessions and shipped the ore by boat to destinations overseas, principally in the United States.

Nearly everything the region needed was imported, therefore living costs were high. Migrants who went to

the area looking for employment opportunities found serious problems in terms of housing, education, health services, etc. When the government decided to build its steel mill and power plant as well as to transform the resource frontier into a stable part of the national economy the region was expected to gain a new identity.

Ciudad Guayana, founded as a municipal district from the old center of San Felix to the steel plant at Matanzas, was to be the focal point for the development of the Southeast region of Venezuela, the agent for transforming a traditional wilderness into a new settlement region, the doer for helping to integrate the Guayana's wealth in resources with national development. It would serve the purpose of creating the external economies that constitute the attractive forces to bring to the region the managers, professionals, investors, educators, builders and skilled workers which the industrial complex will require. In other words, Ciudad Guayana was to be the central point from which developmental-service operations would be radiating.

As Harvey S. Perloff states if a city is to be a planned source of development and of service activities, the human and material resources of it have to be seen as weapons for bringing about development and improvements throughout the entire region and from here to the whole

country. It is not clear all the kinds of measures that are effective for the establishment of new growth centers with developmental-service operations. Nevertheless, Perloff considers in a broad outline a type of approach which would involve elements such as:⁸ a) to turn the cities into instrumentalities of development socio-economic progress; b) to provide the new cities with certain urban values common to the whole country, specifically those relationated with motivation, aspiration, family planning, the use of modern technologies and inter-group cooperation, and a more efficient organization of administration and government; c) to equip the growth centers with adequate institutions and resources to carry out the developmental servicing functions; d) to create a two-way flow between the urban community and the countryside so that there would be a back and forth movement in connection with all the activities and migration is obtained; e) to provide more government activities in the cities so that they can provide much higher level of public services and train the provincial and local officials in much higher level skills; f) to encourage private business, university and other educational activities, and various cooperative activities to developmental-servicing tasks by providing extensive information services, system of subsidies;

g) to use the more advance institutions of the city as a device for raising the standards of the less advance sections; it would involve mobilizing the educational, private enterprise, and governmental institutions to educate the people in the slums and help them to achieve a higher level of productivity and income, as well as to provide them with all the services necessary.

Ciudad Guayana being considered as a developmental-service city was to be planned with all the services facilities that any town in rapidly growing might have: enough housing to satisfy the demand, schools, hospitals, hotels, a stadium, parks, a general port, a sophisticated city center, a jet airport and a technical university. Because the most important goal of the CVG was to encourage economic growth and to ensure that the development program would not be impeded by inadequate housing and public facilities, it agreed that the problems of housing, education and local government were to receive the highest priority.⁹ It was also important to provide an environment that would promote, not simply accommodate, the desired economic activities since the emphasis of development was the maximization of external and agglomeration economies.

These theoretical assumptions regarding the development of the area under the resource frontier approach and the shaping of the new city as a growth pole with

developmental-service operations provided the strategies and policies to be contemplated in the planning of the Guayana Region. Goals and objectives were established in accordance with those theoretical assumptions but the accomplishments have been different due to a set of circumstances that will be explained later. At this point of this study, it seems convenient to analyze the assumptions stated at the beginning of the project and observe the outcomes attained in order to see if there has been correlation between them.

THE PROJECT: GOALS AND ACCOMPLISHMENTS

As it was mentioned before, the project was centered on the urban development of Ciudad Guayana. Anthony Downs¹⁰ expresses that the CVG's urban development objectives can be conceived as a primary goal subject to three major constraints. The primary goal was rapid and efficient development of urban services in order to attract new industries and other economic base activities to the region. The three major constraints which could preferably be called secondary goals were stated by Downs as follows:

1. Capturing a satisfactory financial return on the CVG's investment in the area.
2. Turning over to the market or to other

public agencies as many functions as possible in order to minimize the managerial and other development responsibilities.

3. Creating an attractive and efficient city that would provide satisfaction to its citizens and a nucleus for attraction of industry by maintaining the planning and land-use controls necessary.

Downs believes these goals which appear to be so broad were very helpful for several reasons. First, they established economic development as having higher priority than any other goal. Second, it was clear that urban development was not a potential empire-building game for the existing bureaucracy since the CVG wanted to limit its managerial efforts. Third, it also meant that the CVG encouraged private entrepreneurs to play a large role in urban development. Four, the CVG's desire to maintain good planning standards meant that many things would not be sacrificed to development, profit making or reduction of responsibilities. The idea was to attract imaginative firms and personnel to the region, as well as to set an example for future regional development programs in Venezuela.¹¹

There were also other secondary aims that had influence in the formulation of policies. These aims are stated in a Rodwin's report¹² as: 1) the resolution to

in the interior; d) divert rural-urban migration away from the Central Highlands; e) draw people with urban industrial experience and skill from the Central Highlands to Ciudad Guayana; f) postpone building up of a settled population of poorer, less educated, less skilled migrants who were not so essential to industrial development; g) supplement the native-born population's skills by importing technical assistance staff on temporary visas; h) replace the foreign born in the best jobs, by Venezuelans; i) expand the urbanization faster than the barrios and locate most growth on the West Bank.

In the following paragraphs, it will be shown that some of these objectives were partially fulfilled while other ones were largely failure.

The CVG gave high priority to peopling the city through migration. It wanted to show that the planning of the city was not only for economic development but also social development. Population projections produced the basis for equating population growth with economic growth and for shaping and channelling population growth. The demographic projections however, were over-estimated because they were based on previous intercensal growth rates. Since in 1950 the population was 5,385 and in 1961 the population reached 40,085 inhabitants, the first projections done in 1962 by the planning staff indicated

that the city would have a population of 115,000 by 1966 and of 415,000 by 1975. These estimates which were derived from projections of jobs to be generated by planned economic growth were later changed to 90,000 by 1966 and 221,000 by 1975.¹⁴ It also demonstrates that the economic growth was not expanded as rapidly as desired. Indeed, the steel mill continued to demand a large part of the CVG budget instead of generating revenue for investment in other job-creating industries. Besides, private capital was very slow to invest. Industrialization supported very little additional population growth directly.¹⁵

Information obtained from John MacDonald¹⁶ indicates that during the period 1965-1975 the city met its expectations regarding objectives b, c, d and e as far as the east of Venezuela was concerned, but the proportion of migrants to the city from states outside Eastern Venezuela has fallen since the early 1960's. The same results were found in the CVG survey performed in 1977.¹⁷ By October of this year the population of Ciudad Guayana 10 years or older was 187,332; 30,658 were born in the city while 156,974 were migrants. The provenance of those migrants is shown in Table 1 (see Appendix). According to this table, about half of the total migrant population come directly from the states north of Ciudad Guayana which make up the non-oriental region. About 14 percent

came directly from the Central Highlands and approximately 4 percent came from abroad.

Although migrants coming from the same region represented about 28 percent, the city absorption of population from the countryside did not stop Ciudad Bolivar and Upata, the two large population centers of Estado Bolivar, from continuing increasing their population. Information from the 1961 Census and from the 1979 CVG survey about Employment and Unemployment¹⁸ shows that the population of Ciudad Bolivar has increased from 87,918 in 1961 to 176,674 in 1979, and the population of Upata from 12,713 in 1961 to 32,912 in 1979.

The CVG's economic planners believed improvements of barrios conditions would bring in more unemployed and dependents. Therefore, they decided to postpone building up of a settled population of poorer and less educated migrants. But, these unskilled migrants, looking for jobs in this promising industrial center arrived to the city with very little delay.¹⁹ Thus, unplanned people localized themselves in unplanned barrios making of Ciudad Guayana their home and setting up households without benefit of infrastructure. In many opportunities planners had to incorporate "incremental improvement" of dwellings by low-income households within the planning framework.²⁰ Nevertheless, by 1974 the city had 39 percent of its

housing stock developed totally outside the planning framework.

Because the original population projections were not met, the main city center, where the principal business offices and retail establishments would be located, could not attract commercial investors. Skilled workers, managers, professionals and staff who the industrial complex required were not drawn to the city because they found amenities of life were not available. Consequently, the CVG had to bring in hundreds of foreigners as technical assistance consultants with visas linked to fixed-term contracts. Since 1965, however, there has been a downtrend of foreign active males in the city. The Central Bank Survey²¹ in 1965 found that 9 percent of economically active males were born abroad. MacDonald determined in their survey that only 6 percent of household heads were from abroad. Finally, the CVG's survey of 1979 shows that only 4 percent of the population economically active and inactive came from abroad.

The policy of the CVG regarding the distribution of the population to the West Bank of the Caroni River had not still met in 1975. According to MacDonald,²² about 78 percent of the population was living in the eastern lower income section of the city and only 22 percent in the western part. Table 2 (see Appendix) provides

information regarding population projection in both sectors of the city. The projections are based on previous census and the CVG's surveys. They show that the population in the eastern part of the city was to be about 78 percent by 1975 and about 80 percent by 1980. The projected outcomes are the result of the programmes and projects undertaken by the CVG. Indeed, the CVG has been performing shanty clearances in the western section of the city and site-and-services schemes for upgrading shanties in the east. Shanties are not allowed in the west part where since 1970 low-cost urbanizations have been built for working class families.²³

Employment

The aim of the industrial development programme was to supplement the export of petroleum and other raw materials as the main source of the Gross Domestic Product and to eliminate or diminish the importation of semi-finished products which makes up one-third of the value of manufacturing output.²⁴

Development was to be directed to achieve substantial new industrial exports by producing basic metals, basic petrochemicals, electrochemicals and heavy machinery as key factors in the economic development of Venezuela, using capital-intensive modern technology, concentrating

on production and giving employment generation a progressively less central role. It was considered that the flow of national and international capital to the new industries of Ciudad Guayana would increase production and create a trickle-down effect such that incomes would be raised and therefore new employment would be created in medium and light industries privately financed.²⁵

According to Roberto Alamo Blanco and Alexander Ganz,²⁶ planners designed a heavy industry complex with specific targets and programs for the production of steel, enriched iron ore, sponge iron, aluminum, chemicals, pulp and paper, metal fabrications and electric power taking into consideration the resources available in the Guayana region and the needs and targets for the Venezuelan economy established in the national plan. The regional development was formulated around this heavy industry complex.

The major elements in project selection included:

- 1) modern technology related to the Guayana's unique resources;
- 2) domestic and export demand;
- 3) economic scale to achieve competitive output and pricing;
- 4) integration with the Venezuelan economy as a whole;
- 5) linkages, external economies and transportation factors.

In 1963, the CVG established principal production targets and export goals for 1975 and 1980, these goals

were reviewed by the same agency in 1966 and were changed due to certain factors such as new technological developments, the completion of feasibility studies and revised evaluations of foreign markets. They are shown in Table 3 (see Appendix) taken from the chapter "Economic Diagnosis and Plans" of Roberto Alamo and Alexander Ganz (1969).

In the next pages, it is examined what has happened with some projects.

The production of the iron ore that for 1975 was estimated to be of 27,000 thousands of metric tons reached 24,771 what represents 91 percent of the estimated goals. Table 4 shows however that the production has been decreasing since 1976 what indicates that the goals established for 1980 were not met.

In 1963 started to function the siderurgica del Orinoco which was responsible for the production of steel. The levels of production since that year are shown in Table 5.

La production between 1963 and 1975 increased at an inter-annual rate of 14.8 percent.²⁷ By comparing Table 5 with Table 3, it can be observed that the production of steel in 1975 represented about 44 percent of the estimated production for that year. In 1976 the production decreased about 18 percent with respect to the production

of 1975, and even though, since 1976, it started to increase having an increment of 47 percent between 1978 and 1979, it seems almost impossible that by 1980 the production could reach to 4,000 thousands of metric tons that was the estimated production for that year.

The production of the sponge iron that by 1975 was expected to be 2,100 thousands of metric tons, was not commenced until 1978 when the production was 273 thousands of metric tons.

The planned heavy machinery complex and other supporting and intermediate industries were established in 1977 when the "Fabrica Nacional de Tractores y Motores, C.A." FANATRACTO was built with mixed capital from the CVG, the John Deere enterprise, ACO company and Cavendes.

As it can be observed, the production targets of the basic metal industries had not been achieved by 1979. Besides, because of the high technology of the few industries, there was low demand for unskilled and poorly educated. For this reason, most of the unemployed population was constituted by people with low educational levels (see Table 6 in the Appendix).

Consequently, the directions anticipated for employment in the different sectors were not accomplished. Table 7 (see Appendix) indicates the CVG's projected

distribution of employment in 1975 and 1980 and the real distribution in 1975 and 1979.

Although the CVG had a perspective more limited for the primary sector regarding employment, it did not move in the expected directions. Employment in manufacturing grew more slowly than planned, and employment in construction, that was estimated to decrease according to the projections, has increased. Indeed, the CVG states in 1977²⁸ that the growth in manufacturing, construction and power is the key for generating employment. Therefore, the secondary sector that in 1975 produced 44 percent of the total employment, generated 52 percent of the total employment by 1979. Most of these jobs were created in construction because of the expansion of industrial and urban development programs realized during the period 1977-1979. Finally, the tertiary sector that was supposed to generate employment at increased rates, has decreased. In 1975, this sector remained the main employment generator, but since the last quarter of 1976, the secondary sector has been producing more employment.

In 1965 unemployment stood at 13 percent in Ciudad Guayana. For March 1975, it was still 13 percent representing the highest rate of unemployment of any large city in Venezuela. Since then, unemployment has been decreasing until 1978 when it started rising again as it is shown in Table 8 (see Appendix).

The reduction in unemployment during 1975-1978 was due mainly to the demand of labour force for the expansion of the Guri Dam in Ciudad Guayana.

In terms of local and regional economy, Table 9 (see Appendix) shows that during the decade 1963-1972 the annual rate of growth of the regional GDP was 9 percent. The relative contribution of the region's primary and secondary sectors changed; the secondary sector increased with an interannual rate of 16 percent between 1963-1972 while the primary sector decreased. The tertiary sector's share of the Growth Domestic Product remained stable. In 1974 the structure of the regional GDP changed when the secondary and tertiary sectors had an equal participation because of the reduction in production and construction by 1973. While the primary sector's contribution has been diminishing, the secondary sector's share has been rising and the tertiary sector is again more or less stable since 1974.

Maritza Izaguirre³¹ states that according to the III Industrial Survey of CORDIPLAN (1970-1974) the manufacturing sector of the Guayana region represented 17.8 percent of the total fixed capital of the nation, 4.6 percent of the foreign capital and only 3.6 percent of employment. These percentages reflected the high

technology used which required enormous inversions and generated few jobs.

By 1975 the vitality of the region's primary sector derived almost exclusively from mining. Agriculture contributed less than 3 percent to the national agricultural product. Most of the food had to be imported because little importance was given to the local production of food. The costs of food in Ciudad Guayana were the highest in the country. Since 1977, however, there has been a reduction in food costs because of the better consideration given to the new food production programme in Delta Amacuro.

The increment that the secondary sector had in the contribution of the regional GDP during the period 1963-1972 was due mainly to construction that increased by 30 percent while manufacturing only grew by 14 percent. By 1977 the construction factor share continued increasing while the manufacturing diminished. Nevertheless, according to the CVG,³⁰ it is expected that by the year 2000, manufacturing will contribute more in the regional GDP and in the generation of employment which should reach up to one third of the total employment.

Housing

Housing constituted a critical problem and an important aspect at the initial stage of development of

Ciudad Guayana because of the explosive growth of the city (Figure 3). Because of the aim of having maximum encouragement of economic development of Ciudad Guayana, the planners thought the facilities necessary for each step in urban expansion should become available at the time that the need or demand for them appears. Thus, housing should be constructed so that it comes into existence at the same rate as the population grows.

Residential land was to be sold by the CVG to private developers at reduced rates in order to encourage them to build housing in the new city.³² They were supposed to do as much as possible: installing local stores and utilities. On the other hand, the CVG would provide lots for individual households in the lowest income groups who constituted the largest set of residential land consumers. Thus, the CVG's objective regarding housing was to maximize the contribution of private sector so that public fund could be concentrated in projects for which financing was not available such as low cost housing for low income groups.

The CVG devised programs and policies to cope with the major housing problems in Ciudad Guayana. In terms of squatting the CVG decided to test an approach different to the "massive construction" strategy which requires of huge allocation of resources that were not available for

the city and to the "confinement" strategy which involves designating an area adjacent to the new city where squatting is permitted. Instead, the aim was to use a settlement strategy which implied guiding squatters into settlement areas within the city (the already low-income eastern end of the town) and encouraged to place the ranchos according to a community layout so that the replacement of the shacks could be greatly facilitated. The designation of settlement areas inside the city was thought to encourage squatters to invest their labor and money in improving or replacing the shacks as their time and income permit. In addition, public agencies could install adequate services in the future without incurring high costs for clearance and expropriation, since under Venezuelan law, perpetual relocation of squatters can be an expensive business.³³

A variety of other programs were initiated for families in the different income brackets. For families in the two lowest income brackets the CVG promoted participation of a national rural housing agency to increase the supply and the choice of low-cost housing for these families. It also furthered the creation of the Municipal Housing Foundation: Fundacion de la Vivienda del Caroni--FUNVICA, to cover the market demand of these income group and encourage them to improve or replace the original

shanty.³⁴ Thus, the Banco Obrero--the national urban housing agency--, and FUNVICA started to coordinate their efforts by supplying different types of housing: the former producing row and apartment housing and the latter concentrating on detached and duplex units.

Regarding middle-income housing, the CVG had direct responsibilities. It decided to promote the open city approach which consisted of having the steel mill providing a financial contribution to help its employees acquire a house in the city. Thus, the steel workers could have their own houses after they leave the company.

For the high income housing, the CVG limited its role to providing land under conventional sale contracts to builders interested in developing country clubs and high-cost housing subdivisions because it was considered that the highest income group presented few difficulties.

Rafael Corrada³⁵ presented a table which compares the supply and demand for housing in the different income brackets during the period 1963-1965 (see Table 10 in Appendix).

The number of houses built from 1963 to 1965 represented only about 33 percent of the housing program adopted in 1963 and 53 percent of the 1965 revised demand figures.

The high fulfillment of targets in the two lowest income brackets was the result of the programmes of the Banco Obrero and FUNVICA combined with unprogrammed building in the barrios specially upgrading of shanties into barrio houses.

The shortage in the higher income levels was not critical because the families along with the middle-class invaded the urbanizations planned for lower income brackets.³⁶

In 1969, the CVG announced a new programme for upper income groups. The aim was to provide 2,903 dwellings by 1973. But in 1974 only 197 dwellings had been completed.³⁷

Although 35,000 units were built during 1969-1974, the aims were not accomplished, there was a big shortfall. Indeed, the CVG mentioned that in that period 9,000 dwellings will be constructed for middle-income people. Only 1,399 units were built and all of them, except 271, were available for the second lower income group. It indicates that only 29 percent of these 1,399 dwellings completed was intended for middle income group.³⁸ The 1974 annual report of the CVG presents a table that indicates the annual housing requirements for the period 1974-1979. These requirements are shown in Table 11 (see Appendix).

According to this table the housing demand for the period 1974-1978 was 20,102 dwellings, but the program defined by the CVG only contemplated the construction of 9,334 units in the different sectors of the city. During 1974-1978 the CVG compromised 522.4 millions of bolivars for the building of 5,102 dwellings. By the end of 1978 only 1,141 units were completed, 4,322 were in construction and 3,871 were in process of being contracted. It indicates that only 12 percent of the total units programmed by the CVG were built.³⁹

By the end of 1977 the private sector completed 3,025 dwellings in the West Section of the city for the high-income group, and had in construction 840 units in another part of the same west section.⁴⁰ By 1978, the private sector had built 3,865 units.

Other two agencies: FUNVICA and INAVI had 2,568 dwellings in construction by the end of 1977 in order to provide housing specially to the middle-income group.

These numbers indicate that by 1978 the total housing completed reached 7,574. According to this, only 37 percent of the housing requirements for the period 1974-1978 were supplied.

The analysis regarding housing has been limited up to the year 1978 because recent information was not available. From the handy enlightenment it is clear that a big

proportion of Ciudad Guayana's population was not served by government housing programmes, by official housing bodies or by private developers. Instead many people had recourse to personal initiative and self-help to provide their own housing. For this reason shanties have grown in Ciudad Guayana specially in the east side of the city where the CVG encouraged the placement of ranchos. Shanties are not allowed in the western part of the city.

It is important to note that housing is practically a non-issue for the inhabitants.⁴¹ What constitutes a serious concern for the people is the problems of infrastructure and public services. Families living in adequate housing mention infrastructure as a problem because of late installation, faults, and interrupted services. Shanty dwellers are concerned specially with the services provided by INOS, the national water, drainage and sewerage authority. Shortage of water is the major item, but there is also anxiety for sewerage. Lack of domestic electricity is not a problem for the lowest-income group; many persons do not want the service because it implies charges that they do not know how to pay for.

Education

When the CVG took over, many aspects of social development particularly schools were far below regional

standards. By 1960 very little had been done for the education of the inhabitants living outside of urbanizations. The Ministry of Education paid little attention to the city's schools. The mining companies provided primary schools for their workers' children but the barrios if they were lucky only had one-room rural school.

The CVG also neglected the problem because it was thought that sufficient educated and training migrants would be attracted to satisfy the manpower requirements in short term and that industrialization by itself would lead to other bodies to take care for educational development.⁴² The strategy and plan regarding education stressed the productive aspect of education and training which is manpower development.⁴³ First priority was given to physical infrastructure and assistance in industrial development and the socializing contribution of education was considered a lower priority. This influenced the rationale for the educational development strategy and plan.

Linkages between economic goals and educational requirements were attempted by CVG planners. From the projected economic development they calculated the educational requirements of the workforce for the period 1965-1975 (see Table 12). This table shows the manpower planning approach to education and indicates a surplus in primary education and a shortage at higher levels. But these

estimations defined only the educational targets expressed in terms of workforce. They ignored the social and political demand which are as important as the demand from the planned economic sectors. The schools must serve the total population including persons not in the workforce since it is essential to generate continued development of skills and understanding among the productive members of the society.⁴⁴

Thus, before 1965 there was not overall educational planning for Ciudad Guayana. The CVG policy was to avoid taking on the responsibility of public education. Instead, this agency concentrated in providing church schools to absorb people of the high- and middle-income levels leaving the rest of the population who could not pay school fees to the Ministry of Education.⁴⁵

Because in 1964 the city's educational problems were enormous, the CVG developed a plan for investment in public education: a book bank to lend books to poor children; funds for construction of six primary schools; funds for school lunches, teaching materials and playground equipment; technical advice to schools teachers and administrators and assistance to INCE (Instituto Nacional de Cooperacion Educativa).

CVG educational strategies were directed to expand primary and secondary education in order to provide enough

students to go to secondary school and to assure that the future workforce would have enough education to be completed with INCE programs about industrial training and other informal adult education programs.

This policy was implemented with the creation of a Centre for Education Research, Planning and Extension Service funded by CVG with some personnel from the Ministry of Education. This centre has achieved little. Instead of linking the existing systems, the CVG advocated an experimental school that initiated its activities in 1973. If educational levels are examined since 1965, it is found that there has been slight improvements. Although secondary schooling hardly rose, the proportion of completed primary school has increased. But these increments did not present a real advance. While the adult people of the city fifteen years ago were able to achieve high levels of employment, their children are likely to become isolated from the economic growth of the city.

According to Maritza Izaguirre,⁴⁶ by 1975 the amount of children aged 7-14 with non-attendance to school was about 10 percent. The most affected were the children living in shanties because of the absence of primary school in the barrios. Two-fifths of shanty residents and a quarter of barrio house residents were unable to enrol a child because of lack of provision.⁴⁷ The carence of

schools that satisfy the requirements is the outcome of the increase of social demand for education which is the result of the increase in unplanned populations. As it was stated before, the CVG policies about educational planning were implemented mainly by economic criteria: first, to train manpower for heavy industry and second, to provide schools for the children of upper and middle management so that these families will stay in the city. No consideration was given to the rest of the population. This indicates the reason why the demand for education can not be fulfilled.

Health

In Ciudad Guayana health is affected by features such as quality of housing, the water supply, the sewerage system, the sanitary regulations of the ports, the levels of industrial pollution and the climate. There are differences between the East Bank and the West Bank of the city.

The East Bank, where more of the barrios have been developed is considered with more serious health problems because of the amount of inadequate and unhygienic housing. According to the CVG, by 1974, 28 percent of the east population was not served with water mains; about 40 percent lacked of domestic running water and had to depend on

public standpipes or on water trucks. Besides 35 percent of the dwellings were considered unhygienic.

The West Bank has lower levels of health problems because the public services specially infrastructure which are the main causes for healthy or unhealthy conditions, has been provided to this area in a continuous base since high-income groups live there. Because of the demographic structure of the city and the economic development strategy, a large part of the population has been left with low levels of living, in poor sanitary conditions.

The type of diseases that put people in the hospitals represent more the rural zone than the urban one. This can be the reflection of the lack of services specially for the poor, the lack of sanitation, the neglect of environmental precautions, the inadequate diet, the high cost of food and the low levels of education.

In general terms, it can be expressed that until 1975 little attention was devoted to health. The 1975 Annual Report announced that four outpatient centres were to be build in Ciudad Guayana. These installations were to be used exclusively for the Ministry patients and the beneficiaries of social security. This indicates again the inequalities in access to medical services between the general public and the labour force.

Because of the no availability of information regarding health conditions, in Ciudad Guayana, the analysis has been limited to 1975.

THE RESULTS: INTERPRETATION

The analysis of the different policies and strategies used in the development of Ciudad Guayana and the results obtained have helped to recognize and understand that this centre can not be considered as a growth pole according to the theoretical assumptions that several authors have established regarding this point. Indeed, the human and material resources, which are the weapons for bringing about development and improvement, were slightly taken into consideration in certain moments of the development and completely neglected in other circumstances. Therefore, Ciudad Guayana has not been a source of development and of service activities.

While the emphasis of the program has been rapid capital intensive economic growth, social development and welfare improvements have been ignored. The CVG, responsible for the planning and development of the area, has shown a great interest in the productive efficiency, in the increase in the gross or net products, in heavy industry as the basis for economic development. But it has been turned away from the direct concern with the

existing living conditions in the area. As John Friedmann⁴⁸ states if in a comprehensive planning calculus both forms of efficiency, productive and social, can not be brought into some satisfactory balance, the very process of growth is undercut. Besides, it is essential that amenities of life which includes housing, education, health, recreation, goods, and other services, be available in order to create the links that are necessary for attracting financing, private manufacturing, commercial and services firms which create economies of scales that help to bring about development.

As it is observed throughout the analysis, the way in which the program was carried on generated impacts in the regional and national development, in employment, in income distribution and in the living levels of the population of Ciudad Guayana. It was noticed that the goals established in the National Plans regarding levels of productivity were not accomplished mainly because there was an overestimation on the volume of production and on the population growth rates. The increase of the manufacturing sector has been less than the estimated for several reasons. On one hand, consumer good industries participate very little in the expansion of the manufacturing product because of the low competitiveness of local production with goods manufactured in the Central Highlands.

On the other, there has not been industrial diversification in the city because industries have not been attracted to the area. Therefore, the city depends a great deal on the import of consumer goods and inputs for the basic industries.

Because of the slow growth of the economy and the high technology used, high rates of unemployment exist in Ciudad Guayana. Unless local demand for the city's production increases and unless many new industries locate in Ciudad Guayana, industrial employment will not increase very much.

This problem of unemployment is directly related to the income distribution. The planners' desire with respect to income distribution has not achieved either. They expected that the number of families receiving less than 12,000 Bolivars per year will decrease from 60 percent in 1965 to 20 percent in 1980. According to Maritza Izaguirre in 1973 52 percent of families received 0-1000 Bs. per month and 40 percent, 1000-2000 Bs. per month. In 1977 only 16 percent of families were receiving 0-1000 Bs per month. This decrease however does not represent accomplishment of goals but indicates that the income distribution levels had to be changed because of the inflation in the whole country.

The income pressure is also related to the cost of living. Ciudad Guayana is considered as one of the Venezuela's city with higher cost of living. Nevertheless, the CVG's sole concern regarding high cost of living is based on its calculations of industrial development costs. In other words in the CVG view high costs are a problem because they affect the costs of development but not because they affect levels of living.

Costs are high because of the relationship of Ciudad Guayana with the rest of Venezuela. Nearly all consumer goods and many intermediate inputs into the heavy industry complex are imported. Consequently, as MacDonald mentions⁵⁰ "the industrial development of Ciudad Guayana is essentially an enclave that extracts and transforms the local natural resources, but contributes little to the region, other than direct wages to 30 percent of the workers in Ciudad Guayana." For every job created by the plan in Ciudad Guayana more than one job is created on the Caribbean coast or in the Centre Highlands, rather than enhancing the employment potential of the city itself.

All the impacts above mentioned as well as the outcomes that have been presented throughout the report are consequences of several basic limitations that have been analyzed for different authors. Some of these limitations

are:

a. Lack of a long-term model not only in terms of objective but also regarding the instrumentality to be used in order to achieve the objectives.

b. Lack of contribution between the different regional and sectional offices because of the different ways of establishing policies. It has brought problems in terms of coordination and acquisition of monetary resources.

c. Lack of coherency in the policies of the plan. For instance, Ciudad Guayana is considered as a magnet to divert population flows away from the Central Highlands. It is expected however that the wrong sort of people will go away, remigrate to other regions of the country.

d. Lack of skilled personnel not only at the national level but also in the regional and sectional offices.

e. Discrepancy in opinion between the top officers of the CVG who remain in Caracas and the CVG staff in Ciudad Guayana. This discrepancy has been originated due to the different socio-cultural levels of the actors that has brought problems of communication.

f. The emphasis of the CVG on "things" instead of on "people" and social welfare. This has affected the

administrative style of the CVG as well as the relationship of this agency with other government agencies.

g. Lack of continuous evaluation of the program in order to provide opportune amendments whenever possible.

h. Lack of information to the people of the city about the content of certain policies and the structure of implementation of them. People are not taken into consideration either for expressing their views about policies or for indicating what they think would be better for them and the development of the city.

Most of these difficulties are the result the style adopted by the CVG. On one hand, the CVG has avoided partisan entanglement what has made difficult for the CVG to work closely with the different agencies of the country. On the other, participation of the different elements of the society is neglected. The inhabitants of the city were never asked about the fundamental decisions. For this reason, there has been few cooperation from the population. The development was thought outside the region for people who had never lived in the region and therefore never understood the factors which guided the living in the area.

Several authors think that the development of the Guayana region and the city Ciudad Guayana has increased the level of living of the people who migrated to that city while the living conditions of the population of the

two other bigger centres of the region still remains the same. For instance, MacDonald⁵¹ considers that the city would have been better off without so much planning by a regional development authority whose overriding interests lie in heavy industry as the basis for economic development.

The strategy used in Ciudad Guayana is not unique, many other countries had used similar practices. In each of them, one of the problems found is the way in which planning is conducted: by the people who lived outside of the area in question. It shows that without participation of the community and without a clear understanding of their needs and feelings, development can not be achieved.

GROWTH CENTRES VS INTERMEDIATE CITIES

After having analyzed the growth pole strategy implemented in Ciudad Guayana and looking at the major problems generated because of its emphasis on heavy industry development, it seems reasonable to think that a different approach should be used to generate social equity and economic growth in Venezuela. Indeed, this growth center strategy which was extensively used during the 60's has not been carried over into action in recent years because of the failure of the growth centers to

diffuse development in the region, their reduced labor absorption and the little consideration given to social infrastructure.

Over the past few years governments and international assistance organizations in developing countries have taken a great interest in promoting the growth of intermediate cities. Moreover, some planners argue that creating a well-articulated and integrated system of secondary cities can be more effective in spreading the benefits of urbanization and in distributing industries more equitable than establishing growth poles.⁵² In fact, there are important differences between both strategies. While growth center strategies are concerned with the development of large scale industry to generate regional development, secondary city strategies put more attention to the stimulation of small-scale industry. Besides, this strategy attempts to strengthen urban-rural linkages and gives equal attention to social infrastructure and industrial infrastructure. In other words, the strategy is not only concerned with economic development but also with social welfare improvements.⁵³

Intermediate cities can become vital spatial nodes for integrating smaller with larger central places and entangling the linkages that build an articulated spatial system. They play an important role in the development of

regional economies because of their characteristics. Indeed, middle-size cities manifest both rural and urban physical characteristics. They are socially and economically heterogeneous; they are often absorption points for rural-to-urban migrants; they are open for the assimilation of outsiders, and because of their heterogeneity they can integrate social groups as well as town services with metropolitan activities.⁵⁴ But, it is necessary that a complete and clear understanding of their social and economic characteristics and of their pattern of growth and development exist before policies for their development can be formulated. Once the range of cities that will benefit from development policies are defined and their characteristics are analyzed the next step might be to provide those intermediate cities with facilities and services, with all the major linkages necessary for spatial development in order to create a mixed urban-rural economy and absorb many of the functions concentrated in primate cities. In this way middle-size cities would be centers of economic activities specially rural economies, would create off-farm job opportunities, would provide better health, educational and social services, and would offer amenities to attract professionals, skilled workers and entrepreneurs who might generate economic growth and promote better living conditions in them.

If national governments in developing countries want to bring about a more balanced distribution of urban population and productive economic activities by promoting the growth of intermediate cities, changes must be made in the distribution of investments. It implies the existence of a better understanding of the reasons for having middle-size cities developed, their advantages, the dynamics of their growth and the functions they perform in the natural economy. In this way, intermediate cities will have a better economic position and the gap between them and primate cities will be reduced.

NOTES

¹Rodwin, Lloyd and Associates (1969), foreward.

²Rondinelli, Dennis and Kenneth Ruddle (1978),
p. 51.

³The fundamental goals of the nation were conceived to be: a) full employment of the labor force and equitable distribution of wealth, using the resources of the several regions of the country in the most efficient way such that welfare for all Venezuelans be achieved; b) diversification of the economy and optimal growth of the national product in order to obtain economic independence; c) regional decentralization of productive activities and population. See John Friedmann (1966), p. 156.

⁴Friedmann, John (1966), p. 177.

⁵Ibid., pp. 76-86.

⁶The Corporacion Venezolana de Guayana was created in 1960 through the decree No. 430 as an autonomous agency. It was entrusted with the job of programming the integral development of the Guayana Region. See CVG Estadisticas de la Region Guayana (1980), p. I-1.

⁷Rodwin, Lloyd and Associates (1969), p. 11.

⁸Perloff, Harvey (1966), pp. 99-101.

⁹Rodwin, Lloyd (1965), p. 13.

¹⁰Downs, Anthony (1969), p. 207.

¹¹Ibid., pp. 207-208.

¹²Rodwin, Lloyd (1965), p. 14.

¹³McDonald, John (1978-1979), pp. 17-18.

¹⁴Rodwin, Lloyd (1969), p. 15.

¹⁵McDonald, John (1978-1979), p. 20.

¹⁶Ibid., pp. 21-23.

- ¹⁷CVG (Agosto 1980), p. III-12.
- ¹⁸Ibid., p. III-6.
- ¹⁹Rodwin, Lloyd (1969), p. 13.
- ²⁰Corrada, Rafael (1969), p. 245.
- ²¹Banco Central de Venezuela, "Encuesta en Santo Tome de Guayana," Caracas (1965) in MacDonald (1978-79), p. 23.
- ²²MacDonald (1978-79), p. 127.
- ²³CVG, Informe Anual 1977, pp. 147-149.
- ²⁴Ganz, Alexander (1964), pp. 325-329.
- ²⁵MacDonald (1978-79), p. 66.
- ²⁶Alamo Blanco, Roberto and Alexander Ganz (1969), p. 66.
- ²⁷Izaguirre, Maritza (1977), p. 30.
- ²⁸CVG, Informe Anual 1977, p. 60.
- ²⁹MacDonald (1978-79), p. 68.
- ³⁰CVG, Informe Anual 1977, p. 61.
- ³¹Izaguirre, Maritza (1977), p. 81.
- ³²Corrada, Rafael (1969), p. 244; see also Madhu Sarin (1982), p. 60.
- ³³Corrada, Rafael (1969), pp. 238-239.
- ³⁴MacDonald, John (1978-79), p. 107.
- ³⁵Corrada, Rafael (1969), p. 246.
- ³⁶MacDonald, John (1978-79), p. 108.
- ³⁷Izaguirre, Maritza (1977), p. 53.
- ³⁸See Maritza Izaguirre (1977), p. 54 and John MacDonald (1978-79), p. 109.

- ³⁹CVG, Informe Quinquenal (1974-1978), p. 137-138.
- ⁴⁰CVG, Informe Anual (1977), p.
- ⁴¹MacDonald, John (1978-79), p. 195.
- ⁴²Ibid., p. 130.
- ⁴³Davis, Russell and Noel McGinn (1969), p. 270.
- ⁴⁴Ibid., p. 273.
- ⁴⁵Izaguirre, Maritza (1977), pp. 70-71. See also John MacDonald, p. 131.
- ⁴⁶Izaguirre, Maritza (1977), p. 103.
- ⁴⁷MacDonald, John (1978-79), p. 139.
- ⁴⁸Friedmann, John (1964), p. 325.
- ⁴⁹Izaguirre, Maritza (1977), pp. 99-100.
- ⁵⁰MacDonald, John (1978-79), p. 198.
- ⁵¹Ibid., p. 204.
- ⁵²Rondenelli, Dennis (1982), p. 358.
- ⁵³Richardson, Harry W. (1981), p. 279.
- ⁵⁴Rondenelli, Dennis and Kenneth Ruddie (1978), p. 179.

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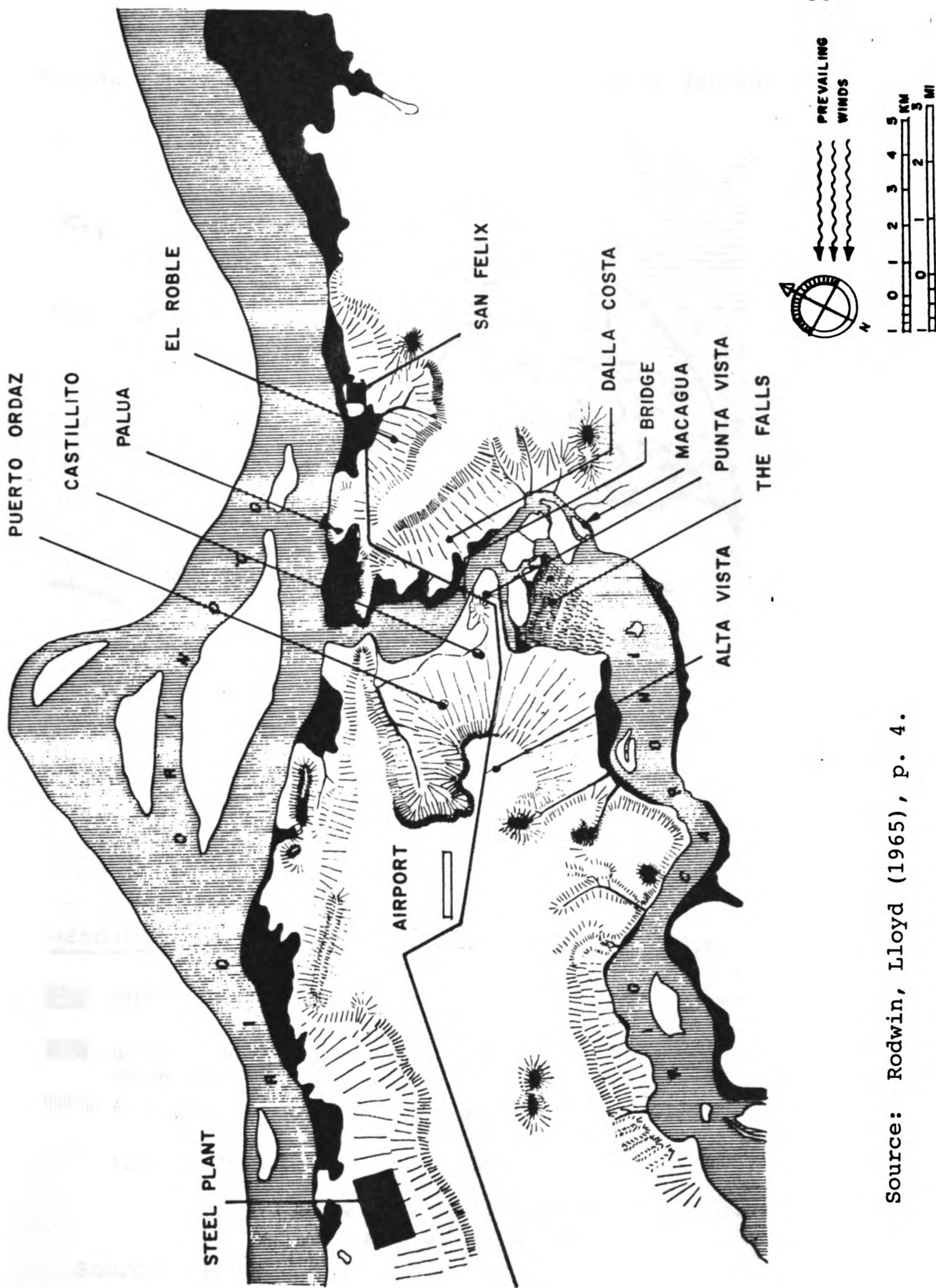
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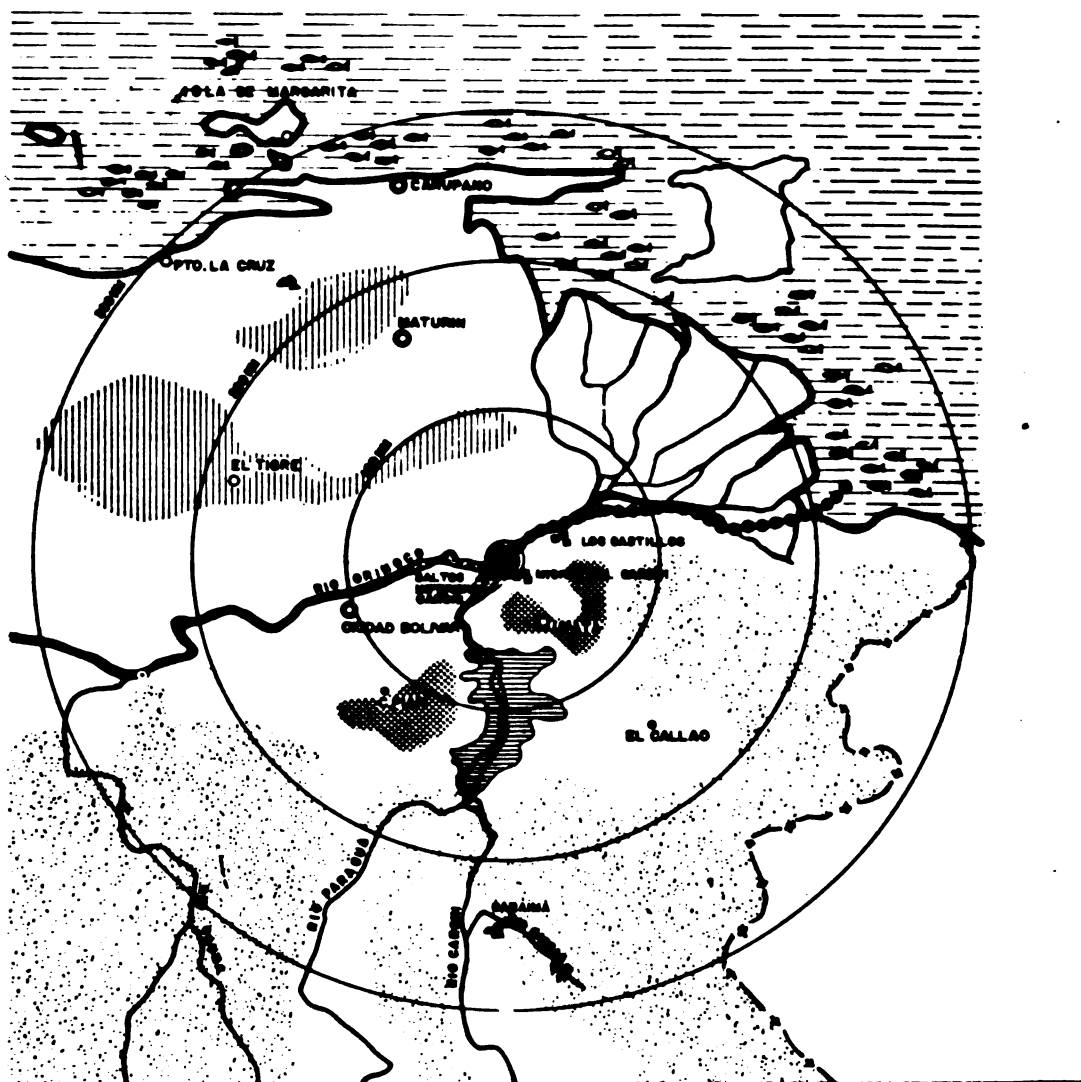
FIGURES

FIGURE 1. Ciudad Guayana











Source: Rodwin, Lloyd (1965), p. 4.

FIGURE 2. Resources of the Eastern Region of Venezuela



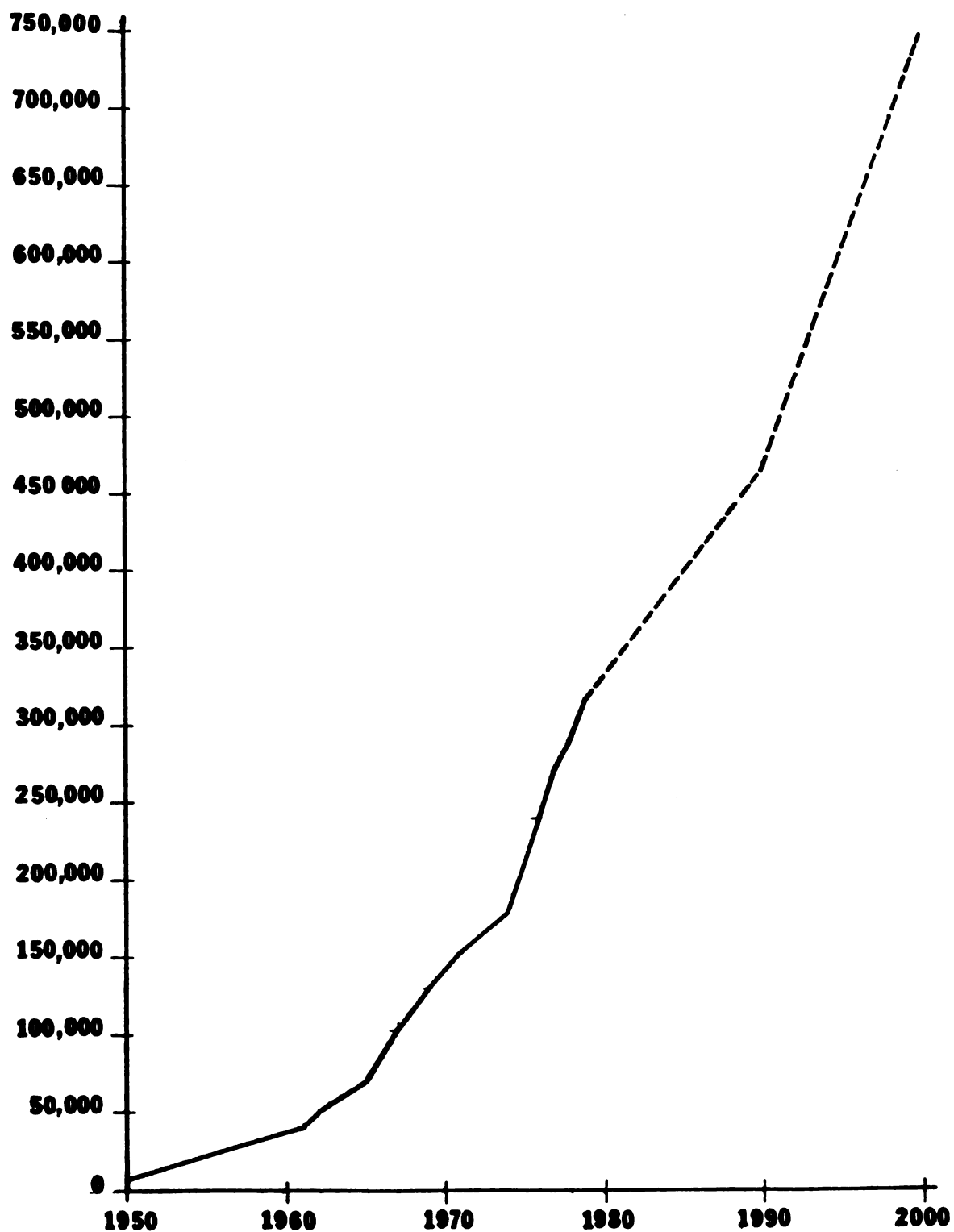
RESOURCES OF THE EASTERN REGION OF VENEZUELA

- | | |
|---|---|
|  HYDRO-ELECTRIC POTENTIAL |  DEEP WATER CHANNEL |
|  DEPOSITS OF IRON ORE AND OTHER MINERALS |  ZONE FOR FISHING INDUSTRY |
|  PETROLEUM AND NATURAL GAS |  HISTORICAL MONUMENTS |
|  FOREST RESERVE |  NATURAL SPECTACLES |



Source: Rodwin, Lloyd (1965), p. 6.

FIGURE 3. Population Growth: Actual and Projected



Source: Census 1961, 1971; CVG: Informes Anuales 1974, 1977.

APPENDIX

TABLE 1. Ciudad Guayana, Provenance of Migrants 10 Years or Older,
Period: 1976-1977

PROVENANCE	Total	YEAR OF ARRIVING								Not DECLARED
		BEFORE 1960	1960 1964	1965 1969	1970 1974	1975	1976	1977	1978	
REGION I CARTE NOROCCIDENTAL										
1976	17.020	1.118	2.107	3.283	6.322	2.082	2.056	-	-	52
1977	21.281	856	1.805	3.607	6.623	2.360	2.988	3.032	-	-
REGION II TIERRAS CENTRALES										
1976	2.272	237	729	366	602	182	156	-	-	-
1977	2.416	260	560	669	654	136	46	91	-	-
REGION III CENTRO OCCIDENTAL										
1976	1.464	156	366	470	290	104	52	-	-	26
1977	1.618	153	232	294	377	184	181	197	-	-
REGION IV ZULIANA										
1976	1.905	105	156	757	391	287	287	-	-	-
1977	3.042	91	261	895	703	291	513	288	-	-
REGION V ANDES										
1976	1.432	52	156	312	521	183	200	-	-	-
1977	1.688	30	183	364	488	123	137	363	-	-
REGION VI SUR										
1976	26	26	-	-	-	-	-	-	-	-
1977	75	-	-	-	45	15	15	-	-	-
REGION VII NOR-ORIENTAL										
1976	70.695	8.707	14.561	21.193	16.129	4.403	5.624	-	-	52
1977	73.902	7.461	12.606	21.899	15.359	3.839	5.743	6.963	-	32
REGION VIII GUAYANA										
1976	44.859	6.439	7.513	10.998	13.815	2.606	3.436	-	-	52
1977	44.610	6.591	6.259	12.185	12.025	2.258	2.412	2.865	-	15
REGION IX INSULAR										
1976	1.274	78	286	520	234	-	156	-	-	-
1977	1.196	75	168	286	441	15	136	75	-	-
AMERICA										
1976	2.216	260	288	364	652	236	416	-	-	-
1977	3.353	167	319	396	392	316	860	903	-	-
EUROPA										
1976	260	78	78	52	-	52	-	-	-	-
1977	2.207	271	275	106	227	122	556	650	-	-
AFRICA, ASIA Y OCEANIA										
1976	130	26	26	52	-	26	-	-	-	-
1977	485	90	46	63	61	60	120	45	-	-
NO DECLARADO										
1976	654	26	-	26	26	-	-	-	-	570
1977	801	15	30	30	31	-	15	15	-	665

Source: CVG, Estadísticas de la Región de Guayana, 1980, p. III-21.

TABLE 2. Population of Ciudad Guayana Eastern and Western Sections, 1972-1980.

	1971*	1972	1973	1974	1975	1976	1977	1978	1979	1980
Ciudad Guayana	147.740	161.601	176.791	193.341	211.515	225.898	241.259	257.665	275.186	293.898
Inter-annual increase		13.861	15.190	16.550	18.174	14.383	15.361	16.406	17.521	18.712
Vegetative growth		5.170	5.656	6.162	6.767	7.403	7.906	8.502	9.019	9.632
Net migration		8.691	9.534	10.388	11.407	6.980	7.455	7.904	8.502	9.080
Eastern Section	110.612	122.580	135.843	150.541	166.829	178.557	191.110	204.545	218.925	234.316
Inter-annual increase		11.968	13.263	14.698	16.288	11.728	12.553	13.435	14.380	15.391
Vegetative growth		3.871	4.290	4.754	5.269	5.839	6.249	6.689	7.159	7.662
Net migration		8.097	8.973	9.944	11.019	5.889	6.304	6.746	7.221	7.729
Western Section	37.128	39.021	40.948	42.800	44.686	47.341	50.149	53.120	56.261	59.582
Inter-annual increase		1.893	1.927	1.852	1.886	2.655	2.808	2.971	3.141	3.321
Vegetative growth		1.299	1.366	1.408	1.498	1.564	1.657	1.813	1.860	1.970
Net migration		594	561	444	388	1.091	1.151	1.158	1.281	1.351

Source: CVG, Informe Annual 1971, p. 52.

TABLE 3. Modification of Guayana Region Heavy Industry and Power Goals, "Before" and "After"

<u>Projects</u>	<u>Production Targets</u>				
	<u>"Before"</u>		<u>"After"</u>		
	<u>1975</u>	<u>"Firm"</u>		<u>"Potential"</u>	
		<u>1975</u>	<u>1980</u>	<u>1975</u>	<u>1980</u>
		<u>000's of Metric Tons</u>			
Iron Ore	45,000	27,000	27,000	32,000	40,000
Prerduced enriched ore	--	5,000	10,000	5,000	12,000
Sponge iron	10,000	2,100	4,100	2,100	4,100
Steel	4,760	2,080	4,000	3,000	6,600
Aluminum	200	16	21	30	86
Pulp	--	33	50	60	130
Amonia	200	--	--	330	330
Phosphorus	50	--	--	--	--
<u>Millions of Bolivars</u>					
Heavy machinery	1,800	160	230	300	420
<u>Megawatts of Power Capacity</u>					
Guri and Macagua Dams	1,940	1,770	1,120	1,770	2,120

Source: Roberto Alamo Blanco and Alexander Ganz;
1969. "Economic Diagnosis and Plans," p. 68.

TABLE 4. Production of Iron Ore in the
Guayana Region. 1970-1978.

Year	Production Thousands of Metric Tons
1970	22,128
1971	20,177
1972	18,464
1973	23,109
1974	26,424
1975	24,771
1976	18,684
1977	13,693
1978	13,515

Source: CVG; Estadísticas de la Region de Guayana, 1980. Cuadro IV 3-6, p. IV-24.

TABLE 5. Production of Steel in the
Guayana Region. 1963-1979.

Year	Sidor (Steel) Thousands of Metric Tons
1963	263
1965	537
1968	747
1970	789
1972	964
1975	919
1976	754
1977	679
1978	678
1979	1,283

Source: CVG, Informes Anuales, 1973-1974;
CVG, Estadísticas de la Region de Guyana 1980.

TABLE 6. Unemployed Population 15 Years or Older Classified According to Educational Levels. 1975-1979.

Year	Total	Illiterate	Primary	Secondary	Technical	Other	University
1975	5,051	431	3,110	1,208	259	--	43
1976	3,748	443	2,342	755	130	--	78
1977	3,080	169	1,931	844	44	15	76
1978	3,190	233	1,708	1,010	179	--	60
1979	5,061	279	2,785	1,688	214	--	95

Source: CVG, Estadísticas de la Region de Guayana, 1980, p. III-57.

TABLE 7. Projected Distribution of Employment by Sector 1975 and 1980.
Achieved Distribution by 1975 and 1979.

	1975	1980	1975	1979
	1965 projection	1965 projection	achieved	achieved
Total population	236,000	326,000	21,103	315,973
Economically active	64,000	100,000	64,000	96,804
Percent active	27	31	27	31
Percent economically active population				
Sector				
Primary	13	12	6	4
Agriculture	5	5	1	0.4
Mining	8	7	5	3.6
Secondary	56	49	44	52
Manufacturing	41	40	30	27
Electricity, Gas, Water	1	1	2	1
Construction	14	8	12	24
Tertiary	32	39	50	44
Commerce	-	10	19	18
Transport	-	3	5	6
Service	-	26	26	16
Total	100	100	100	100

Source: CVG, Informes Anuales 1965, Table II-6; 1975 p. 128.
CVG, Estadísticas de la Región de Guayana, p. III-43.

TABLE 8. Poblacion, Employment and Unemployment. 1975-1979.

	Total Population	Economically Active Population	Employment	Unemployment	Unemployment Rate
March 1975	213,559	57,907	50,370	7,537	13.02
Nov. 1975	229,763	60,471	55,420	5,051	8.35
April 1976	240,593	69,644	64,790	4,854	6.97
April 1977	270,172	75,796	73,253	2,543	3.36
April 1978	287,454	84,286	80,535	3,751	4.45
April 1979	315,973	96,804	91,743	5,061	5.23

Source: CVG, Informe Quinquenal 1974-1978, p. 125; CVG, Estadísticas de la Region de Guayana 1980, p. III-39.

TABLE 9. Regional Gross Domestic Product by Sectors,¹ 1963-1974. Percent Sectoral Participation.

Sector	Rate of growth: %														
	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1963-1972	1973	1974	1976	1977
Primary	38	39	35	36	31	28	30	32	29		3	25	4	8	16
Agriculture											6				
Mining											3				
Secondary	19	21	26	22	27	30	28	26	28	36	18	34	38	51	53
Manufacturing											14				
Electricity, Gas, Water											16				
Construction											30				
Tertiary	43	40	38	42	41	42	42	42	43	41	9	41	38	31	31
Commerce											15				
Transport											16				
Service											7				
Total	100	100	100	100	100	100	100	100	100	100	9	100	100	100	100

Source: CVG, Informes Anuales 1963, p. 68; 1974, p. 100; 1975, p. 130; 1977, p. 64.

TABLE 10. Housing Supply and Demand, 1963-1965, by Family Income Level

	Approximate Family Income Per Month					Total
	\$111 or less	\$112- 222	\$223- 444	\$445- 667	\$668 and over	
Demand estimated for 1963	4,056	6,041	2,865	961	337	14,260
Supply programmed for 1963	4,159	5,551	2,722	740	224	13,396
Supply expected for 1965 ^a	1,092	2,621	412	325	5	4,455
Indicated program deficit	3,067	2,930	2,310	415	219	8,941
Portion of program accomplished (per cent)	26.3	47.2	15.1	43.9	2.2	33.3
Revised demand estimate for 1965 ^b	1,590	3,447	2,266	851	281	8,435
Expected actual deficit	498	826	1,854	526	276	3,980
Portion of actual demand satisfied (per cent)	68.7	76.0	18.0	38.2	1.8	52.8

^aAccording to the housing survey conducted by the CVG in May 1965.

^bBased on revised population-income projections made after the 1965 survey by the Central Bank.

Source: Rafael Corrada, 1969. "The Housing Program," p. 246.

TABLE 11. Housing Requirements, 1974-1979 by Family Income Levels

	1974	1975	1976	1977	1978	1979	Total
Up to Bs 499	300	540	550	900	320	500	3,110
Bs 500-999	950	1,095	1,080	2,045	940	470	6,580
Bs 1000-1999	0	659	2,306	1,843	2,474	1,830	9,112
Bs 2000+	43	912	1,160	1,360	625	0	4,100
Total Program	1,293	3,206	5,096	6,148	4,359	2,800	22,902

Source: CVG, Informe Anua, 1974, p. 135.

TABLE 12. Projected Educational Supply and Labour Force Demand, 1966-1975

Educational Level	1975 Labour Demand	Education Provided 1966-75	Difference Between Supply and Demand
Postgraduate	332	--	332
University	4,199	--	4,199
Secondary	21,199	12,859	8,340
Completed primary	17,215	17,462	- 247 ^a
4-5 years primary	10,427	12,626	- 2,199 ^a
0-3 years primary	-8,348 ^a	7,834	-16,218 ^a

^aNegative quantities show that fewer workers with this level of schooling would be needed in the labour force in 1975 than were present in 1966.

Source: MacDonald, John, op. cit., p. 130.

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