

**POPULATION CHALLENGES:**  
**CUBA AND THE DOMINICAN REPUBLIC**

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**ABSTRACT**

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**POPULATION CHALLENGES:**

## Cuba and the Dominican Republic

An examination of Cuba and the Dominican Republic (D.R.) between 1960 and 2002, and then extrapolates what may happen in the first and second quarters of the 21st century.

The D.R. is smaller in population size than Cuba, but it is closing the gap, and will be ahead before 2050. Cuba mortality will increase ahead of the D.R. The D.R. fertility will fall towards that of Cuba. Emigration potential is high.

Santo Domingo has passed Havana and will continue to distance itself in population size.

Demographic variables should be considered in sustainable development and an improved quality of life.

**KEY WORDS:** Cuba, Dominican Republic, population size, fertility, mortality, urbanization.

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### **1.1 Introduction**

In this paper, the current demographic situation in Cuba and the Dominican Republic will be highlighted. The goal is to see how they have arrived at the present situation. As they enter the twenty first century the focus is on where they are heading. The demographic situation is considered with respect to the sustainable development and how policies have brought them where they are and where they are likely heading.

The World Population Conferences, starting with Bucharest 1974, Mexico City 1984 and Cairo 1994 have focussed on how important it is for government policies and programmes to give consideration to the demographic forces which are likely to negate socio-economic plans if they are ignored. In all three conferences the emphasis has been there. The latest manifestation of this from the International Conference on Population and Development (ICPD, 1994) in Cairo states:

"3.6 Governments, international agencies, non-governmental organizations and other concerned parties should undertake timely and periodic reviews of their developmental strategies, with the aim of assessing progress towards integrating population into development and environmental programmes that take into account patterns of production and consumption and seek to bring about population trends consistent with the achievement of sustainable development and the improvement of the quality of life." (UN, 1995)

"Social Equity and Changing Production Patterns: An Integrated Approach", 1992, by The Economic Commission for Latin America and the Caribbean (ECLAC), is a plan adopted by the countries of Latin America and the Caribbean to move forward in the nineties and into the twenty first century. The 1980s were the "lost decade" for the region. Only Chile made economic progress at the macro level starting in 1983. But poverty increased in Chile between 1983 and 1991. The ECLAC headquarters is in Santiago, Chile. The plan for Latin America and the Caribbean is to follow

the lead of Chile but with social equity. Changing production patterns but maintaining social equity is a road to sustainable development and a good quality of life. An integrated approach will be one with social and economic approach taking into consideration population forces but at all times protecting the physical environment and making it possible for a sustainable development. Cuba and the Dominican Republic voted for this plan of action. They were in Cairo in 1994, and voted for the Programme of Action, 1994.

These commitments by the governments of Cuba and the Dominican Republic (D.R.), if they are instituted by 2005 and bear results early in the 21st century, will have important implications for the societies. They will lead to economic progress in a global economy, improved quality of life and sustainable development.

Cuba, a socialist republic since 1961, has achieved some of these recommendations but even so, because of the implications of globalization, poverty has increased. The Dominican Republic (D.R.) has not advanced in the demographic transition, comparable to Cuba, programmes have worked less and poverty is still a major aspect. There is therefore concern for the size of the population, its rate of growth especially in the D.R. and urbanization for both societies.

As we progress into the twenty first century, the Dominican Republic (D.R.) is behind Cuba in a demographic transition sense. Fertility and the rate of growth are higher in D.R. than in Cuba. In mortality, they are almost the same. The rate of urbanization is higher in the D.R. but Cuba has a higher proportion of its population living in urban centres. Santo Domingo is larger than Havana. Both countries have potential for emigration abroad. Internal migration is higher in the D.R. than in Cuba. The economies are similarly based, and in poor shape. There are environmental problems of many kinds, which threaten the physical landscape.

## **2.1 The Demographic Situation**

Cuba and the Dominican Republic (D.R.) in area, are the two largest countries (42,402 and 18,680 sq. miles respectively) in the Caribbean. The population of Cuba in 2003 was just over 11.3

million and the D.R. was over 8.7 million (Table 1). These two countries account for 53 percent of the population of the Caribbean. The density of population is 264 per square mile for Cuba and 463 for the D.R. (Population Reference Bureau, 2003). Cuba is below the density for the Caribbean (417) and the D.R. density is higher. These are high density for agricultural based economies.

The crude birth rate in Cuba is 12 and in the D.R. it is 25 in 2003 (Table 3). The total fertility rate in Cuba in 2002 is 1.6 and in the D.R. is 3.0. Cuba's birth rate is reported by the Population Reference Bureau (PRB) in 2003 as satisfactory to the government and the D.R. rate is considered to be too high. Cuba's fertility is low within the Caribbean context. Contraception is a major factor in accounting for the fertility levels but education is an indirect factor as well. Contraceptive use is higher in Cuba than in the D.R. but the rate in the D.R. is improving and currently 72 percent of eligible Cubans use a modern contraceptive compared to 66 percent Dominican.

The crude death rate in the D.R. is about 6 and the rate in Cuba is 7 in 2002. The age distribution in Cuba reflects an ageing population due in part to low fertility. The infant mortality rate of Cuba is around 6 and that of the D.R. is about 31 in 2002 (Table 4). One would suspect that infant mortality is going up in Cuba during the severe economic crisis of the 1990s and up to the present (2003) when food is very scarce and prescribed medicine is in short supply. Under the severe economic problems of Cuba, life expectancy may fall. Cuba's life expectancy is currently 76 and in the D.R. is 69 (Population Reference Bureau, 2003). Cuba's demographic transition is ahead of its Caribbean neighbours but Puerto Rico and Barbados are not far behind. Cuba's demographic transition is similar to Canada and the D.R. is like Panama, Colombia and Venezuela.

The natural increase of the population for Cuba is 0.5 and that for the D.R. is 1.9. Cuba is well ahead of the D.R. in demographic transition. Both countries have minimal emigration and the net loss for the D.R. is greater than Cuba. However, the rate of natural increase is very close to the rate of growth of the population in both countries, since international migration is small. The potential for emigration is tremendous but the destinations are very scarce. Canada and the United States are

prime destinations but both have restrictive migration policies. Cuba also discourages emigration.

Table 1: Population of Cuba and the Dominican Republic (D.R.) in Millions

Year	Cuba	Dominican Republic
1960	7.0	3.2
1970	8.5	4.4
1980	9.7	5.7
1990	10.6	7.1
2000	11.2	8.5
2003	11.3	8.7
2005	11.37	9.12
2010	11.52	9.71
2020	11.74	10.74
2030	11.79	11.52
2040	11.59	12.04
2050	11.09	12.26

Source: United Nations (UN) World Population Prospects. The 1998 Revision Volume 11: Sex and Age (Median Projections for 2005-2080). United Nations, New York 1999.

Internal migration is greater in the D.R. than in Cuba. The government of Cuba instituted plans which impedes the free flow of migrants. Whereas in the Dominican Republic migration of rural to urban and urban to urban are well manifested and unrestricted by government policies. In the D.R., governmental plans in locating

industrial zones and tourist development, have contributed to internal migration. Tourist development in Cuba has played the same role. Most of the growth centres in Cuba are tourism dominated at present.

Urbanization in the D.R. is much more rapid than in Cuba. Current growth of the urban population in the D.R. is around 3.5 percent and in Cuba it is about 1.5 percent (Lattes, 1995). The urban population in Cuba is around 75 percent and it is 61 percent of the total population in the D.R. (Population Reference Bureau, 2003). Santo Domingo, the capital of the Dominican Republic, is a rapidly expanding city with a population of 2.629 million in 2001.

Havana, the capital of Cuba, has a population of 2.268 million and is growing very slowly (UN 2002). Cuban government plans have retarded the growth of Havana, mainly through discouraging internal migration. Both capital cities are primate cities in that they have a large proportion of the urban population and are much larger than the second city in each country. Havana's population is about five times that of Santiago de Cuba, the second largest city, whose population is around 0.44 million in 1998 (UN 2000). Santo Domingo has a population of around 2.667 million in 2001 and the second largest city in the Dominican Republic, Santiago de los Caballeros, has a population of 0.836 million (UN 2002). Cuba's Santiago is growing much less than the Dominican Republic's Santiago. Havana in 1996 had 20.3 percent of the total Cuban population, and 26.7 percent of the total urban population. These figures have changed only slightly in the past ten years. Santo Domingo, in 1996, had 41.2 percent of the total population and 65.8 percent of the urban population. Santo Domingo and Santiago de los Caballeros are increasing their population relative to the country and the urban population.

The rate of growth of the urban population and the size of the cities have a tremendous effect on poverty, quality of life and the possibility of a sustainable development. Both countries are especially concerned about the distribution of the population including the urban population. Urbanization requires massive government expenditures for infrastructures and employment.

Cuba has an ageing population while the Dominican Republic has a young population. The ageing of the population in Cuba, is in part, why the mortality level is a little above the D.R. The D.R.'s younger population is a result of its relatively high fertility, now as well as in the recent past. Twenty one percent of the Cuban

population is less than 15; and in the D.R. it is 35 percent. The population 65 years and over in Cuba is 10 percent of the population and in the D.R. it is only 5 percent. Cuba has a lower fertility level and before the economic crisis of the 1990s to the present, better delivery of health care services than in the D.R.

In summary, Cuba is very much like Puerto Rico, Barbados, Chile, Argentina and Uruguay. In Latin America and the Caribbean they are the leaders in demographic transition. These countries have low fertility, increasing mortality because of an ageing population, low infant mortality, low rate of growth, high levels of urbanization, urban to urban migration, and declining rural population. The Dominican Republic falls into a group with Jamaica, Colombia, Ecuador, Venezuela, Mexico and Costa Rica. They are behind Cuba in the demographic transition and have demographic variables that are different from the ones named above. They are: fertility is higher, low mortality level, a young population, higher infant mortality level, rates of growth close to two percent, lower level of urbanization, rural to urban immigration and low growth in rural population.

Some of these factors will be further elaborated on, with more detail and discussion in the following sections.

### **3.1 Population Since 1960**

In 1961, Cuba was established as a socialist state. The Dominican Republic (D.R.) was a capitalist state without a revolution. Cuba was into the third stage of the demographic transition and the Dominican Republic was in the second stage. The rate of growth of the Cuban population was low, since fertility was low and so was mortality. In the D.R., fertility was very high and mortality was high and declining and the population was expanding.

The population of Cuba in 1960 was nearly 7 million, and it has increased relatively slowly, in comparison to Latin America and the Caribbean, up to 11.2 million in 2000 (see Table 1). The Population Reference Bureau (PRB, 2003) gave a mid-2003 figure of 11.3 million. The Cuban government since the Revolution of 1959 has not had a plan to reduce the rate of growth or keep down the population size. However, Cuba is being transformed into a modern society. Before 1993, the Cuban society had experienced much progress in the areas of health, social welfare, education and

progress in the quality of life. Contraception and abortion are available. Cuban government policies are not directed towards the demographic forces but they impacted on them. Under the socialist government fertility has continued its decline, mortality is low and the rate of population growth has been held low. International migration has been sporadic and depends on the United States policies and on the discouragement of the Cuban government.

In 1960 the population size of the Dominican Republic (D.R.) was 3.2 million. It grew rapidly, and by 2000 it was 8.5 million (Table 1). In mid-2003 it was 8.7 million. The population size of the D.R. is closing the gap between it and the population of Cuba.

This is due to fertility, which is higher in the D.R. than Cuba; and mortality, which is higher in the D.R. than Cuba and it is now the reverse. Both countries have had loss due to international migration, which is greater for the D.R. than Cuba.

The United Nations medium projections show that by 2030 the population size of Cuba and the D.R. will be equal at just above 11 million. From that point Cuba's population is declining while that of the D.R. continues to increase but slowly. Fertility is lower in Cuba and mortality is higher because of an ageing population. The D.R. will go in the same direction but time delayed because it is later in the demographic transition.

Beginning in 1950, the population annual rate of growth is higher in the D.R. than it is in Cuba (Table 2). This has continued up to the present time. The Cuban population is growing slowly and that of the D.R. is still growing at a very significant rate. The fifty-five year period in Table 2 shows that the rate of growth in the D.R. is always one to two percent above that of the Cuban rate of growth for each five year period. As mentioned above, this is due mainly to their differences in mortality, fertility and emigration. The government of the D.R. regards the rate of growth and fertility as too high in terms of their economic development and improvement to the quality of life. The D.R. government has supported family planning. Contraception is available to all who would seek it. The government of the D.R. was one of the first to seek outside support for providing family planning. The growth rate of the population has declined but it is still considered as too high. The crude birth rate is being influenced by the increasing larger cohort entering the childbearing ages. The total fertility rate is more in line with the perspective fertility of the women.

Cuba is ahead of the D.R. in terms of slowing down the growth of the total population. The difference between them is quite marked. Cuba's population of 1960 has not been doubled up to 1998; it is just about 1.6 times. However, the D.R. population between 1960 and 1998 is 2.6 times greater in 1998 than it was in 1960. Cuba in 1960, in the first year of the revolution, was well placed as its demographic variables responded to modernizing forces within the society. The socialist revolution and its government in tackling socio-economic planning, brought in plans that would have impacted on demographic concerns. The demographic transition has continued up to the present period. The Dominican Republic in 1960 was under severe demographic pressure. They adopted family planning, which will eventually reduce fertility. The modernizing process is at work in the D.R. However, economic and social plans are not as effective as they are under the socialist government in Cuba.

Table 2: Average Annual Rate of Change of the total Population (in %)

Period	Cuba	Dominican Republic
1950-1955	1.85	3.02
1955-1960	1.70	3.32
1960-1965	2.09	3.27
1965-1970	1.89	3.00
1970-1975	1.77	2.65
1975-1980	0.85	2.42
1980-1985	0.82	2.46
1985-1990	0.99	1.84
1990-1995	0.62	1.72

1995-2000	0.42	1.68
2000-2005	0.30	1.50

Source: United Nations: World Urban Prospects: The 2001 Revision, New York 2002.

### 3.2 Fertility Since 1960

In 1960 fertility in Cuba, as measured by the crude birth rate (CBR), was relatively low compared to the Dominican Republic (30 vs. 50) (Table 3). This magnitude of difference is still there in 2000-2005. The difference between the crude birth rate (CBR) is very marked and CBR for D.R. is from 10-20 above Cuba over the period 1960-2005. Cuba was already, by 1960, approaching the third demographic transition stage and the Dominican Republic was in the rapid population growth in the second stage. The D.R. experienced rapid fertility decline over this period. Changes in social and economic conditions and establishment of family planning clinics were instrumental. Cuba continued its decline in this period through significant changes in the status of women, availability of contraception and social security for all.

Table 3: Crude Birth Rate (CBR) and Total Fertility Rate (TFR) of Cuba and the Dominican Republic (D.R.) 1960-2005

Year	Cuba		Dominican Republic	
	CBR	TFR	CBR	TFR
1960	30	3.5	50	7.5
1970	28	3.7	41	6.2
1980	14	2.0	26	4.2
1990	17	1.5	27	3.1
1997	14	1.4	27	3.2
2002a	12	1.6	25	3.0

2000- 2005b	12	1.6	23	2.7
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Source: United Nations, 1994; World Bank, 1993:a; PRB 2003:b; United Nations, 2002.

In 1960 the total fertility rate (TFR) for Cuba was 3.5 and for the D.R. was 7.5 (Table 3). The Cuban TFR went up slightly for 1970 and then continued its decline up to the estimation for 2000-2005. By 1980 it was less than replacement at 2.1 and currently it is at 1.6. The TFR of the D.R. has fallen rapidly from the high level of 7.5 down to its current level of 3.0.

Fertility is very low in Cuba and high in the D.R. The Cuban fertility is comparable to the developed societies as well as Barbados and Martinique. The D.R. fertility is in line with a number of countries in Latin America and the Caribbean, such as Jamaica, Mexico, Costa Rica, Colombia and Venezuela. Both measures of fertility (CBR, TFR) depict Cuba as in the fourth stage of the demographic transition along with the developed societies and some countries of Latin America and the Caribbean (LAC). D.R. is typical of many developing countries in its fertility levels and is in the beginning of the demographic transition third phase.

### 3.3 Mortality Since 1960

The mortality levels were declining in 1960 in both Cuba and the Dominican Republic. The crude death rate (CDR) in Cuba was around 10 and in the D.R. it was about 17. It declined in Cuba until 1980 and it is moving up again because of the ageing population in Cuba. In the D.R. it went down to 5 and it is moving up slightly to around 6. Since the Cuban population is ageing, poverty is on the increase, medicine is very scarce and food is in short supply, we can expect a gradual increase in mortality. The Dominican Republic population is young relative to Cuba and we can expect it will remain about 6 to 7 for sometime.

The infant mortality level is a factor in these figures. As infant mortality reaches a low level there will be a counteracting effect as the average age of this population is increasing. Infant mortality levels were relatively high in Cuba in 1960 (70) and very high in the Dominican Republic (132) (Table 4). By 1970 they had

fallen to 50 for Cuba and 105 for the D.R. By the year 2000, Cuba's infant mortality of 6 is very low. These low infant mortality rates show the progress of health, child care and reduction in malnutrition. However, the economic crisis in Cuba, if it persists will affect upward the infant mortality rate but so far it has not been reported. In the Dominican Republic (D.R.) it fell to 74 in 1980, 59 in 1990 and 31 in 2000, and in 2002 it remains the same. There is still much room for progress in the D.R. This will require better child care, better maternal care, less poverty, better nutrition, more births delivered in hospital and purer water supplies. (United Nations, 1994; Population Reference Bureau, 1998; World Bank, 1998; United Nations, 1996; Thomas, 1994).

Life expectancy at birth ( $e^{\circ}$ ) has been relatively high in Cuba since 1960, but it was low in the Dominican Republic and has been increasing since then (Table 4). It has gone from 62 in 1960, up to 76 in 1990 and remains about the same in 2000 as well as 2002 for Cuba. These levels of life expectancy are typical of the developed countries of Europe and most of the Caribbean region, Costa Rica, Panama, Chile and Uruguay. The D.R. life expectancy at birth in 1960 was 50 years, and it has improved up to 67 in 1990, and by 2000 it was 69 and remains the same for 2002 (Table 4).

The Dominican Republic (D.R.) has made gains in life expectancy as infant mortality declined. Conditions of life are having an impact on the life expectancy at birth. Except for Haiti, the D.R. life expectancy is currently slightly behind those of the other countries in the Caribbean. The Cuban life expectancy will remain stable or increase as the effects of the economic crises impinges on the society, but nothing has been reported on any increase.

Table 4: The Crude Death Rate (CDR), Infant mortality Rate (IMR) and Life Expectancy at Birth ( $e^{\circ}$ ) for Cuba and the Dominican Republic (D.R.) 1960-2000-2005.

Year	Cuba			Dominican Republic		
	CDR	IMR	$e^{\circ}$	CDR	IMR	$e^{\circ}$
1960	10	70	62	17	132	50
1970	8	59	68	12	105	57

1980	6	20	74	7	74	64
1990	7	6 <sup>b</sup>	76	5	59	67
2000	7 <sup>a</sup>	6 <sup>a</sup>	76 <sup>a</sup>	6 <sup>a</sup>	31 <sup>a</sup>	69 <sup>a</sup>
2002	7 <sup>a</sup>	6 <sup>a</sup>	76 <sup>a</sup>	6 <sup>a</sup>	31 <sup>a</sup>	69 <sup>a</sup>
2002-2005	7 <sup>b</sup>	10 <sup>c</sup>	77 <sup>b</sup>	7 <sup>b</sup>	30 <sup>c</sup>	67 <sup>b</sup>

Source: United Nations, 1994; (a) Population Reference Bureau (PRB) 2002, 2003; (c) Celade, 1996; (b) United Nations, 2002.

### 3.4 International Migration: 1960-2000

International migration from Cuba and the Dominican Republic since 1960 has been mainly emigration. This period saw rapid population increase in the Dominican Republic and much less in Cuba. Emigration for nationals from these two countries is very limited. There is very little immigration to Cuba; but there are some Haitians in the Dominican Republic. However, both countries have had net migration loss since 1960.

The 1970 Census had over 130,000 migrants in Cuba from Latin American and the Caribbean and other countries. Over 25,000 of these were from Latin America and the Caribbean. Most of these were from Haiti and Jamaica, who had migrated before 1960. Spanish born is perhaps the largest group within the overall total (Pellegrino, 1995).

The 1971 Census of the Dominican Republic found over 32,000 immigrants. Over 21,000 of these are from Latin America and the Caribbean. Most of these are from the neighbouring country of Haiti. There is a significant number of Spanish born (Pellegrino, 1995).

Most of the emigrants from these two countries are in the United States. The 1970, 1980 and 1990 censuses showed that for Cuba there were over 439,000, 608,000, and 737,000 respectively. Most of these are in Florida, New Jersey and Puerto Rico. From the Dominican Republic, in the same 3 censuses, there were over 61,000, 169,000, and 348,000 respectively. New York, Florida and Puerto Rico are the major concentrations of these (Pellegrino, 1995).

The Cuban born in the United States have been before 1960 as well as since the Cuban Revolution. By far, the majority of these left after the 1959 Revolution. There were also the Mariel boat lift and more recently, barge and boat flights from Cuba to Florida. The emigrants from the Dominican Republic have been more consistent over time. Some of these have been undocumented. There is a large Dominican group in Puerto Rico.

Centro Latinoamerica de Demografía (CELADE) 1980-2025, gave net migration loss from Cuba and the D.R. Up to 1970 Cuba had net migration loss above the D.R. and since then the D.R. had more migration loss than Cuba. The D.R. has about 2.4 percent loss and Cuba has about 1.6 percent loss up to 2000.

The potential for emigration from Cuba and the Dominican Republic, as it is for all Caribbean and Latin American countries, is tremendous. Economic conditions in Cuba and the D.R. are in crisis situations. They are close to the United States and Canada and are aware of conditions in these countries, and many would-be migrants have relatives and friends in both countries, but much more so in the United States.

### **3.5 Spatial Distribution of the Population: 1960-2003**

The density of population in Cuba is 264 persons per square mile and in the Dominican Republic it is 463 in 2003 (Population Reference Bureau, 2003). In the same period, mid 2003, the United Nations (2003) gave, in square kilometres, Cuba's density as 102 and D.R. as 179. In the Caribbean region, these are relatively low in comparison with Barbados (629), Haiti (241), Jamaica (241), and Puerto Rico (436) in square kilometres (UN, 2003).

The population of Cuba is well distributed across the land area and so it is for the Dominican Republic. The major concentration of population for Cuba is Havana and the provinces of Havana and Santiago. In the case of the D.R. the major concentrations are around Santo Domingo and Santiago.

These two countries have their major industries in agriculture, tourism, light industry, and mining. Cuba's main exports are sugar, rum and cigars and also nickel, cobalt and oil for refining in Canada. The Dominican Republic's major industries

are sugar, coffee, manufactured products, gold and silver. In spite of the primary nature of their industry, the rural population is declining and the urban population is growing. Cuba's rural population is declining by 1.2 percent and the rural population of the D.R. has recently started its decline (Table 5). The urban population of Cuba is growing at 1.3 percent and that of the D.R. by 3.1 percent (United Nations, 1996). The rural population is declining by rural to urban migration. This is much less in volume in Cuba than in the D.R.

Rural to urban and urban to urban migration are special features of the spatial distribution of the population in Cuba. Urban to urban migration is more dominant. However, internal migration has been restrained by government plans in Cuba. Government plans and policies have restricted the growth of Havana and Santiago de Cuba and have facilitated the growth of intermediate cities and some new growth areas with specialized industry such as mining and tourism. Equalizing wages between urban and rural areas have reduced rural to urban migration. The rationing of food is another way of ensuring stability of residence as well as the control on housing.

Table 5: Rate of Growth of the Rural and Urban Population of Cuba and the Dominican Republic (D.R.) 1960-2005

Year	Cuba		Dominican Republic	
	Rural	Urban	Rural	Urban
1960-65	0.86	3.05	1.83	6.25
1970-75	-0.37	3.06	0.87	5.02
1980-85	-1.08	1.65	0.50	3.83
1990-95	-1.23	1.25	0.11	3.10
2000-2005	-1.42	0.77	-0.32	2.30

Source: United Nations, World Urbanization Prospects: The 1996 Revision, New York, 1988.

Internal migration in the Dominican Republic is much more

dynamic. Santo Domingo and Santiago de los Caballeros are growing very rapidly. They were well behind Havana and Santiago de Cuba in 1960 and by 1980 they had surpassed them and Santo Domingo will continue to gain in size relative to Havana in the next few years, and Santiago de los Caballeros has already done so to Santiago de Cuba. Cuba's free trade zone for industry is relatively new and it does not attract American industry since the United States embargo is still there. However, the free trade zone areas of the Dominican Republic have been quite successful. They have led to redistribution of internal migration as both rural and urban residents move into these zones to obtain employment. The areas between Santo Domingo and Santiago where most of these industries are located are growing urban zones.

The spatial distributions of the population of Cuba and the Dominican Republic have important consequences for the protection of the environment and a sustainable development. The growing urban areas along the sea coasts cast delicate environments in jeopardy.

#### **4.1 Urbanization in Cuba and the Dominican Republic**

An examination of the urban process in Cuba and the Dominican Republic (D.R.) since 1960 yields some interesting aspects. The rural population of Cuba was still growing between 1960 and 1965. In 1970-75 the rural population began to decline in numbers. The Dominican Republic had a growing rural population up to 1990-95. In the D.R. the rural population declined in numbers in the period 2000-2005 (see Table 5). The decline in the rural population for Cuba and the D.R. has continued up to the present and it will continue to decline up to 2025. The decline of the rural population is due mainly to internal migration. This internal migration was one of the determinants of the rapidly growing urban population (United Nations, 1992). The total population in both countries is increasing and urbanization is growing, even though fertility is lower in urban areas than in rural areas. Mortality levels between urban and rural areas are not very significantly different.

The rate of change of the urban population in Dominican Republic and Cuba since 1960 has been tremendous in the D.R. and much lower in Cuba (Table 5). Cuba's rate of change of the urban population was at 3 percent in 1960-65, and remains the same in 1970-75, and by 2000-2005 it is less than 1.0 percent. The D.R.

rate of growth of the urban population was over 6 percent in 1960 to 1965 and up to 2000-2005 it is still projected to be over 2 percent. The D.R. rate of urbanization compared to Cuba is between 1.5 percent and up to 3 percent higher. The D.R. urban population has been expanding very rapidly.

The period beginning with 1950 and extending into the 21st century saw the level of urbanization to be higher in Cuba than in the Dominican Republic. In 1950 Cuba was close to 50 percent and the D.R. was close to 25 percent (Table 6). By 1960, Cuba was 55 percent and the D.R. was 30 percent. In 1970 the figures were 60 percent for Cuba and 40 percent for the Dominican Republic. In 1980, Cuba was 68 percent and the D.R. had just crossed the 50 percent of its population living in urban areas. By 1990 Cuba was above 73 percent and the D.R. was under 60 percent. In 2000 Cuba is at 75 percent and the D.R. is 65 percent. Cuba will continue to be ahead of the D.R. up to 2025 when Cuba could be 86 percent and the D.R. at 80 percent (Population Reference Bureau, 1998; United Nations, 1992).

Table 6: Level of Urbanization for Cuba and the Dominican Republic, 1950-2005 (% of the Total Population living in urban areas).

Year	Cuba	Dominican Republic
1950	49.4	23.7
1960	54.9	30.2
1970	60.2	40.3
1980	68.1	50.5
1990	73.5	58.3
2000	75.0	65.0
2003	76.0	67.0

Source: United Nations a) World Urbanization Prospects: The 1996 Revision (b); World Population 2002. United Nations a) 1998, b) 2002.

Cuba was close to fifty percent urban by 1950 and it took the Dominican Republic until 1980 to be 50 percent urban. Cuba was always ahead of the D.R. in the demographic transition and it is reflected in their spatial distribution. As these populations in the urban areas get to above 70 percent, the rural to urban migration will play less of a role in the urbanization process. The rate by which the urban population grows will be reduced as the percent urban increases above 70 percent.

Governmental plans in both countries have shown concern over the rate by which the percentage living in urban areas is increasing. Cuban policies and plans have succeeded in delimiting the rate of urbanization. These plans give wages that are about the same in rural and urban areas. Central planning allows this since wages are paid by the government and are not influenced by supply and demand (Aldana-Martinez, 1978; Baroni-Bassoni, 1988; Cabrera Trimiño, 1993; Hernandez-Castellon, 1988; Landstreet, 1975, 1977; Landstreet and Mundigo, 1983). In addition, housing improved in the rural areas as well as education and health care. This is not true for the Dominican Republic where urbanization and internal migration have been less restricted even though the government is aware of the implications for a sustainable development. Some government policies have induced urbanization, such as the free trade zone and providing higher wages in urban areas, better education and health services in the cities and towns (Portes and Lungo, 1992; Ramirez, 1992, 1993; Lozano, 1993; García Tamayo and Rodríguez, 1992; Mesa-Lago, 1992).

Plans and policies to curtail urbanization in the D.R. have not worked. The demographic variables are not well integrated into social and economic policies and plans of the D.R. However, policies and plans are less effective in the D.R. than in Cuba. The Cuban government slowed down the rate of urbanization especially after the revolution of 1959. There has been urban growth but it has been quite manageable except for this current economic crisis beginning in 1992. The governments of the D.R. and Cuba are aware of the impending level of urbanization and its consequences for a sustainable development. As they approach the 21st century, the urbanization process is still viewed as having many implications, some good and most bad, for reaching a good quality of life. The rate of urbanization will continue to be about twice the rate of growth of the total population into the first quarter of the new century.

#### 4.2 Cities in Cuba and the Dominican Republic

An important part of the spatial distribution of the population in Latin America and the Caribbean is the growth of towns and cities. In these towns and cities the pressure of population has its greatest force on the social and economic aspects of the society. The cities bring to the forefront all the demographic forces in interaction with poverty, housing problems, sewage and garbage disposal, water, air pollution, social pathology, underemployment, unemployment, infrastructure of roads, urban transit, communications, education, health and cultural activities. Rural population is more easily ignored; the urban population living in large cities are much more difficult to neglect. In Latin America and the Caribbean, the capital cities, with few exceptions, are the major urban conglomeration. They are the epitome of a primate city and some of these have been classified as mega cities. Santo Domingo and Havana are the capitals of the Dominican Republic and Cuba; they are primate cities, and even though they are not classified as mega cities, they are indeed having the same impact on the society as Buenos Aires and Mexico City have on Argentina and Mexico.

Cuba has a larger population than the Dominican Republic. Its level of urbanization is higher than the D.R. In recent times Havana and Santiago de Cuba were larger in population than Santo Domingo and Santiago de los Caballeros. In 1996, the two major cities of the D.R. were ahead, in population sizes, of the two largest cities of Cuba. Santo Domingo, in 1995, had a population of 2.24 million and Havana 2.18 million. Santiago de los Caballeros had a population of 0.72 million and Santiago de Cuba about 0.43 million. By 2000 Havana had reached 2.26 million and Santo Domingo was 2.56 million (Table 7). Santiago de los Caballeros in 2000 was 0.80 million and Santiago de Cuba was 0.45 million (United Nations, 1996; 2000; 2002). The two Dominican cities are growing faster than the two in Cuba. Government policies and plans have held down the growth of Havana and Santiago de Cuba. These plans and policies have affected wages, housing, internal migration, established new growth centres and control of infrastructures within the cities. On the other hand, concern of the government in the Dominican Republic has not materialized into any effective way of slowing down the population growth in Santo Domingo and Santiago de los Caballeros. Indeed, the establishment of free trade zones in these two cities have promoted their further

expansion.

Table 7: Population of Havana and Santo Domingo

Year	Havana	Santo Domingo
1950	1,147,000	219,000
1960	1,416,000	446,000
1970	1,745,000	839,000
1980	1,909,000	1,427,000
1990	2,108,000	1,952,000
2000	2,256,000	2,563,000
2001	2,268,000	2,629,000
2005	2,306,000	2,889,000
2015	2,365,000	3,397,000

Source: United Nations, Demographic Yearbook, 2000, United Nations, World Urbanization Prospects: The 2001 Revision, 2002. United Nations, New York.

Havana and Santo Domingo in 1950, showed that Havana had close to one million population ahead of Santo Domingo (Table 7). Havana was about 1.15 million and Santo Domingo was about 219,000. By 1960 Havana was 1.416 million and Santo Domingo was 446,000. By 1970 Havana was 1.745 million and Santo Domingo was 838,000. The government of Cuba, after the 1959 revolution, is now having an effect on the growth of Havana. Santo Domingo is in a rapid growth period. The total population of D.R. is growing much faster than Cuba and this manifests itself in faster growth in the cities. The government of the Dominican Republic is trying to reduce fertility, but internal migration and urbanization are expanding (United Nations, 1992; 2000).

The 1980 population of Havana and Santo Domingo was 1.909 million and 1.427 million respectively. In 1990, Havana had a

population of 2.11 million and Santo Domingo had a population of 1.95 million. Santo Domingo surpassed Havana in 2000. It will continue to outpace Havana. By the year 2015, it is projected that Santo Domingo will be one million more population than Havana. However, in the 21st century, Havana may take on a new growth period, since there are more and more tendencies to relax government control of the economy under the new window on capitalism.

It is clear that the growth rate of Havana has been small relative to that of Santo Domingo. Between 1950 and 1970, Havana was growing at 2.10 percent per annum and Santo Domingo was growing at around 6.5 percent per year. Even before the central planning of the Cuban government was really felt, Havana was increasing at much less than Santo Domingo. This is related to their position in the demographic transition. Cuba is well ahead of the D.R. in demographic transition. Between 1970 and 1995, Havana was increasing its population by about 1.0 percent. Santo Domingo was growing between 1970 and 1985 by just over 5 percent; and between 1985 and 1995 it was growing by about 3.5 percent (United Nations, 1992; 2002). Santo Domingo since 1995 was still growing rapidly and Havana's rate of increase has been restricted by government policies and plans and by its place in the demographic transition.

In 1950, about 40 percent of the urban population lived in Havana and the same is true of Santo Domingo. By 1985, Santo Domingo had 50 percent of the urban population and Havana had 28 percent. In 1996 Havana had 27 percent and Santo Domingo had 66 percent of the urban population (United Nations, 1992; World Bank, 1998). Havana in 1996 had 21 percent of the total population and Santo Domingo had 58 percent. Santo Domingo has a higher primacy than Havana. It is even more a dynamic force within the Dominican Republic than Havana is in Cuba. Havana has gained slowly in its spatial area, but Santo Domingo has grown rapidly in the north, east and west of the old colonial city.

In addition to Havana and Santiago de Cuba, there are other sizeable cities in Cuba. The province of Havana has two cities of over 50,000 in population size. Camaquëy and Holquín are next in size after Santiago with populations of over 300,000 and 250,000 (UN 2002). Havana and the capital of the provinces plus Manzanillo account for about 3/4s of the urban population living in cities of sizes 20,000 and above. Some of these cities have been identified as growth centres and some of the new expanding cities are related

to mining, manufacturing and tourism.

The capitals of the provinces of the Dominican Republic, excluding Santo Domingo and Santiago, have been dominated by these two cities. Puerto Plata is holding its own since it is one of the main tourism centres. The cities are growing but to a lesser extent than Santo Domingo and Santiago. San Pedro de Macaris has a population of 267,000 in 2001 (United Nations, 2002) These two major urban areas are centres of commerce and industry. The internal migration is mainly directed to these two cities.

The Cuban government has been more successful at influencing migration and its destination, and in so doing, the rate of growth of urban places. The government of the Dominican Republic is also concerned but the political will and avenues to influence migration and urbanization are not there. Cuba has been able to integrate demographic, social and economic planning to achieve some goals of the society. The Dominican Republic has been less successful.

#### **4.1 Conclusions**

The comparison of population challenges in Cuba and the Dominican Republic (D.R.) in the 21<sup>st</sup> century is quite challenging. The horizon for most of us extends into the first quarter of the 21st century. Stretching it, it is possible to think of the first half of the 21st century. The two largest Spanish speaking countries of the Caribbean area accounted for 53 percent of the population of the region in 2003. They are not as densely settled as some of their neighbours (Haiti, Jamaica and Puerto Rico). Their agricultural potentials are impressive and it is a major contribution to the gross domestic product. They have some minerals but these are exported abroad for refining. There is great potential for tourism since the climate and the beaches are very conducive to tourists from North America and Europe. Their economies are in crisis because of globalization.. Poverty levels are increasing as they go through the economic crisis. Cuba has a history of introducing demographic concerns into its policies and plans. The Dominican Republic is conscious of the impact of demographic variables on its policies and plans. The government of Cuba has more power to institutionalize plans and policies. The D.R. government has helped to reduce fertility by establishing family planning clinics and improving education. Government policies and plans in the D.R. have influenced the spatial distribution of its population, by adopting zones of expansion in

industry and tourism and this has influenced rural to urban and urban to urban internal migration.

By the first quarter of the 21st century, the population size of the Dominican Republic will be equal to that of Cuba. Cuba is growing slowly and the D.R. more rapidly. By the end of the first 50 years of the 21<sup>st</sup> century, the population of the D.R. will exceed that of Cuba. Cuba's window on capitalism, which is similar to that of China, if it is maintained to the year 2050, will re-establish the quality of life at a significant level above the D.R. If Cuba abandons socialism and embarks upon the road being travelled by the D.R., Cuba will still have a higher quality of life than the D.R. Cuba has much pent up potential for moving the country forward. Lifting of the United States embargo will make life easier for the Cubans. These two countries have potential for economic growth which is necessary for them to escape the high levels of poverty and a growing population especially in the D.R. which is a confounding factor.

Fertility in Cuba will remain low in the first half of the 21<sup>st</sup> century, while that of the D.R. will approach that of Cuba. Both populations will age, but Cuba will have a higher percentage above age 65 than the D.R. Cuba's mortality will increase ahead of the D.R. since the population is ageing faster. Both countries are well into the third stage of the demographic transition and in fact Cuba is in the fourth phase. Policies and programmes have driven down fertility. Infant mortality has made a tremendous decline because of maternal and child care, better sanitation, better health and reduction of malnutrition.

Given the opportunity for migration to developed societies, both Cuba and the D.R. would have tremendous net migration losses. The opportunity for migrating to Canada and the U.S.A. has become quite restricted. The fall of the socialist government in Cuba will not see a large migration of Cubans returning home. Puerto Ricans, Jamaicans and Dominicans can return to their Caribbean countries as they wish, but they have not done so and this will be true of Cubans.

Internal migration is a major demographic force. It rearranges the spatial distribution of the population. It invariably leads to higher levels of urbanization. Cuba and D.R. are urbanized societies. The capital cities are primate cities. They both have two cities below the capitals that are a very

important part of the urban hierarchy. Provincial capital cities are becoming large urban areas. Some cities have become growth centres around some resources. The urbanization of these two republics and their large urban centres are major problems involving social pathology, economic problems and environmental problems. Urbanization has many adverse effects for a sustainable development. Poverty and a poor quality of life are major problems for these societies. These problems will be up front as they move into the 21<sup>st</sup> century.

Cuba and the Dominican Republic should pay special attention to the Programme of Action coming out of the International Conference on Population and Development, Cairo, 1994 (UN, 1995), and Social Equity and Changing Patterns: An Integrated Approach (ECLAC, 1992); since they have signed both documents. Following these recommendations, as they enter the 21<sup>st</sup> century, will lead to a sustainable development and an improved quality of life for the two societies.

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