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1. Milagros Nanita - Kenneth
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ABSTRACT

This report on The Dominican Republic is one of five case studies prepared as a part of an overall study of urbanization in the Caribbean region. The final report (Urbanization in the Caribbean: Prospects and Management Priorities, by G. Thomas Kingsley, Jeffrey P. Telgarsky, Ivor Jackson and Milagros Nanita-Kennett) pulls together the findings of all five case studies and region-wide analyses of demographic, economic, and urban trends. It also offers a number of guidelines for policy that are suggested by the analysis.

Urbanization in the Caribbean: Prospects & Management Priorities

The Dominican Republic

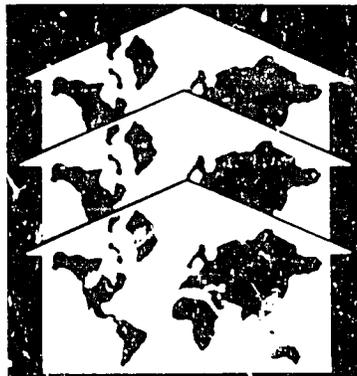
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**Urbanization in the
Caribbean: Prospects &
Management Priorities**

The Dominican Republic

October 1990

Prepared by:

**Milagros Nanita-Kennett
The Urban Institute**

for:

**U.S. Agency for International Development
Regional Housing and Urban Development Office for the Caribbean
Kingston, Jamaica**

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PREFACE

This is one of five case studies prepared as a part of an overall study of urbanization in the Caribbean region. The final report (*Urbanization in the Caribbean: Prospects and Management Priorities*, by G. Thomas Kingsley, Jeffrey P. Telgarsky, Ivor Jackson and Milagros Nanita-Kennett) pulls together the findings of all five case studies and region-wide analyses of demographic, economic, and urban trends. It also offers a number of guidelines for policy that are suggested by the analysis.

INTRODUCTION

The present spatial or territorial organization of the Dominican Republic can be directly linked to its economic activities. Main roads and highway systems have been built to interconnect the various centers of production with the main ports for export and import activities. As a result, large pockets of population have settled along the path of La Romana-Santo Domingo-Azua; Santo Domingo-Santiago-Puerto Plata; and Santiago-San Francisco de Macoris.

Santo Domingo and Santiago are the two primary cities of the Dominican Republic. The former has acquired city primacy since it traditionally has functioned as the most important administrative and commercial center, and has included most forms of social infrastructure. City-hegemony of the latter is related to the fact that it is located in a rich agricultural area. This trend of urbanization—where cities which serve as trade centers, or are located in rich lands, prosper—are the main forces that have caused the regional disparities in the Dominican Republic. Resources continue to flow to the more productive regions, while other minor cities are disassociated from the main stream of social and economic development. At present, 70 percent of the total investment in the Dominican Republic goes to Santo Domingo, making this city the primary target for social groups wanting to improve their quality of life.

URBAN NEEDS AND CONSTRAINTS

The Dominican Republic is a country of strong contrasts in urban development. For example, the rate of construction that is taking place in Santo Domingo is so high that the capital city's profile has changed completely in the last four years. New neighborhoods and communities are springing up throughout the city. New

Table 1
Shelter Inventory According to Physical Conditions and Location

Condition	Total	Cibao	Southeast	Southwest
Irreparable	364,550	142,116	131,632	86,758
Can be improved	478,263	202,655	247,156	28,876
Adequate	272,019	84,583	176,620	14,438

Source: INVI, *Estudio sobre Mercado de Viviendas en Ciudades Intermedias de la Republica Dominicana*.

avenues, roads, and bridges have been developed to reduce the overcrowded traffic of the city and to expand the urban landscape. Thousands of apartments units have been built for various income strata of urban dwellers. But, together with urban renewal, a large number of squatter settlements have proliferated. The supply of potable water and garbage collection have decreased, blackouts last as long as 16 hours, and the number of city vendors has increased dramatically. Each day transportation becomes more difficult for the poor, and poverty, population growth, and the deterioration of the quality of life have increased at the same time that an inflationary monetary spiral has become ingrained in the economy.

At present, the lack of housing in the Dominican Republic is a major concern. The Instituto de Estudios de Poblacion y Desarrollo has estimated that there is a deficit of 364,550 houses (Table 1). Between 1985 and 1990, 51,000 new families had to be absorbed into the city (Camara Dominicana de la Construccion, 1986). This increase, plus the fact that a progressive deterioration of the housing inventory (currently 42.9 percent need improvement), suggests that the need for new shelters is beyond 500,000 units and that over 80,000 units must be built each year in order to eradicate the deficit by the year 2000.

It is anticipated that these new demands for shelter will be concentrated in the main cities. Over 1970-1981 the rate of increase of the urban population for Santo Domingo was 5.69 percent (Table 2). In 1989, the rate continued at more than 6.0 percent (Camara Dominicana de la Construccion, 1986). Thus, high inflows of migration are expected through the year 2000.

Urban migration in the Dominican Republic is similar to that of most Latin American countries. In Latin America, the tremendous imbalance and disparity between urban and rural sectors, and between minor and main urban centers result in transfers, displacement, and population movements that cause significant migratory flows, affecting the rate of population growth, urban and rural population

Table 2
Rates of Urban Growth

Characteristic	Number of Cities				Yearly Population Growth		
	50	60	70	81	50-60	60-70	70-81
Major Cities (Sto. Dgo. & Santiago)	2	2	2	2	6.70	6.46	5.69
Intermediate cities	-	5	13	17	-	6.04	4.36
Minor cities	14	18	26	40	4.45	5.24	4.13

Source: In Camara de la Construccion, from ONAPLAN, *El Proceso de Urbanizacion en la Republica Dominicana*

densities, and the physical environment. Even if the living standard of the urban centers remain below an acceptable level, opportunities for employment, the concentration of administrative institutions, and the access to basic services, attract large migratory flows to major urban centers.

It has been estimated that 62 percent of the migrants arriving in Santo Domingo are from minor urban centers and that 59 percent of the migrants that arrive in Santiago arrive directly from the rural areas. These facts show that inequality and social disparities are not only felt in rural areas but are also a characteristic of intermediate and minor urban centers.

One of the direct results of rapid and intense urban growth is the alteration of the existing spatial organization of the city. People tend to concentrate where space is available, and attempt to secure basic services. Since space and infrastructure services are limited, population densities are very high. In Santo Domingo, 88.30 percent of the population occupies only 39.7 percent of the urban space; squatter densities have been estimated at 14,000 people per square kilometer (Instituto de Estudios de Poblacion y Desarrollo,) 1984.

In Santo Domingo, 31 of the 93 urban communities are squatter neighborhoods. Squatter settlements are usually considered to be temporary phenomena. In reality, however, they are semi-permanent features of the city; being the response of low-income families to the lack of housing provision.

Table 3
Urban Population Growth

Characteristic	1920	1950	1981
Total urban	148,900	508,400	2,936,000
More than 5,000	87,500	396,000	2,806,000
Total population	894,700	2,136,000	5,648,000

Source: Camara Dominicana de la Construccion.

Across the nation, shanty towns and squatter settlements share a number of characteristics:

- They are wedged into courtyards and vacant lots or cling to steep hillsides. They are illegally built and multiply by the hundreds.
- Usually they have no piped water, sewers, paved roads, garbage collection, nor fire protection. When electricity is available the connection is usually done unsafely and illegally.
- Houses are largely produced by family labor using urban waste materials combined with different commercial materials.
- Settlements have an unclean and unhealthy atmosphere. Large numbers of families share common latrines or dispose of their wastes in plastic bags thrown into rivers or empty lots.
- Ninety percent of the migrant population are concentrated in these low-income settlements.
- Families living under these conditions suffer social, political, and economic isolation, especially recent arrivals.

GOVERNMENT POLICIES IN URBAN DEVELOPMENT

During the 1950s and 1960s, the common view was that the increased numbers of shanty towns and squatter settlements were due to the inability of low-income families to acquire conventional housing. As a result, government intervention became a necessity in building, subsidizing, or donating the required housing units to low-income families. Although at present, urban policy has moved to more progressive views—where the ability of the poor and an active participation

Table 4
Socio-Economic Profile of the Urban Dweller

	Total	Urban	Rural
Type of Housing (percent)			
Single Family	84.6	78.1	91.9
Apartment	2.8	5.4	0.0
Squatter settlement	6.7	8.3	4.9
Renting a room	5.6	8.0	2.9
Other	0.3	0.2	0.3
Total	100.0	100.0	100.0
Tenancy (percent)			
Owned	70.5	62.3	79.6
Rented	20.7	33.8	6.3
Donated	8.1	3.4	13.2
Other	0.7	0.5	0.9
Total	100.0	100.0	100.0
Access to Services (percent)			
With water 1970	49.2	90.7	25.3
With water 1980	45.5	69.6	18.9
With toilet 1970	10.3	23.5	1.5
With toilet 1980	21.1	38.9	1.4
With elect. 1970	36.8	76.3	65.1
With elect. 1980	59.1	91.3	75.3
Income Levels (percent)			
Under 50	9.9	7.3	12.8
50-100	19.5	12.6	27.1
100-200	33.9	30.8	37.4
200-300	15.8	20.1	11.1
300-400	7.2	9.1	5.2
400-600	6.7	9.0	4.2
600-800	3.0	4.5	1.3
800-1,000	1.6	2.6	0.4
1,000-1,400	1.8	3.0	0.4
1,500 or more	0.6	1.0	0.1
Total	100.0	100.0	100.0

Other indicators at 1990:

Family basket:	1,200-1,600
The cost of living:	20.00 pesos per hour
Minimum salary:	3.28 per hour
Minimum salary:	700 (large enterprises)
	450 (small businesses)

Sources: Instituto Nacional de la Vivienda, Oficina Nacional de Estadísticas, Oficina Nacional de Planificación, Instituto de Estadísticas de Población y Desarrollo, y Cámara Dominicana de la Construcción.

of the private sector are deemed decisive factors in increasing the housing stock of urban settlements—the magnitude of the problem and the precarious quality of life of most urban neighborhoods still appear to deserve high levels of government participation.

The physical expansion that is presently taking place in Santo Domingo is primarily government-induced. The president, Joaquin Balaguer, has placed construction as the core element of his political platform to provide for growth and rejuvenate the economy. As a result, large construction activity has occurred during his tenure in office. During those periods when different political parties have been in office, government construction has declined tremendously. It is fair to say that the Dominican Republic lacks a coherent national housing policy. Such policies, when executed, are heavily centralized and dominated by the chief executive, and dependent on the individual views of the administration in power. This makes urban development very fragile with little continuity, organization, or rational planning.

During the past four years of the Balaguer administration, 23,000 housing units were built. By some estimates, public construction expenditures have exceeded more than half the national annual budget. Although this is the highest number of housing units ever constructed by the Dominican government, opposition views have emerged expressing the disadvantages of this official urban program. The negative criticisms can be summarized as follows:

- a. Tall buildings have been built at strategic locations in the city to act as a barricade, hiding poverty and the squatter settlements.
- b. Government construction policies have not solved the problem of poverty. On the contrary, they have exacerbated it. The urban renewal program has caused large number of low-income families to be displaced and transferred to new resettlement areas at great distances from their communities and places of work.
- c. The massive government housing construction program in Santo Domingo will increase the inflows of cityward migration, thus further aggravating the problems of basic services provision.
- d. The sense of community integration has been damaged by some of the programs. Communities of Villa Juana and Villa Consuelo were divided when large avenues and buildings were constructed at the center axis of these neighborhoods. A number of small business that were the economic support of many families of the surrounding areas may be displaced in the near future by the new business activities that have emerged as a consequence of the urban renewal program.
- e. The government urban program has strong political implications. Urban renewal has focused on those communities that have had a history of civil revolt and that have opposed the present administration during earlier government periods.

- f. San Carlos was destroyed and rebuilt without taking into account the historical nature of this community that was the first neighborhood built outside the limits of the colonial city.
- g. Construction policies have unreasonably increased the prices of construction materials, land, and labor. As a result, the private sector cannot participate in the construction of new housing units. Furthermore, since the government is building with subsidized prices, private developers cannot compete in the market.
- h. Although construction can be an agent to invigorate the economy, the dollars expended in construction carry an import component of 60 percent (Banco Hipotecario Dominicano).
- i. The housing stock built by the government is used for political purposes to keep the constituency placid and to attract votes and members to the party in power, thus strengthening dependency and paternalistic relationships.
- j. Piped water, sewage systems, and garbage collection are not easily quantifiable products when put on site in upgraded neighborhoods. The government has not provided such services since the political payoffs are limited. Instead, the government has undertaken more monumental works, such as the Light House (a monument built to commemorate the 500th Anniversary of Columbus's arrival on the island), whose cost has been estimated by non-official sources at \$100 million.
- k. The adoption of policies, such as rent control, support the views that the government is not interested in urban development but in political strategies. The enforcement of rent controls dissuades private individuals from investing in rental housing.

Nevertheless the present administration still enjoys strong support in the community since, recently President Balaguer was reelected for another term.

According to government views, public housing is seen as an important element for income distribution since poor families can not afford homes which meet acceptable standards. Such views assert that government participation has been necessary to progressively increase the existing housing stock and meet the present demands. They further express that, through government intervention, the urban centers have been relatively well equipped to receive heavy inflows of migrants and mitigate the rapid proliferation of slums.

All developing countries with low-income levels and limited resources find housing a difficult policy area. The Dominican Republic is no exception. Governments have a difficult time reconciling regulatory plans and responding to the pressing needs of their constituencies. Supporters of high levels of government intervention in urban expansion believe that, without the present levels of official involvement, the problems of the major cities would be intractable.

Advocates of these views also believe that massive urban renewal programs are necessary, especially in main urban centers—such as Santo Domingo, which has grown without planning and control—as a precondition for social and economic development. They argue, that although the present government did initiate numerous monumental works during the past administrations, such works are vital in today's stage of development. During the past four years the Government has built dams, sports centers, hospitals, parks, roads, airports, avenues, and housing, thus increasing the social capital. Through their views, public works construction has a direct impact on the present economy through the generation of direct and indirect employment and for the future, they provide an important support function for the emerging economic sectors of the economy, such as tourism and free zones.

The following paragraphs, authored by President Balaguer, define his policy and views in terms of urban renewal in the Dominican Republic.

"People criticize me, and my government due to the fact that we are building houses for the poor, as we do in Santo Domingo; and because we build streets and water reservoirs in the small communities of the country. Nevertheless, when houses are built in Santo Domingo we are creating many sources of employment for those who lack enough income for their families. The houses generate jobs for construction workers, for those who make concrete blocks, for those who prepare the steel bars, for those who transport the construction material, for those hardware stores and for those who import such materials; in other words, the construction of a house has a multiple effect over the economy of any country. The French say: When a construction worker works the entire nation works."

This is the reason why I build houses, and construction projects that may seem monumental. I build houses, I build reservoirs, simply because construction has a multiple effect in the economy and allows a large number of people to work, who otherwise will be unemployed. In the street of Paraiso or in the streets of any small community of the country—such is the case of Bonao—or in those poor neighborhoods where people live in major poverty, the government does not initiate monumental works: in those places we build for the benefit of the poor so they can improve their standard of living; and we build to benefit the national economy.

Furthermore, when we build a house in a poor neighborhood of Santo Domingo, who benefits? a person born in the city? No, a farmer from Barahona, from Polo, from Cabral. Because Santo Domingo does not belong any longer to the natives of Santo Domingo; Santo Domingo belongs to the peasants.

Those who live in deprived conditions in the major cities of the country are farmers; they are farmers who have left their farms, who have migrated to the city following a mirage which show better working conditions, or a better standard of life. In summary, ladies and gentlemen, I will resolve a range of problems in the Southern area of the country; from small problems, which include the building of a school and the streets of Paraiso—which you

have requested—to the construction of the Jigüey and Aguacate dams and the construction of the Valdesia reservoir to construction in Santo Domingo.

These works which may seem monumental,—the Jigüey and Aguacate dams—and the reservoir of Santo Domingo are going to be financed with local funding through tax payers money and without loans from national and international sources. This is the secret of the Dominican Public Administration: to use the tax payer's money for what it should be used, and not to dispose of these funds to benefit a few officials or a few privileged people with influence in the government" (Construcción Dominicana).

BASIC SERVICE PROVISION

The quality of life, especially for those who reside in urban areas, depends of the provision of basic services in the form of roads, water supply, sewage, and drainage systems. The capital cost of such services is high, especially if they have not been provided in coordination with the construction, have to be carried long distances, or are responding to explosive population growth.

Traditionally, these services have been provided by governments and they constitute heavy burdens in their fiscal budgets. When managed by governments, operating and maintenance costs of basic services are usually much higher than the income generated from the services. Thus the operation of basic infrastructure requires heavy government subsidies.

In the Dominican Republic, these basic services are in disarray and have become a real constraint to urban development. The following discussion explores particular problems and constraints in infrastructure servicing in the Dominican Republic.

Transportation

Transportation systems are acceptable except in the eastern portion of the country, which has great tourist potential. The city has a fair amount of paved roads, although not in squatters settlements where maintenance is poor. The total transportation system is 4,935,200 kilometers. During the period 1986-1990, the government built 575,695 kilometers of transportation and another 847,878 kilometers are presently in construction. (See Figure 1)

Energy

One of the major constraints faced by the Dominican Republic is the lack of electricity. What becomes paradoxical is the fact that Corporación Dominicana de Electricidad (CDE)—the government agency that sells electrical service—has the capacity to supply the demand. According to experts, the main problem seems to be related to the poor maintenance of the power plants and the distribution systems, and to the frequent scarcity of fuel, which must be bought with hard currency.

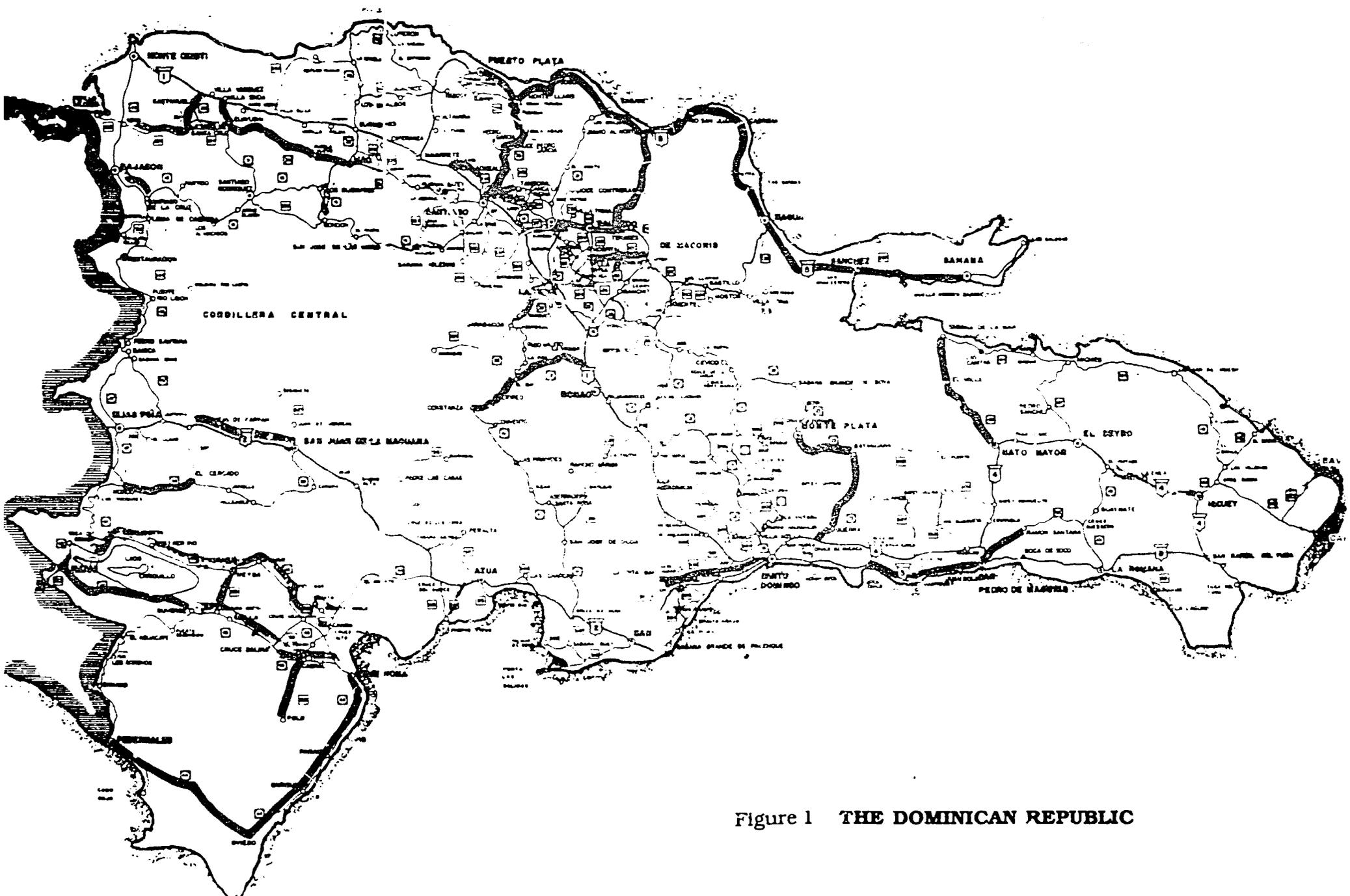


Figure 1 THE DOMINICAN REPUBLIC

Blackouts have increased dramatically in the last few years. In 1984 blackouts lasted around 1 hour; in 1988 they increased to 3 hours; in 1989 they became as long as 5 hours; presently they may last up to 16 hours and occur almost every day. Delivered energy has been estimated at 85.4 percent of maximum potential production, while the demand is 99.8 percent. The present effective deficit is believed to be above 300,00 Mw.

Santo Domingo consumes 68 percent of the country's total energy, while Santo Domingo and Santiago combined, consume 78 percent of the total energy produced in the country. One hundred and sixty million dollars have been invested in emergency plants, of which 30 percent have been purchased between January 1987 and August 1988.

At present, the government is providing incentives to the private sector for the servicing of energy to households, industries, and tourism, and it is expected that by the end of the year these private companies will help to reduce the present deficit.

Potable Water:

The Dominican Republic has extensive natural water resources that could irrigate the entire country without difficulty. Nevertheless, today potable water adequate for human consumption is scarce. The main reasons for this scarcity is the extensive problem of deforestation which started 50 years ago and affected the forests around rivers, causing sedimentation and erosion, degrading rivers and streams. This deforestation was caused mainly by livestock practices, increased numbers of human settlements, and inadequate agriculture practices.

In most cities potable water is insufficient and its quality is questionable. Official sources have estimated that 70 percent of the water supply to urban centers comes from the subsoil and contains high levels of salt and microorganisms that are dangerous for human consumption. The supply of drinking water in Santo Domingo is highly inefficient. The potable water system was created in 1926 when the population of the city was 50,000 people. Through the late 1950's scarcity began due to an increase in the demand caused by population growth. By 1960 the city of Santo Domingo had 367,057 dwellers. As early as the 1960s the waste in the distribution system was estimated at 40 percent. Through the years, several extensions have been made to the water system, the most significant in 1961 and in 1977, when the Rio Isabela reservoir was incorporated into the system.

The main problems concerning potable water in urban areas can be summarized as follows (Foro Urbano, 1990):

- (a) Present levels of water supply are insufficient to satisfy the demand in major urban centers.
- (b) Usually drinking water does not have acceptable standards in terms of quality.
- (c) Water supply services cannot be guaranteed for any 24-hour period.

Table 5
Total Energy Consumption by Sector (megawatts)

Year	Residential	Commercial	Industrial	Government
1979	495.66	199.97	621.13	152.70
1980	540.94	220.63	672.02	235.10
1981	594.55	244.60	741.02	270.69
1982	658.29	272.68	831.78	173.57
1983	735.45	305.60	949.91	186.25
1984	822.78	342.80	1,082.83	199.94
1985	922.14	384.93	1,232.43	214.72
1986	1,035.48	432.42	1,400.79	230.67
1987	1,164.59	486.27	1,590.13	247.88
1988	1,312.28	547.24	1,803.48	266.48

- (d) Over 50 percent of the water is wasted in the distribution system.
- (e) There is poor utilization of drinking water in industries, agricultural activities, and commercial use. Potable water is used in these activities, although it is not necessary.
- (f) There is lack of community participation in the decisions affecting water supply services.
- (g) There is poor water management and control.
- (h) There is poor utilization of staff resources within the government, especially at middle and intermediate levels.
- (i) There is poor recovery of revenues. As a consequence, water supply services generate deficits and are doomed to require a large amount of government subsidies.
- (j) Septic tanks are widely used and tend to contaminate drinking water resources.

Sewage, Garbage Collection, and Sanitation

The magnitude of the sewage system problem at the national level is evidenced by the fact that of the 147 localities receiving water only 24 have a sewage system. It has been established that 20 percent of the population lacks any type of sewage system service.

Most formal settlements are not connected to the main sewage system and use septic tanks. The sewage system in Santo Domingo was built during Trujillo's regime for a population of less than 500,000 people. Most informal settlements use individual latrines or public latrines, and in worst cases urban dwellers use plastic bags to dispose of wastes which are thrown into rivers or empty lots. Santo Domingo and Santiago face additional problems concerning sewage. Sewage systems drain directly into the Caribbean sea and Yaque River creating high levels of contamination.

Another area of extreme urgency in the Dominican Republic is garbage collection. The lack of garbage collection is seriously affecting large numbers of families. The lack of this service is noticeable by direct observation. When walking the streets of any major city, it can be noticed that garbage has not been collected for several days. In the best cases, when the system works, it has been estimated to have an efficiency of only 70 percent, and this is in the main tourist enclaves.

In all neighborhoods large amounts of garbage can be found in empty lots, backyards, green areas, and alleys. This situation becomes more critical in areas with high population densities, such as squatter settlements. Sometimes the lack of efficiency has political implications. Mayors are not always from the political party in power. When this is the case, the efficiency of the municipality's services is seriously affected.

In Santo Domingo, besides the environmental contamination derived from lack of garbage collection, intensive traffic, and construction activities, dwellers have a difficult environmental problem. A cement industry, various industrial zones, a metallurgic plant, and several thermoelectric plants are located within the limits of the urban area, causing environmental contamination and pollution at dangerous levels.

PRIVATE SECTOR INVOLVEMENT

From 1970-1978, the government of the Dominican Republic supported massive construction programs. In contrast to these earlier years—when sugar prices were high, oil prices were favorable, and U.S. aid was more than 100 million per year—the present economy has not been able to sustain the high levels of public works spending; the results have been increasing inflation (Table 6).

By some estimates, the government has expended around \$1 billion during the last four years in public works construction. According to various sources in the Dominican Republic, the government has produced "inorganic" money to pay for these expansive public works projects. In other words, new money has been "printed" to consolidate the national budget. This fast growth of the money supply to finance public works, plus a maxidevaluation of the peso starting in 1986, have been, according to some experts, the main causes of inflation. This situation has greatly affected the participation of the private sector in the construction industry.

Table 6
Consumer Price Index and Rate of Inflation

Year	Consumer Price Index	Rate of Inflation
1978	107.11	-
1979	116.93	9.2
1980	136.52	16.8
1981	146.81	7.5
1982	158.20	7.8
1983	168.97	6.8
1984	210.27	24.4
1985	289.18	37.5
1986	317.35	9.7
1987	367.81	15.9
1988	521.23	41.7

Source: Banco Central in *Boletín Banco Hipotecario*, No. 6, February 1990.

When inflation increases more than 20 percent the activities of the housing financial system start contracting. This situation becomes more critical when, during high periods of inflation, investments are devoted to the acquisition of existing real estate, or are transferred to banks in the United States. Until 1982, it was possible for the housing finance system to grant long-term loans. Funds captured from private sources had a stable and low-interest rate. Interest rates were fixed at 12 percent and loans were granted for 20 years. Major types of housing finance institutions in the country are as follows:

- a) *Mortgage Banks.* Their primary role is to finance housing units for high-income families. At present there are about 14 mortgage banks operating in the Dominican Republic. They capture their funds from private sources, and their loans are oriented to developers and homeowners.
- b) *Savings and Loans System.* This system is regulated by El Banco Nacional de la Vivienda. Its primary function is to finance housing units for middle- and below middle-income families. These institutions capture their funds from private sources and serve as financial agents to Instituto Nacional de la Vivienda (government institution for housing) and to Instituto de Infraestructura Turística (government institution that regulates tourism in Puerto Plata).

- c) *Private Enterprises.* There are profit organizations that deal with the construction and commercialization of housing units for various income groups. At present there are more than one thousands of these organizations. Their activities include construction, financing, acquisition, and sales of housing and lands, as well as administration.

In 1971, a number of economic tensions were felt in the Dominican Republic. The beginning of an economic crisis started great transfers of capital from the Dominican Republic to the banks in the United States since interest rates offered by the banking system in the Dominican Republic were not attractive to local investors. The economy entered into a deep recession. Negotiations with the IMF took place in 1982, resulting in the adoption of corrective measures, such as increasing interest rates in the mortgage system. In 1985, another set of negotiations took place, whereby it was decided to allow the finance system to adjust interest rates periodically. From there on, interest rates have been increasing rapidly. Presently, interest rates are from 30 to 32 percent in contrast to only 14 percent in May 1988. Closing costs on the sale of real estate are 9 percent and loans are granted for a maximum five-year period.

Due to the resulting inflation, construction materials, land, and labor have experienced large cost increases. Moreover, due to the demand from the public sector, construction materials have become scarce and their prices have exceeded the rate of inflation. As a result, housing units have experienced large price increases. It is hard to find a dwelling unit for less than 200,000 pesos. In order to qualify for a loan of this amount, a family must earn an income of around 20,000 a month.

Although income data is not available for 1990, it can be inferred from data in Table 4. that a very small fraction of the population can be considered for housing loans presently. Increases in the housing construction costs are estimated as follows:

1981	160 pesos per square meter
1984	300
1986	455
1988	1,000
1990	1,400

The increases estimated for low-income housing are 875 percent and over 1000 percent for houses of medium-income families. As a result, the participation of the private housing finance system in shelter provision has decreased greatly. Capital investment is moving toward other more productive sectors of the economy where special concessions have been granted by the government under certain parameters, thus reducing the amounts of private mortgage and loan financing that could be directed to the construction industry.

As the movement of the population to urban areas accelerates, it is important to view housing as a benefit important to individuals and cities. Neither economic sector—public, private, or informal—can fulfill the housing needs in urban centers caused by large migrations of the population. Although data are not available for

Table 7
Public and Private Sector Participation in Construction
Dominican pesos (millions)

Year	Public Sector	Private Sector
1970	69.2	77.8
1971	107.7	96.0
1972	145.4	113.6
1973	151.9	159.3
1974	178.8	227.1
1975	262.4	240.1
1976	259.5	258.9
1977	297.9	321.2
1978	260.1	446.0
1979	197.3	650.2
1980	244.1	725.9
1981	250.4	836.4
1982	201.1	881.6
1983	271.4	1,082.4
1984	242.0	1,542.0

Source: Central Bank in report from *Asociación de Bancos Hipotecarios de la Construcción*.

1988. Table 7 and 8 show that different sectors have indeed participated in shelter provision.

An ideal situation in terms of urban development would be to view public housing as an element of income distribution to channel and promote better standards for the poor; where the private sector is willing to participate in low-cost housing to help to improve the quality of life of low-income families, and provide assistance in the spatial layout of growing areas; and where the ability of the poor to build a large part of the low-income housing stock is acknowledged and resources are channelled accordingly.

TOURISM IN THE DOMINICAN REPUBLIC

Although tourism and free zones are two of the most important economic sectors in the Dominican Republic and their impacts have been anticipated, there have been no studies that compare both of these economic sectors with urban development.

Table 8
Housing Production (Units), 1970-1980

Variable	Total	Public	Private	Informal
Housing Units Total	399,451	44,290	24,991	330,170
Urban	256,043	42,992	24,991	188,060
Rural	143,408	1,298	0	142,110
Investment Pesos (million)	673.0	302.3	370.7	

Source: INVI, *Estadísticas Básicas del Sector Vivienda: República Dominicana 1970-1981*, Santo Domingo.

Tourism, which has replaced sugar as the Dominican Republic's largest industry, produced more than \$600 million in foreign exchange last year and is growing rapidly (Table 9). Eighteen free-trade zones have been developed and become profitable in recent years and presently employ 120,000 people in light manufacturing and assembly plants.

Tourism is considered an important leading sector for economic development in the Dominican Republic. It has been estimated that in 1988 its contribution to the economy was 2,861.5 million pesos, which represents 10 percent of the GNP. Tourism was only surpassed by the industrial sector, which showed a contribution of 15 percent, the commerce sector with a contribution of 17 percent, and the agriculture sector with a contribution of 12 percent. On the other hand, the livestock, mining, and construction sectors contributed lesser amounts to the national economy.

The contribution of tourism to the economy can be understood in terms of its various linkages to other sectors. In 1988, tourism created a food demand of 246 million pesos (4 percent of total livestock demand); 35 million pesos in beverages (4.7 of total sales); 10 million pesos in textiles and apparels; and 44 million pesos in paper, printing, and office supplies, represented 14 percent of total construction; and generated 41,220 direct jobs.

The positive impacts of tourism include: the demand for services and infrastructure, thus increasing social overhead capital; contributions to decreasing regional disparities by incorporating regions omitted from the industrial sector; in-

Table 9
Foreign Exchange Earnings
(US millions)

Variable	1970	%	1988*	%
Goods	214	83.5	890	47.5
Traditional	177	169.1	300	16.0
Minerals	15	5.9	391	20.9
No traditional	22	8.5	199	10.6
Services	42	16.4	984	52.5
Tourism	16	6.3	627	33.5
Free zones	-	-	150	8.0
Other services	26	10.1	207	11.0
Total	256	100.0	1,874	100.0

Source: Banco Central in Impact del Turismo en la Economía Dominicana.

creases in government income; capture of hard currency to increase the balance of payments deficit; generation of employment in all sectors of the production of goods and services; and the generation of income in commerce, foods, agriculture, manufacturing, industry, entertainment, and crafts.

Opposing views state that the potential of tourism as a leading sector for development has long been exaggerated. For example, if tourism development is not carefully planned, several negative impacts can occur, such as environmental degradation, whereby assets that make the particular country attractive, can be destroyed. Some critics also contend that tourism is not a labor-intensive industry, generates a large number of operations managed by foreigners, and is a seasonal industry despite efforts to promote tourism during the entire year.

One of the problems that the tourist industry is facing in the Dominican Republic is the lack of basic services. According to experts, in order to compensate for various deficiencies in water, transportation, and electricity (in spite of backup systems, when blackouts occur, comfort decreases 30 percent) promoters are forced to promote the Dominican Republic as an inexpensive destination. Average earned occupancy per room is estimated at \$35, compared to \$87 in most other countries of the Caribbean.

The reasons for low price occupancies are also related to the large devaluation experienced by the national currency during the past five years, while the number of tourists continue to increase at a rate of 17.6 percent. It is expected that by 1990 the number of arrivals will increase by 20 percent.

Table 10
Number of Tourist Arrivals

Year	Number of Tourist	Real Growth
1980	484,125	-
1981	502,374	3.77
1982	482,404	3.98
1983	469,731	-2.63
1984	507,320	8.00
1985	587,006	15.71
1986*	678,192	15.53
1987*	818,703	20.43
1988*	935,714	14.30
1989*	1,100,000	17.60

Source: OIV, SECTUR, Ministry of Tourism.
*Preliminary data

Table 11
Travel Earnings
(US\$ millions)

Country	1980	1985	1988	Real Growth	
				1980-85	1985-88
Barbados	252.4	310.8	381.0	-1.0	7.5
Belize	n/a	10.7	24.4	n/a	27.9
Dom. Rep.	176.6	451.0	592.7	15.1	6.2
Guyana	3.9	26.8	n/a	39.6	n/a
Haiti	76.3	95.1	71.6	-0.8	-11.8
Jamaica	240.7	406.8	507.1	5.5	4.4
Suriname	18.7	5.3	3.6	-26.2	-14.6
Trinidad & Tobago	153.1	97.2	93.6	-13.3	-4.7

Source: IMF in Economic Trends, Policies and Prospects.

With respect to other countries in the Caribbean, the Dominican Republic shows a tourist growth higher than Jamaica—a strong competitor in the area—between the periods 1980-1985 and 1985-1988 as shown in Table 10.

At present, the Dominican Republic has 17,000 hotel rooms, which is the largest offering in the Caribbean. Currently, 7,000 additional rooms are in construction. Twenty one percent are located in Santo Domingo, 38 percent in Puerto Plata, and 33 percent in the Southeast region.

The International Development Bank is at present undertaking a study on tourism in the Dominican Republic. Table 12 is a listing of the major areas planned for tourist development.

Colonial Zone in Santo Domingo

The Colonial Zone is the most important tourist resource in Santo Domingo, although there are several beaches within a close distance from the city including Boca Chica, Juan Dolio, and Guayacares. There are 28 monuments that have been declared historical in the old part of the city, and another 40 will eventually be added to the national inventory. The importance of the Colonial Zone is related to its long history, being the first settlement in America. The settling of the city occurred in 1502, and the construction of most monuments goes back to the first half of the 16th century.

The Colonial Zone includes commercial activities and housing with a population density of 155 persons per hectare. There is no homogeneity in terms of architectural style since the city has been under the influence of several colonial powers, including Spain and France, and in recent times, the government and private sectors have built numerous modern buildings for institutional and commercial activities. The Colonial Zone has an area of 90 hectares and 116 blocks. The population of the old city has been estimated at 10,300. The main tourist areas are centered around La Catedral, La Fortaleza Ozama, Las Casas Reales, El Alcazar de Colon and El Conde Street, which is a sub-sector of the old city.

From 1968 through 1979, large renovation and rehabilitation programs took place at times when the present administration was in office. During the period of 1979-1986 this activity declined, and most of the public works budget was devoted to maintenance. From 1986 to the present, increased construction activity has taken place, mostly related to the Fifth Century Anniversary.

In spite of the resources channelled in the past to the old city, its historical importance and its beauty, the Colonial Zone has not attracted the number of tourists that could be expected. In fact, numerous free zones and gift shops have gone bankrupt due to the lack of commercial activity.

Table 12
Territorial Planning for Tourism

Monte Cristy	:	Playa de Note Cristy Punta Rusta Ensenada Estero Hondo
Costa Norte	:	Puerto Plata Sosua Cabarete Gaspar Hernandez Rio San Juan
Cabrera-Nagua	:	Nagua Cabrera (limits Punta La Garza to Samana)
Samana	:	The entire province
El Seibo	:	Beaches Sabana de la Mar Bahia de Gil Playa del Morro
East Cost	:	Beaches from Miches to Juanillo
Bayahibe/La Romana:		Beaches from San Pedro de Macoris to Juanillo
Costa Caribe	:	Boca Chica Guayacanes Juan Dolio
Santo Domingo	:	Historical Centre South Coast Urban Center
Haina-Nelba Golf	:	Beaches from Rio Haina to Barahona town
Barahona-Pedernales :		Beaches in Barahona Enriquillo Lagune Beaches in Pedernales: Bahia de las Agullas Oviedo Lagune Jaragua National Park
Jarabacoa-Constanza :		Mountains

Three main reasons can be identified for this lack of success:

First, within the old city the majority of cultural institutions, museums, and office buildings operate only until five o'clock. The Colonial City is deserted at night. There is no entertainment to attract locals and visitors to the area.

Second, when the Colonial Zone was first rehabilitated the original concept was that ships could disembark close to the main gates of the old city and tourists could walk throughout the different historical sites. However, the landing area for tourists at Santo Domingo Port was displaced to further out locations by the intense commercial activity at the port. Presently, promoters must drive tourists from Sans Souci Port to selected destinations, and tourists have visited only a small portion of the old city, omitting other important centers, such as San Francisco, San Aton, los Dominicos, Regina, and Mercedes. As a result, small business activities have declined, closed their doors, or are visited only by nationals. At present, Santo Domingo Port is being remodeled to reinstate and expand tourist activities.

Third, the problems related to the lack of electricity, water, sewage, and garbage systems—in addition to some environmental problems—are of great concern. These problems are no different from those previously described for the city of Santo Domingo in this report. The electrical system of the Colonial Zone is 60 years old and has not received proper maintenance; it is inefficient, unsafe (due to the large number of illegal connections), and visually unpleasant.

Potable water is also insufficient and its drinking quality is questionable. The potable water system has received poor maintenance and 12 percent of the water supply is wasted in its distribution. The garbage collection is acceptable when compared to Santo Domingo, but the old city does not look clean. The city is difficult to clean manually due to its configuration and no mechanical cleaning systems are available. In addition, there are no garbage baskets available. The low quality of urban services is a decisive factor in the rate of tourism in this area.

At present, there is an effort to rescue the Colonial City and transform it into a major tourist area. The Program Santo Domingo, Cuna de America is being implemented, with local funds and contributions from several international organizations and some key projects are expected to be ready for the 500th Anniversary of Columbus' arrival to America.

This program has the objective of implementing a physical strategy that can contribute to and improve social-urban systems. Emphasis has been made on eight monumental sites that are expected to stimulate the attention of international and local visitors. Part of the program is also oriented to improving drainage systems, garbage collection, and potable water supply. Target sites to be improved in the program are as follows:

Casas Reales Museum, Columbus Palace, and Ataraza streets: At present, this area is the most important in terms of tourism. It includes a hotel (Hostal Nicolas de Ovando) and several restaurants and cafeterias. The area will be improved, but its usage will remain the same.

The Catedral and Columbus Plaza: This area is planned to become the heart of the Fifth Century Anniversary. This area is proposed to be the site of various hotels, restaurants, and commercial establishments.

La Fortaleza: Its function as the main entrance of the old city will be highlighted.

Santa Barbara and Atarazana streets: This area will become the "rose zone" where a number of hotels, restaurants, nightclubs, and museums will be concentrated. The worst slums of the old city are currently concentrated in this area.

Los Dominicos: A limited number of hotels and restaurants will be located in this area (currently the neighborhood is mostly housing).

San Francisco and San Anton: This is proposed to be the city of craftsman and artisans. A number of shops, studios, and antiques shops will be located in this area.

San Jose: A number of theaters, amphitheaters, cultural and recreation centers will be located in this area.

Mercedes, el Carmen and Regina Angelorum: In addition to tourists, this area will be oriented toward business persons visiting the city. A number of stores, and services will be located in this area.

The total number of hotel rooms available in Santo Domingo is 3,500 units of which only 176 are located in the Colonial Zone (plus 17 restaurants, 15 bars, and 23 coffee shops, most for local use). Between 1983 and 1988, the number of rooms increased by 4.9 percent, contrasted to a 19.9 percent increase in Puerto Plata. Nevertheless, with the implementation of the new programs it is expected that accommodations will increase by 5,000 rooms.

Tourism in Puerto Plata

The following qualitative information was collected from direct observations and interviews and is presented as an extension of other data on Puerto Plata presented throughout this report.

Puerto Plata is the location in the Dominican Republic where the impact of tourist development is most evident. At present, tourism is the main source of income: it is believed that for each family at least one member is directly employed in tourism and another benefits indirectly.

At the beginning of the tourism industry, a large amount of housing and infrastructure was built in order to support emerging industry. A sewage system, an electrical power plant, an airport, and the rehabilitation of the port were part of a massive construction program that took place in Puerto Plata around 15 years ago. These public works cost over 100 million pesos (1976 prices).

Despite the large inflows of capital infrastructure, Puerto Plata is experiencing a number of problems, at present, that could hinder the development of the tourist industry. These constraints can be categorized as follows:

Housing: A total of 900 thousands units were built in the center of Puerto Plata in an effort to anticipate the large demands for housing caused by the birth of the tourist industry. This urban expansion plus the availability of new jobs brought dramatic inflows of population to Puerto Plata. The city is crowded and the number of squatter settlements is increasing. Although there is a regulatory plan for the city, there is no enforcement, and sites and buildings with historical value are being destroyed.

Basic Service Provision: Puerto Plata has similar problems of basic services as the other major urban areas of the Dominican Republic. The main difference is that these basic services in Puerto Plata are a *sine qua non* for expansion and sustainability of the tourism industry. In terms of water and electricity, most hotels have wells and power plants to compensate the limited services, but hotel owners express that for full capacity operation an effective basic service delivery is required.

In the early stages of the tourism boom, the supply of electricity was larger than demand. It was anticipated that the present supply would exceed the demand (hotels presently account for six percent of total demand, but by 1995 will require 15 percent). Due to the fact that some hotels increased their planned capacity by increasing rooms, the deficiency in electrical power has increased to the point that black-outs last as long as six or seven hours daily. Also, electrical systems have received very low levels of maintenance.)

In terms of water service provision most hotels have private wells or buy water from trucks. Frequently, this water is not suitable for human consumption initially, the hotels do not treat it properly. For example it has been established that in Sosua (3,500 rooms), although they have a water system, 41 percent of the hotels have to buy water from trucks; 50 percent do not treat the water; and 6 percent buy bottles of potable water. Furthermore, since a large number of hotels construct septic tanks with poor techniques, the water of the subsoil is being contaminated.

Airport: When the airport was first built it was estimated that it could provide services for 20 years. As a consequence of the tourism industry boom, after the first five or six years it became ineffective. The main problems with the airport are related to the fact that officials and staff are politically appointed and do not receive airport management training. In addition, several expansions are needed; runways and parking spaces need to be increased, and new areas should be added for airline offices (at present three or four airlines operate in the same office).

Port: Between 1984 and 1985, nine ships regularly disembarked weekly at Puerto Plata. However, at present, only one ship regularly visits the port. Ship agencies see Puerto Plata as a natural destination, since facilities can supply water and food to the ships. Nevertheless, they believe that conditions are not adequate for them to stop at Puerto Plata at present. They understand that dredging works are needed, food is too expensive, there are few taxis and buses available (and these vehicles do not have air conditioning), and the port is dirty and full of beggars. One problem with transportation in Puerto Plata is that there are no tax regulations or standard fares. Tourists can be over-charged and this tends to restrict their visits to the town.

Small Business and the Town: The tourist industry itself seems to have had a negative effect on the economic and social activity of the town. Some citizens assert that hotels owners are not interested in the welfare and development of Puerto Plata. They argue that the only concern of hotel managers is their profits.

Businessman of the town claim that the number of tourists has decreased tremendously in the last years. They associate this reduction with the fact that the large hotels offer most services and entertainment to the tourist and, as a consequence, they do not encourage tourists to visit the town. Moreover, tour operators drive tourists directly to the few business that have the resources to pay a commission for tourists brought to the business. Many restaurants, and gift shops are monopolized by the tour companies. Under these conditions, small business can not compete and many have gone bankrupt.

In terms of the lack of basic services, small businesses appear to suffer the most. They do not have backup power plants, while at least 70 percent of the hotels have power plants. Furthermore, although there is no serious crime in Puerto Plata city, tourists are advised not to visit the city due to crime and lack of electrical power, especially at night.

The increase of tourism in Puerto Plata appears to have resulted in the separation of the resorts and the town through an almost fortress mentality. Attempts are made by the hotels to keep the tourist and their money within the resorts, while limited hard currency goes to town.

In addition, the hotels tend to buy food, products, and equipment from other areas of the country since they consider the local craftsmanship to be inferior to goods produced in Santo Domingo or abroad.

In conclusion, although large numbers of the local population are employed by the hotels, these are usually menial jobs; support goods and services are not purchased from the town; tourists are hampered from visiting the town and buying goods; and the profits that are realized from the hotels return to investors in other parts of the country. The situation appears to hinder the capacity of tourism as an economic model to provide solutions to the problems of underdevelopment.

FREE ZONES TRENDS IN THE DOMINICAN REPUBLIC

The emphasis the structural adjustment of the economy has placed on manufacturing for export, the need to increase sources of employment, and the decline of the peso against the U.S. dollar have been major reasons for the government policy to expand the free zones in the Dominican Republic.

The first free zone in the Dominican Republic was established at La Romana in 1969 on a trial basis. In less than 20 years, the Dominican program has grown to encompass 18 operational zones, four zones under construction, and eight additional projects under active development. In 1982 there were only three free zones housing 60 companies.

Since 1983, over 138 additional U.S. companies have invested in new business ventures in the Dominican Republic, far more than in any other country of the region. The Dominican Republic has become one of the most competitive sites for foreign investment. In the beginning, U.S. owned operations were concerned mainly with apparel export, but lately, they have emphasized electronic and agroindustrial activities.

At present, there are eight free zones owned and operated by agencies of the Dominican Government; four free zones owned by private corporations or foundations, but operated on a non-profit basis; and six free zones owned and operated on a for-profit basis by private corporations.

The Dominican Republic is perceived as a suitable location for the volume production of items aimed at the middle- and lower-price scales of the market. It is believed that the Dominican Republic is providing a sound environment for free zone exploitation. Some of the incentives can be summarized as follows:

- A large pool of unskilled workers (unemployment is estimated at 30 percent), particularly women with informal sewing/dressmaking skills;
- The decline of the peso against the U.S. dollar; a minimum wage of only \$0.89 an hour;
- Low cost production package;
- Duty free entry of all raw materials, intermediate goods, machinery, and equipment;
- Exemption from all corporate income taxes and fees for a period of 8-20 years;
- No financial reporting requirements other than for local expenses;
- Freedom from foreign exchange controls;
- Unlimited repatriation of capital and profit;

Table 13
Export Earnings
(US millions)

	Free zone export earnings	Dom. Rep. net foreign exchange earnings from free zone	Dom. Rep. export earnings
1980	117.1	44.5	960.4
1981	135.8	57.6	1,189.6
1982	147.9	61.1	786.7
1983	175.0	61.9	787.7
1984	193.7	52.1	872.4
1985	204.7	44.6	745.0
1986	250.0	88.5	723.0
1987	323.7	98.1	717.1
1988	516.8	129.8	901.6
1989	692.0	180.0	1,018.6

Source: CEDOPEX and Banco Central.

- Accelerated investment approvals;
- Eligibility for benefits under the Caribbean Basin Initiative;
- Facilitated custom clearance;
- Up to 20 percent by value of production may be sold on the local market (although the product is liable for 90 percent of the import duties on the raw materials used);
- Proximity to the U.S. and good communication facilities;
- Lack of labor unrest and strike activities; and
- Political stability, and a pro U.S. government.

The industrial free zones are considered the most dynamic export sector. Free zones have a present growth of 10 percent (the exception is the 1982 closing of la Romana), while the rest of the industries including sugar have experienced a growth of under 10 percent, with negative growth for 1975, 1976, 1984, 1985. Sugar alone has had an average growth below the average growth experienced in the free zones (Fundación Economía y Desarrollo, Inc.).

Table 14
Growth of Free Zones

Year	Number of Firms	Employment	Under Roof Space
1979	24	11,500	925,000
1980	25	16,404	1,264,000
1981	30	19,456	1,370,000
1982	93	19,626	1,480,000
1983	107	22,272	1,680,000
1984	125	27,126	2,100,000
1985	146	35,720	2,750,000
1986	166	51,231	3,408,000
1987	178	69,538	4,970,000
1988	236	85,468	6,910,000
1989	290	112,000	8,140,115

Some have compared the present situation of the countries in the Caribbean who have undertaken export-oriented policies, to the Far East in its infancy. As capital investment flows into the region, the standard of living and the skill level of the work force improves. Nevertheless, some argue that the benefits are limited. Both pros and cons of free zone development are as follows:

Host Country Benefits

- Decreases the rate of unemployment.
- Capital costs are reduced since inputs and equipment are usually provided by foreign contractors.
- Workers and management gain technical skills.
- Benefits are gained with minimal foreign exchange cost.

Host Country Limitations

- Host country does not gain experience in the more technical aspects of an industry, such as design and marketing.
- Profit margins are low, foreign exchange earning potential and capital accumulation opportunities are limited.

- Infrastructure investment requirements can be substantial.
- There are no restrictions on repatriation of profits or capital for companies operating in the zones.

Another constraint that has been identified for future growth of free zones is the continuing deterioration of public services, particularly electricity. Investors are presently reporting that they require two or more back-up units and, have to rely on back up power supply for 40-60 percent of their business operation, which can represent a 20 percent or more increase in operation costs.

As a response to these problems some free zones have been connected to the national electrical distribution system, which seldom experiences power failures. Investors in the free zones must consider the installation of back up generators as part of their operational cost. Nevertheless, investors have indicated that even with the blackouts, free zone profit margins remain high.

Another trend that the expansion of free zones is experiencing is the increase of salaries. The minimum wage has increased several times in recent years. At present, these increases have not affected operations costs, since local currency has been devaluated at the same proportion. However, there is pressure to raise the minimum wage to as high as 1,000 pesos per month from the current level of 650 pesos per month.

Free Zone Impact on Urban Development

During the last 10 years, free zones have expanded throughout the Dominican Republic (Figure 2). They have expanded in terms of the numbers of businesses, workers, and geographical distribution. These facts suggest that future population transfers and increased densities may occur, influencing the present demand for shelters and infrastructure at these locations.

In 1988, the growth of this sector in terms of direct and indirect employment was estimated at 400 percent. The active economic force in the Dominican Republic increased by 95,0009 workers, of which 27.85 percent was attributed to the free zones (Fundacion Economica y Desarrollo).

The number of employees generated by each free zone varies. It appears to depend of the size of the free zone and the economic activity of the various industries. An average labor force of 237 per company was established in 1988. Some previous studies in 1980 suggest that textile activities generate 395 employees, assemblies 260 workers, electronic equipment 345, leather goods 174, and tobacco varies from a maximum of 427 to a minimum of 266 workers.

Presently free zone development is preventing people from moving to major urban centers. The zones are located away from overcrowded cities, such as Santo Domingo and Santiago, in areas where the labor force is abundant. Nevertheless, various studies performed in 1981 showed that 61.6 percent of the workers (80 percent women; 90 percent of their husbands are not working or are unemployed) had arrived in San Pedro, La Romana and Santiago over the last 10 years.

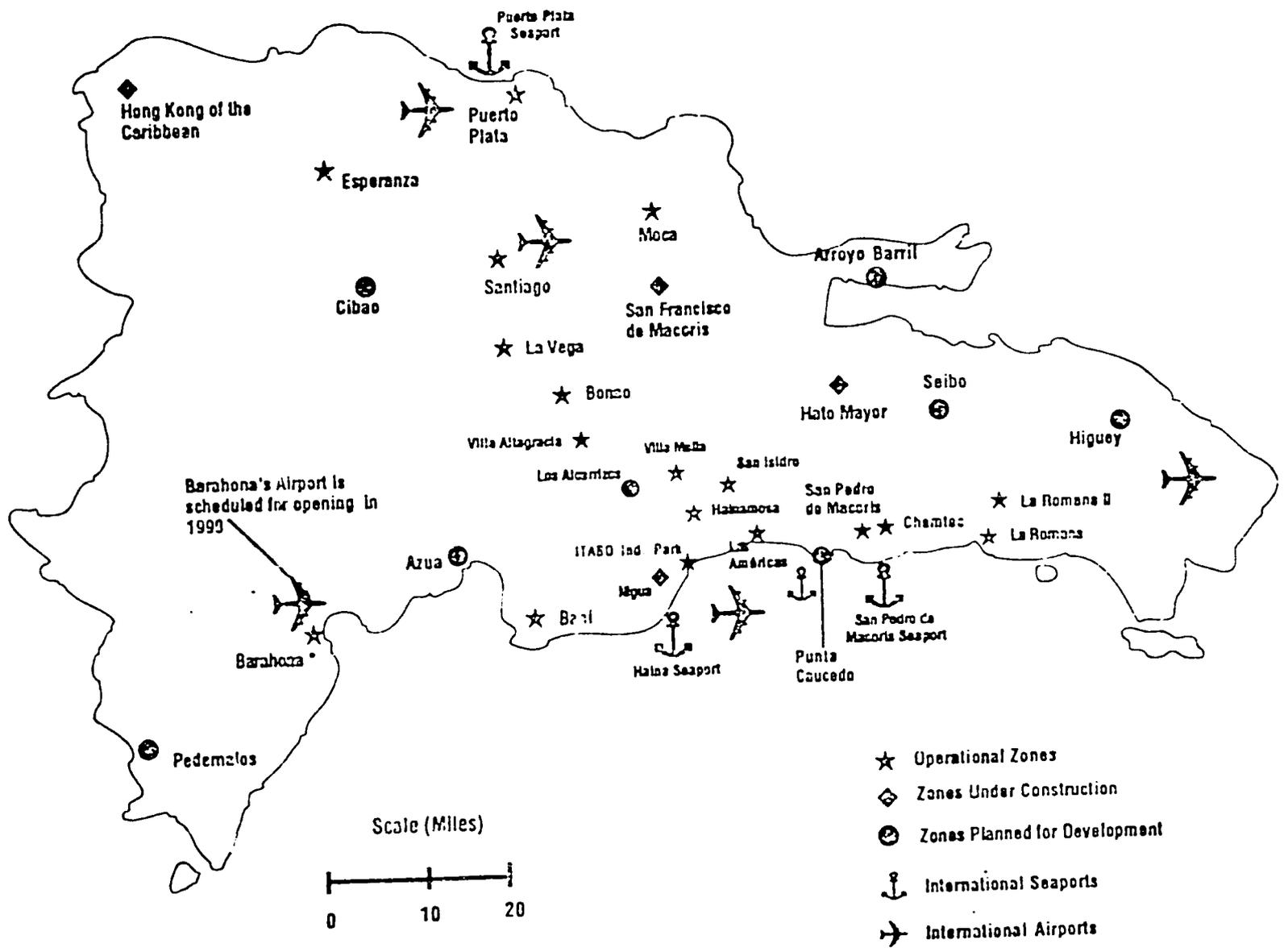


Figure 2 DOMINICAN REPUBLIC FREE ZONES

To estimate the future demand for housing as a result of this labor transfer is beyond the scope of this work. Nevertheless, in visiting various free zones, it is easy to see that a need for shelter in the area of the free zones should be anticipated. Many anecdotes like the following illustrate the problem.

Jose Antonio Ciprian de Leon—former policeman and presently working at the Las Americas free zone—expressed that until recently he lived in San Cristobal, 85 kilometers from Las Americas. He used to leave his home at 5 o'clock in the morning in order to arrive at work at 8 o'clock, spending 15 pesos every day in transportation. A few months ago he decided to move closer to Las Americas. He said that it was hard to find a house in the area. Most houses for rent were occupied by people working at the free zone. He rented a house two kilometers from work, which was previously rented for 200 pesos a month, and now rented for 500 pesos a month due to the lack of rental housing. Currently, he is sharing this house with his several other relatives, all of whom work at Las Americas free zone.

Also, as evidenced in the above statement transportation is another sector that requires attention when identifying constraints to the development of free zones in the Dominican Republic. Transportation is very expensive and limited and becomes a heavy economic burden for families with limited and scarce incomes. In interviews with workers at the free zone in Santo Domingo, it was discovered that many workers take two or three vehicles to get to work, spending eight or nine pesos daily. The basic salary of the workers is around 600 pesos a month, from which they must spend an average of 220 pesos in food and 160 pesos in transportation per month, leaving them a margin of 220 for housing and family expenses.

For all the constraints and problems similar to any rapidly increasing population center, free zones seem to hold an open window of opportunity for developing countries, such as the Dominican Republic. They tend to have an impact on rural-urban migration, decreasing urban densities, breaking city primacy, redirecting resource flows, eliminating regional disparities, and promoting increased equities.

Although the total impact of free zones is yet to be established, it is fair to say that the development of these entities will be critical factors in the future population migrations and urban development of the country.

Free Zone in Puerto Plata

As discussed earlier in this report, the majority of employment in Puerto Plata is provided by the tourist industry. As opposed to tourism, the free zone in Puerto Plata has evolved slowly. At present, the free zone has 14 companies with three more under construction, employing 3,000 people.

Puerto Plata free zone is partially government and partially private, run as a non-profit enterprise. It does not receive public money, unlike other free zones such as La Vega, which has received over 20 million pesos since operation started.

The constraints to the full development of the Puerto Plata free zone can be related to this lack of funding from the government, as well as the present reluctance of the local investors to borrow money at the present rates of interest of over 30 percent. Puerto Plata was selected as a free zone prior to the large scale promotion of the area for tourism. This has caused several problems.

First, since salaries are higher in tourist related jobs, this has created an escalation of salaries for employees during the tourist high seasons. Second, this free zone is the second most expensive free zone in the country in terms of rent. With the higher rents, the free zone is expected to maintain operations and growth without government funding. Third, transportation services are lacking and housing is scarce in the immediate areas of the free zone. Workers live in Santiago or in other cities and towns at far distance from the location of the free zone.

These facts seem to suggest that the free zone in Puerto Plata is constrained by its proximity to the tourist area causing many employment problems and high cost, thus reducing many of the positive benefits provided by the zones in other locations.

In the past, urban growth, economic development, and environmental preservation were issues neatly compartmentalized within sectors. Presently, there is an increasing awareness that these issues are intimately interrelated. Urban growth is usually triggered by economic development in the form of factories, industries, and human settlements; this trend of urbanization without planning—as usually undertaken in the Third World—has serious impact on the environment. In the Dominican Republic, the urban boom of the past decades can be easily traced in terms of environmental degradation.

The location of the country's three largest industrial complexes within the limits of Santo Domingo (cement, thermoelectric, steel), expose the urban dwellers to serious health risks and constitute what many environmentalist have defined as the "death triangle" of the city. These industries use no filters nor precipitators, in spite of the legal requirements from the Ministry of Public Health. As a result, strong emanations from toxic oxides and heavy metals, dense smog, gases, industrial dust, and heavy smells are spread into large portions of the city. In numerous cases the presence of metals have been found in blood tests of children; large numbers of people continuously report respiratory problems; and numerous animals in the zoo have died prematurely due to obstructions in the respiratory system. Careful quantification of air quality and the risks in humans still has not been carried out, however.

The rivers adjacent to main urban centers also present high levels of contamination. The main rivers of Santo Domingo, the Ozama and Isabela Rivers, are clear examples. The Isabela River presently is one of the sources of potable water for the city of Santo Domingo and the Ozama River is planned to provide additional potable water in the future. Through the sewage and drainage systems,

industrial and human waste reaches several portions of the rivers without previous or adequate treatment. In the periphery of these rivers can be found large number of rubbish dumps; seven drains that concentrate the discharge of 56 industries; pork farming; poultry industries; various large human settlements, hospitals, and locations for the cleaning of garbage trucks. All of these discharge into the river system without treatment.

Although tourism can bring prosperity and economic growth to many nations of the region, this pattern of development with its required roads, airports, hydroelectric, facilities hotels, and infrastructure can cause harm to the environment.

In the Dominican Republic, the lack of a current environmental policy and accompanying legislation and regulations may be already retarding economic development, and certainly will be an important constraint in the future, since degradation of natural resources can hinder the expansion of tourism.

In the north coast, especially in Puerto Plata and Sosua, numerous environmental problems have been caused by urbanization fueled by the increase in tourism. Critical problems affect Puerto Plata bay and the San Marcos River. The high water level of the San Marcos River produces the mud flat along the bay. These waterways are full of sediment, human waste, and industrial waste.

Various settlements without sewage removal close to los Charamicos (Sosua) are producing high levels of water contamination. Water from wells is no adequate for human consumption and large amount of garbage is concentrated in many sections of the beaches and in the swamps. The more significant environmental problems of the north coast can be summarized as follows:

Contamination of the beach: If measures are not taken, the present development proposed for Puerto Plata and Sosua will affect the following:

- San Marcos River and the beaches located to the west. A number of new settlements, industries, and additional free zones are projected along the river.
- Long Beach and Malecon (west) will receive waste water from residential-commercial projects proposed along Isabel de Torres River.
- In Sousa the following places will be affected: Boca de Sosua, Sosua beach, Libre beach, La Punta stream, and the coral reef in the Higuero.

Soil and beach erosion: The most critical soil erosion is expected to be a result of the erosion of the southern hills of Sosua, which will have an impact on the beaches. Many beaches are presently showing substantial levels of erosion; e.g., Cofresi beach.

Drainage of swamps and destruction of the ecosystem: There is a tendency to drain, modify, fill in, and urbanize the swamps of the costal areas during development. These actions can take place in small and isolated sites. However, at

other times, large modifications are made to locations with high ecological value, such as the changes made to the swamps at Cabarete, causing destruction of not only vegetation but animal life.

Destruction of the vegetation: Many tracts of large trees are at risk, such as in the back part of Sosua beach e.g., Cofresi bay, Long beach.

Destruction of the mangroves: On the developed beaches and in areas of future development, the destruction of mangroves is anticipated. With the destruction the mangroves, a large amount of vegetation and animal life will be eliminated due to modified environmental conditions; e.g., Luperon bay, Malmon bay, Reuter project, Boca de Yasica.

Destruction of the coral reef: The dramatic destruction of coral reefs is taking place in areas close to Punta Cafemba and Punta Guarapito. The destruction of the reef will dramatically increase the levels of water contamination in the area.

Concentration of garbage and sewage: On many beaches large amounts of floating garbage are noticeable, and beaches are contaminated by human waste that drains without treatment into the sea, e.g., Costambar, Puerto Chiquito.

Oil spills: The beaches of the Dominican Republic are at great risk from oil spills. During the last year, three oil spills occurred with severe damage to large portions of the beaches.

CONCLUSIONS

At present, the lack of housing in the Dominican Republic is a major concern. It is estimated that there is a deficit of 364,550 houses. Between 1985 and 1990, 51,000 new families were absorbed into the cities. This increase, plus the progressive deterioration of the housing inventory (currently 42.9 percent need improvement), suggests that the need for new shelters is beyond 500,000 units and that over 80,000 units must be built each year in order to eradicate the deficit by the year 2000.

The physical expansion that is presently taking place in Santo Domingo is primarily government-induced. President Balaguer believes that public housing is an important element of income distribution to poor families who otherwise cannot afford housing that meet acceptable standards; thus, he has placed construction as the core element of this political platform to provide economic growth.

As a result, large construction activity has occurred during his tenure in office. During the past four years of the Balaguer administration, 23,000 housing units have been built. By some estimates, public construction work expenditures have exceeded more than half the national annual budget.

Although the highest number of housing units ever constructed has been under Balaguer's ruling, opposition views have emerged expressing the disadvantages of this official urban program. Negative criticism holds that government construction

policies have not solved the problem of poverty, and on the contrary have exacerbated it by increasing the flows of rural-urban migration.

Opponents to his government also argue that the fast growth of money supply to finance public works, plus a maxievaluation of the peso starting in 1986, have caused high rates of inflation. Inflation (over 20 percent) in the prices of construction materials, land, and labor, has halted the participation of the private finance system in shelter provision. At present, the increases estimated for low-income housing are 875 percent and over 1,000 percent for houses of medium-income families.

Although the present government has provided a high number of housing units, when a different political party is in power, government participation in shelter provisions declines tremendously. Thus, it is fair to say that the Dominican Republic lacks a coherent national housing policy, that such policies when executed are heavily centralized, dominated by the chief executive, and dependent on the individual views of the administration in power. This makes urban development very fragile with limited continuity.

Although tourism and free zones are two of the most important economic sectors in the Dominican Republic and their impacts have been anticipated, there have been no studies that compare both of these economic sectors with urban development.

Tourism is considered an important leading sector for economic development in the Dominican Republic. It has been estimated that in 1988 its contribution to the economy was 2,681.5 million pesos, or 10 percent of the GNP. Tourism was only surpassed by the industrial sector, which showed a contribution of 15 percent; the commerce sector with a contribution of 17 percent; and the agriculture sector with a contribution of 12 percent. On the other hand, the livestock, mining, and construction sectors contributed lesser amounts to the national economy.

The Colonial Zone is the most important tourist resource in Santo Domingo. From 1968 through 1979, large renovation and rehabilitation programs took place during times when the present administration was in office. Activity then declined between 1979-1986 when another political party was in office. Activity restarted in 1986 when another political party was in office. Activity restarted in 1986, mostly related to the Fifth Century Anniversary. In spite of the resources channelled in the past to the old city and its historical importance, the Colonial Zone has not attracted the number of tourists that could be expected.

In Puerto Plata, problems are anticipated due to the lack of housing for a growing population attracted to jobs in tourism and the free zones. Also, there is a rapidly rising need for strong environmental regulations to eliminate the degradation of natural resources during this trend of economic development. The lack of basic service provision is another important constraint to be overcome. Hotels solve the problem of water scarcity by building private wells or buying water from trucks, and for electricity they use emergency power plants that have to operate up to seven hours a day.

The tourism industry itself seems to have had a certain negative effect on the economic and social activity of the city. In spite of the boom of tourism, large numbers of the local population are only employed in menial jobs; support goods and services are not purchased from the town; tourists are hampered from visiting the town and buying goods; and the profits that are realized from the hotels return to investors in other parts of the country. The situation appears to hinder the capacity of tourism as an economic model to provide solutions to the problems of underdevelopment, city primacy, resource allocation, and income distribution beyond the purchase of cheap labor from the local inhabitants.

During the last 10 years, free zones have expanded throughout the Dominican Republic. Eighteen free-trade zones have been developed and become profitable in recent years. The Dominican Republic is perceived as a suitable location for the volume production of items aimed at the middle- and lower-price scales of the market. Nevertheless, a major constraint that has been identified for future growth of free zones is the continuing deterioration of public services, particularly electricity and transportation, and a potential increase of wages as a result of the present rates of inflation and prices of basic goods.

Free zones are expanding in terms of the number of businesses, workers, and geographical distribution. This suggests that future population transfers and increased densities may occur in the Dominican Republic, influencing the present demand for shelter and infrastructure at these locations.

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