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IS POPULATION GROWTH A DETERRENT
TO THE DEVELOPMENT OF
LATIN AMERICA?

By

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Latin America is currently experiencing the most rapid population growth rate of any continent in the World. This study discusses some of the causes of excessive population, as well as the economic aspects toward development, specifically Education, Agriculture, Urbanization and Public Health. Also discussed are the various programs and means of coping with the problem, as well as specific achievements.

The study, unlike the major portion of material examined, is optimistic that Latin America can solve its population problem. The increased awareness and concern expressed by government officials, church leaders, medical personnel, and other leaders of society provides sufficient evidence that not only have there been significant steps taken to cope with the problem, but that there is an increasing desire to bring the problem under control. Special attention has been given to the importance of the individual in improving his self-respect and dignity.

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CHAPTER I

INTRODUCTION

The population explosion is a problem that cannot be evaded. It is necessary not only to study it, but to work out solutions and face up to it with courage. This is a problem affecting not just each family and each country, but all humanity.

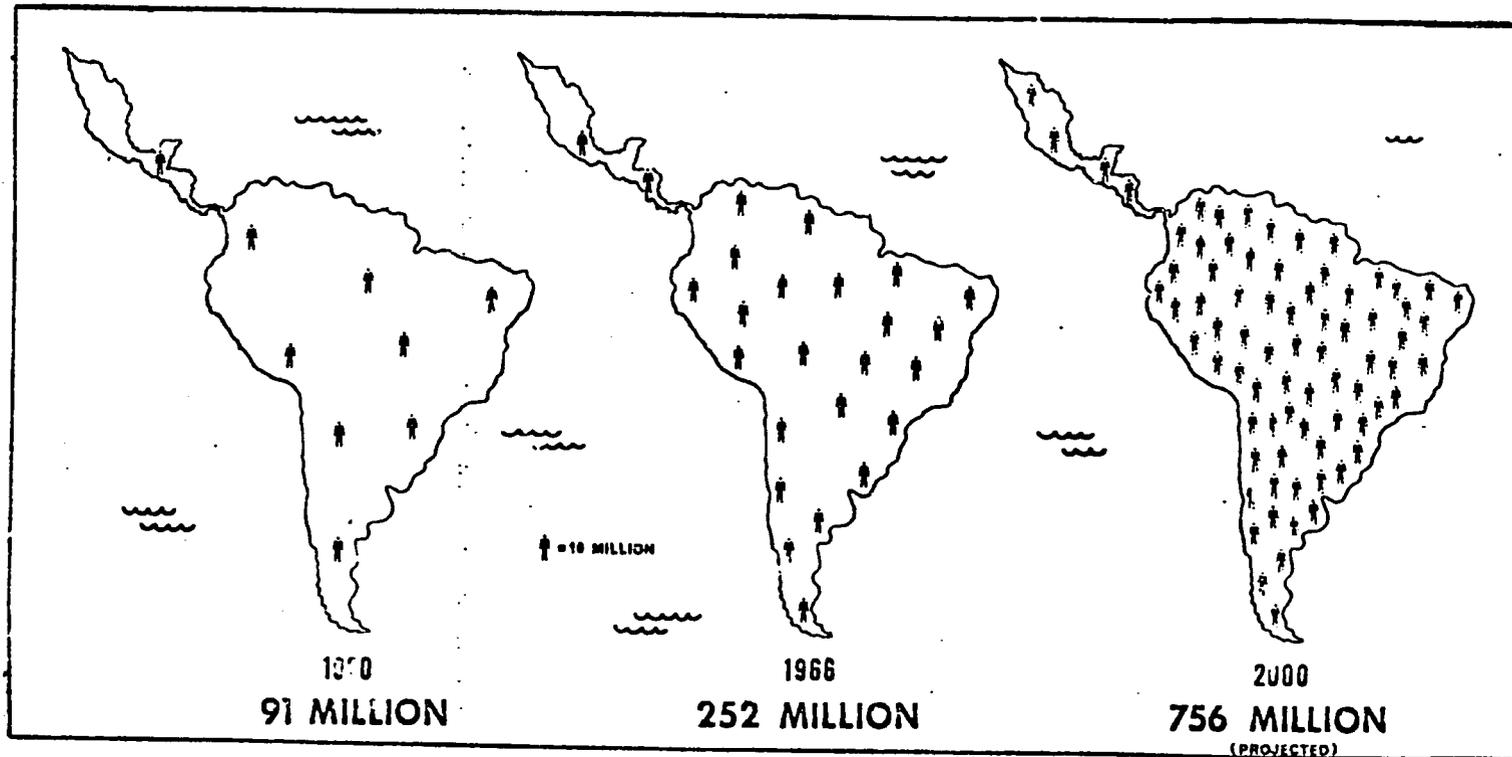
Eduardo Frei Montalva
President
The Republic of Chile.¹

President Freis' concern over the population increase in Latin America is shared around the world. At the present rates of increase, 2.5 to 3.5 percent, Latin America will triple the size of its 1960 population of 252 million by the turn of the century. This study focuses on the problem stated by President Frei. In addressing the problem, the author has: (1) analysed the present conditions and demographic data; (2) identified variables which have an impact; (3) identified what is being accomplished and (4) what the prospects are for the future.

Figure 1 graphically illustrates the increase in population which has occurred since 1920 with a projection through the year 2000.

¹Planned Parenthood in Latin America, Planned Parenthood Federation of America, Inc., New York, 1967. President Frei addressing the Eighth World Conference of International Planned Parenthood Federation (IPPF), April 1967.

FIGURE 1. A Seven-Fold Increase*



At present rates of increase, the population of Latin America will grow in 80 years from less than 100 million to over 750 million. No continental area in the world is now increasing at this rate.

*Population Bulletin, "Punta Del Este, 1961-1967 Early Dawn of a Demographic Awakening," Population Reference Bureau, Inc. (Washington, D.C., 1967), Vol. XXIII, No. 3., p. 54.

The Latin American population is characterized today by a high and progressively increasing growth rate which is threatening Economic Development; an age structure in which young people predominate; and heavy migration from rural to urban areas.

Table 1 is a tabulation of the growth trend in Latin America from 1900 with a projection for 1970 and 1980. It is clear from the table that not only is Latin America experiencing the most rapid increase in population of any continent in the world, but the projection for the next twelve years does not indicate any noticeable decrease. While the population of 1900 took 40 years to double, it is estimated that the population of 1950 will double in 25 years. Table 2 gives the percentages of population growth for the different periods considered in Table 1.

With the exception of three countries in the temperate area of southern South America -- Argentina, Uruguay and Chile -- birth rates in Latin America are among the highest in the world. Recent statistics and estimates consider the birth rates of all the other countries in this area at between 40 and 50 per 1000 of the population per year.¹

While birth rates are high, death rates began to decline during the 1920's. This has primarily been attributed to the spread of modern medicine, environmental sanitation, and the introduction of low cost DDT following World War II. In some of the countries;

¹Population Bulletin, "Punta Del Este, 1961-1967: Early Dawn of A Demographic Awakening," Vol. XXIII, No. 3, (Washington, D.C., Population Reference Bureau, Inc., June 1967), p. 55.

TABLE 1.*
Latin America.
Population 1900-1980
(in thousands)

	1900	1920	1930	1940	1950	1960	1965	1970	1980
All Latin America	—	86,907	104,451	126,325	158,125	207,379	238,310	274,170	364,398
Tropical South America	—	45,188	53,985	66,200	83,337	111,571	128,749	148,597	197,745
Brazil	17,318	27,554	33,718	41,525	52,328	70,459	81,450	93,902	123,716
Colombia	3,825	6,089	7,280	9,097	11,679	15,468	17,787	20,514	27,691
Peru	3,791	5,313	5,752	6,784	8,036	10,199	11,611	13,275	17,500
Venezuela	2,344	2,438	2,980	3,740	5,004	7,394	8,752	10,429	14,857
Ecuador	—	1,930	2,102	2,546	3,277	4,355	5,013	5,819	7,981
Bolivia	1,696	1,864	2,155	2,508	3,013	3,696	4,136	4,658	6,000
Continental Central America	—	19,369	22,380	26,776	34,585	46,686	53,183	65,408	92,933
Mexico	13,607	14,500	16,589	19,815	25,826	34,988	41,460	49,282	70,581
Guatemala	—	1,450	1,771	2,201	2,805	3,765	4,343	5,033	6,878
El Salvador	—	1,168	1,350	1,550	1,868	2,442	2,859	3,346	4,585
Honduras	443	783	948	1,146	1,428	1,838	2,182	2,592	3,656
Nicaragua	448	600	700	825	1,050	1,403	1,666	1,979	2,791
Costa Rica	285	421	499	619	801	1,171	1,424	1,718	2,419
Panama	323	447	523	620	797	1,079	1,249	1,458	2,023
Temperate South America	—	14,824	18,875	22,317	26,854	32,794	36,065	39,572	47,483
Argentina	4,743	8,861	11,896	14,169	17,189	20,956	22,841	24,784	28,998
Chile	2,904	3,785	4,365	5,063	6,073	7,627	8,625	9,753	12,378
Uruguay	809	1,479	1,734	1,974	2,195	2,491	2,647	2,802	3,126
Paraguay	—	699	880	1,111	1,397	1,720	1,952	2,233	2,981
Caribbean	—	7,526	9,211	11,032	13,349	16,328	18,313	20,593	28,237
Cuba	1,573*	2,950	3,837	4,566	5,508	6,797	7,523	8,307	10,034
Haiti	—	2,124	2,422	2,827	3,380	4,140	4,645	5,255	6,912
Dominican Republic	—	1,140	1,400	1,759	2,243	3,030	3,588	4,277	6,174
Puerto Rico	933*	1,312	1,552	1,880	2,218	2,561	2,557	2,754	3,117

* 1899 census.
Source: 1900: Brazil, Bolivia, Mexico, Cuba, and Puerto Rico, census data; other countries, estimates made by CELADE. 1920-1980: UN St/SOA/SER.R/7
Provisional Report on World Population Prospects, as revised in 1963.

*Carmen A. Miro, "The Population of Twentieth Century Latin America," Population Dilemma in Latin America, Edited by J. Mayone Stycos and Jorge Arias, (Washington, D. C.: Potomac Books, Inc., 1966), p. 2.

e.g. Costa Rica, Brazil and Venezuela, the death rates of 8.8, 10-13 and 8-12 (per 1000 population) respectively represent reductions of 50 to 70 percent from traditional mortality patterns.¹

TABLE 2.*
Latin America.
Per cent of population growth 1900-1980.

	1900- 20	1920- 30	1930- 40	1940- 50	1950- 60	1960- 65	1965- 70	1970- 80
All Latin America	—	20.4	20.9	25.2	31.1	14.9	15.0	32.9
Tropical South America	—	19.7	22.6	25.9	33.9	15.4	15.4	33.1
Brazil	59.1	22.4	23.2	26.0	34.6	15.6	15.3	31.8
Colombia	59.2	19.6	25.0	28.4	32.4	15.0	15.3	35.0
Peru	40.1	8.3	17.9	19.3	26.0	13.8	14.3	31.8
Venezuela	4.0	22.2	25.5	33.8	47.8	18.4	19.2	42.5
Ecuador	—	8.9	21.1	28.7	32.9	15.1	16.1	37.2
Bolivia	9.9	15.5	16.5	20.1	22.7	11.9	12.6	28.8
Continental Central America	—	15.5	19.6	29.2	35.0	18.2	18.5	42.1
Mexico	6.6	14.4	19.4	30.3	35.5	18.5	18.9	43.2
Guatemala	—	22.1	24.3	27.4	34.2	15.4	15.9	36.7
El Salvador	—	15.6	14.8	20.5	30.7	17.1	17.1	37.0
Honduras	76.7	21.1	20.9	24.6	28.7	18.8	18.8	41.0
Nicaragua	33.9	16.7	17.9	28.5	32.4	18.8	18.8	41.0
Costa Rica	47.7	18.5	24.0	29.4	46.2	21.6	20.6	40.8
Panama	38.4	17.0	18.5	28.5	35.4	15.8	16.7	38.8
Temperate South America	—	27.3	18.2	20.3	22.1	10.0	9.7	20.0
Argentina	86.8	34.3	19.1	21.3	21.9	9.0	8.5	17.0
Chile	30.3	15.3	16.0	19.9	25.6	13.1	13.1	26.9
Uruguay	82.8	17.2	13.8	11.2	13.5	6.3	5.9	11.6
Paraguay	—	25.9	26.2	25.7	23.1	13.5	14.4	33.5
Caribbean	—	22.4	19.8	21.0	22.3	12.2	12.5	27.4
Cuba	87.5	30.1	19.0	20.6	23.4	10.7	10.4	20.8
Haiti	—	14.0	16.7	19.6	22.5	12.2	13.1	31.5
Dominican Republic	—	22.8	25.6	27.5	35.1	18.4	19.2	44.1
Puerto Rico	37.7	18.3	21.1	18.0	6.4	8.3	7.7	13.2

* Based on the figures in Table 1.

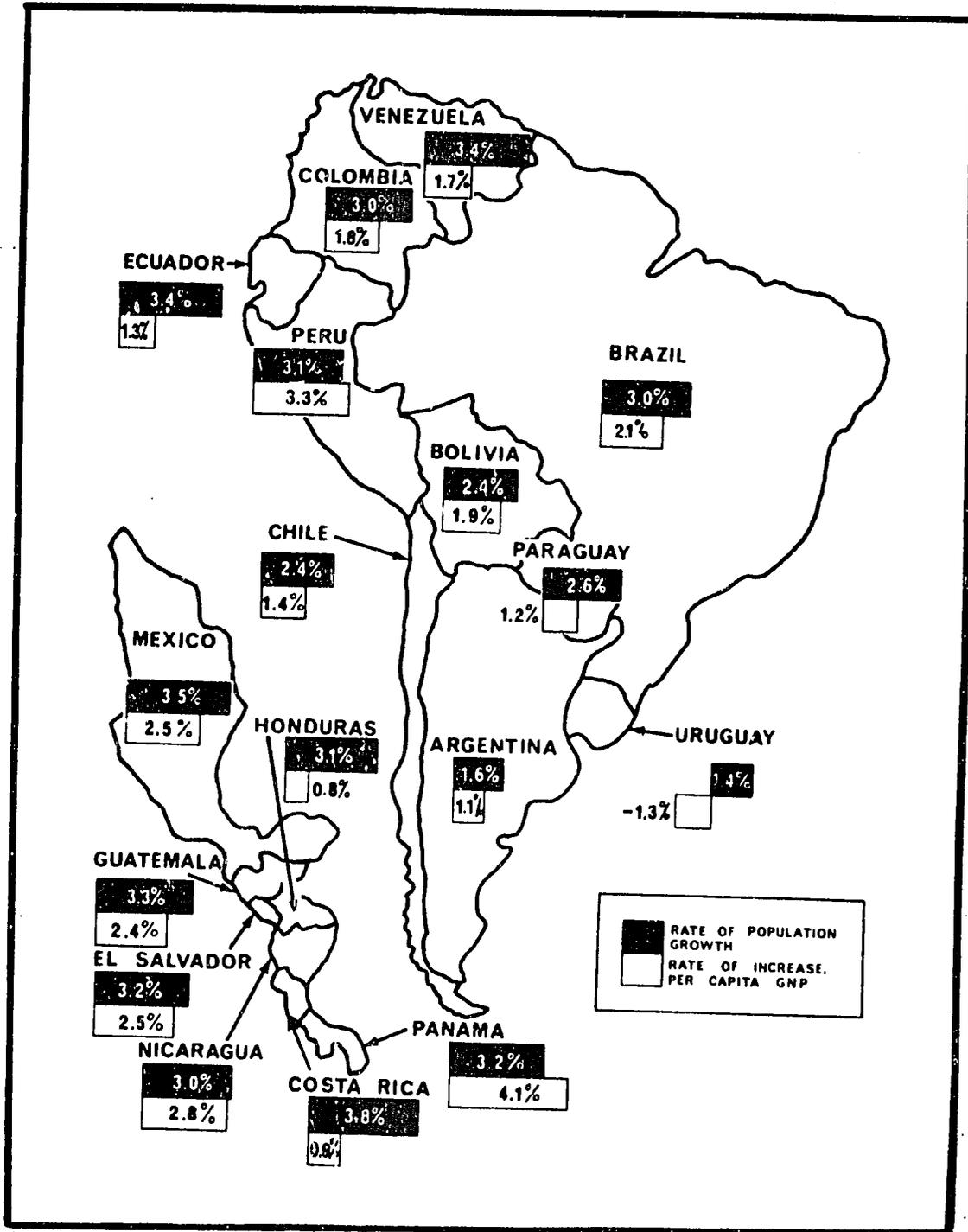
*Carmen A. Miro, "The Population of Twentieth Century Latin America," *Population Dilemma in Latin America*, Edited by J. Mayone Stycos & Jorge Arias, (Washington, D.C.: Potomac Books, Inc., 1966), p. 2.

In considering the rapid growth in population it is essential to also consider economic growth. Figure 2 indicates the comparison between the percentage of annual population growth and the percentage of annual increase of the individual country's Gross National Product (G.N.P.).

The cost of this growth must be met before new investment can be made in educational, agricultural, and productive facilities. For example, if a nation is increasing its Gross National Product

¹Ibid.

FIGURE 2.*
People Growth vs. Economic Growth



*Population Bulletin, "Punta Del Este, 1961-1967: Early Dawn of A Demographic Awakening," Vol. XXIII, No. 3, (Washington, D. C., Population Reference Bureau, Inc., June 1967), p. 66.

at 5 percent per year -- a level that eight of the Latin American countries have been able to sustain -- and if the population is growing at the rate of 3 percent per year, then the per capita income rises at a rate of 2 percent.¹ This means that per capita incomes will not have doubled until after the turn of the century. The present average per capita income of approximately \$149 to \$895 (Table 3) would take 35 years to double.

Therefore, the difficulty is not the size of the population, but rather the rate of population growth and the way in which growth impedes the process of modernization. More often than not, capital is the constraint in modernization, given an abundance of workers and adequate economic organization. In agrarian economies undergoing development, it is often thought that the capital - output ratio may be as low as three.² That is, an investment of three units will produce an addition of one unit to the income stream. Given this situation, the investment of 9 percent of the national income would add 3 percent to the national income annually. A 3 percent rate of growth doubles the base in 23 years, an annual investment of 9 percent of the national income should double national income in 23 years. Such development of the economy would represent considerable achievement, but whether it would

¹Frank W. Notestein, "The Population Crisis: Reasons For Hope," Foreign Affairs, Vol. 46, No. 1, October 1967, p. 169.

²Frank W. Notestein, "Economics of Population Change in Developing Countries," Population Dilemma in Latin America, Edited by J. Mayone Stycos and Jorge Arias (Washington, D.C.: Potomac Books, Inc., 1966), p. 93.

TABLE 3* DEMOGRAPHIC AND ECONOMIC DATA FOR LATIN AMERICAN COUNTRIES

Country	Estimated population mid-1966 (millions)	Estimated urban population mid-1966 (millions)	Population Density (km ² Arable Land) 1960	Current rate of population growth	Number of years to double population*	Birth rate per 1,000 population	Death rate per 1,000 population	Population under 15 years (percent)†	Population illiterate 15 yrs & older (percent)†	Per capita GNP 1966 (U.S.\$)‡	Increase in per capita GNP (percent)§
Tropical Latin America	1	2	3	4	5	6	7	8	9	10	11
Bolivia	3.7	1.3	113.2	2.4	29	42-46	20-23	-	68.9	149	1.9
Brazil	83.9	42.1	382.8	3.0	24	40-44	10-13	43	51.4	271	2.1
Colombia	18.4	9.9	298.2	3.0	24	42-46	13-17	-	38.5	292	1.8
Costa Rica	1.5	.5	435.9	3.8	19	40.8	8.8	48	15.7	406	0.9
Ecuador	5.2	1.9	397.8	3.4	21	46-51	15-18	45	69.4	224	1.3
El Salvador	3.0	1.2	459.7	3.2	22	46.5	10.5	45	52.0	279	2.5
Guatemala	4.6	1.5	262.6	3.3	21	43.5	16.8	-	70.3	314	1.7
Honduras	2.4	.6	190.0	3.1	23	46-50	14-17	51	55.0	229	0.8
Mexico	42.2	23.1	181.1	3.5	20	45.3	9.5	44	34.6	470	2.5
Nicaragua	1.7	.7	85.1	3.0	24	45-50	13-16	48	50.4	365	2.8
Panama	1.3	.6	246.4	3.2	22	39.1	9-12	43	26.7	513	4.1
Peru	12.0	5.7	599.1	3.1	23	42-46	13-15	45	39.9	378	3.3
Venezuela	9.0	6.1	259.6	3.4	21	47-51	8-12	45	34.2	895	1.7
Temperate Latin America											
Argentina	22.7	16.4	70.3	1.6	44	21.8	8.3	30	8.6	700	1.1
Chile	8.8	5.4	141.9	2.4	29	32.8	11.2	40	16.4	501	1.4
Paraguay	2.1	.7	350.5	2.6	27	42-46	12-17	43	31.8	224	1.2
Uruguay	2.7	1.9	110.8	1.4	50	24-27	7-9	28	15-20	569	-1.3
United States	196.8	-	-	1.2	58	19.4	9.4	31	2.5	3,648	2.8

* Assuming continued growth at the current rate.

† Latest available year.

‡ In constant 1965 prices

§ Annual average compound rates between the 1957-58 and 1965-66 periods in constant 1965 prices.

Sources: Columns 1, 6, 7 and 8: United Nations and other sources; Columns 4, 10 and 11: Agency for International Development, Growth Rates and Trend Data, March 31, 1967; Column 9: Latin American Center, University of California, Statistical Abstract of Latin America, 1965, Table 17

2 Inter-American Development Bank, Social Progress Trust Fund Sixth Annual Report 1966.

3 Pan American Health Organization, Population Information Center, Population Dynamics Programs of Organizations Engaged In Pan American Cooperation 1965-1966, Document 11.

*Population Bulletin, Vol. XXIII, No. 3, p. 56.

bring any improvement in living conditions, or additional savings and investments, would depend on the rate of population growth.

The population of the countries under consideration, with a few exceptions, have certainly not reached disproportionate size in relation to their living area or potential resources. The low population density in most Latin American countries is often cited as justifying a need for continued population growth.¹ For example, during the August 1966 debate in Brazil over the possibility of U. S. aid on population problems, Dr. Fabio Fonseca, president of the Belo Horizonte Regional Council of Medicine, stated that Brazil needs a population twice its present size in order to settle the vast empty spaces of the country.² In advocating such a policy, it is easy to fail to take into account the problems resulting from a phenomenon which until recently has been totally unknown, relating not to the size of the population, but to the high and progressively rising rate of population growth. Both Venezuela and Chile had, in 1960, populations equal to that of Sweden. The difference however, is that Sweden's rate of national increase is about 0.4 percent a year and decreasing, while those of Venezuela and Chile are 3.9 percent and 2.5 percent respectively, and still rising.³

¹Carmen A. Miro, "The Population of Twentieth Century Latin America," Population Dilemma in Latin America, p. 22.

²J. Mayone Stycos, "Population Control in Latin America," World Politics, Vol. XX, No. 1, October 1967, p. 68.

³Carmen A. Miro, "The Population of Twentieth Century Latin America," Population Dilemma in Latin America, p. 22.

On the other hand Frank W. Notestein, the president of The Population Council discounts the theory that all sparsely populated countries can absorb more people. Dr. Notestein has found that there is no close correlations (either positive or negative) between population density and economic prosperity. He contends that "what matters is the level and type of the economy." "... population density has an entirely different significance for the traditional self-sufficient agrarian economies than for the highly diversified and heavily capitalized economies that rely on inanimate energy and the sophisticated use of resources. In the former, high density spells poverty. In the latter, as the experience of Europe clearly shows, high population density, whatever its other disadvantages, is not a major obstacle to the achievement of high per capita income."¹

An increasing rate of population growth will inevitably produce a greater need for capital investment to achieve a predetermined level of per capita production. However, greater availability of capital funds will not be generated automatically because of a large population growth. The present growth rate of Latin America is causing an increasing scarcity of funds available for promoting economic development. By limiting the availability of capital, accelerated population growth impedes the opening and developing of new areas and causes instead the displacement of the rural population toward urban areas.

¹Population Bulletin, Vol. XXIII, No. 3, pp. 58-59.

In moving to the cities many migrants must live in marginal circumstances with regard to not only employment but also housing, education and health. The city, unable to give proper attention to the needs and requirements of its new immigrants, must bear the growth of slums; its transportation services deteriorate; its education facilities are overcrowded; its sanitation facilities become overtaxed; and the problems connected with all public services are compounded. In part, this explains why the city, usually a seat of political power, is the focus of social movements trying to modify the present unfavorable conditions.

The age structure in Latin America which has been created by the population growth, approximately 43 percent 15 years old or younger (Table 3) has consequences of a different type; the need for increasing investments to fill the needs of children and adolescents, especially their education. The number of dependents or consumers, grows in greater proportion than the number of persons who are able to work, creating a situation in which the urgency of attending to the needs of minors and the aged reduces the capital available for productive purposes. It also makes it difficult to meet the demands for jobs of the increasing number of young adults who enter the labor force.

In view of projected rates of population increase Latin America could face a severe food shortage within the next 15 years. The per capita food supply in most Latin American countries is

unsatisfactory. This is particularly true of "protective"¹ foods; such as vegetables, meat, eggs, fish, milk, fats and oils. As a result, average per capita availabilities of calories, and especially of proteins, fats, and certain mineral and vitamins, are substantially below internationally accepted minimum nutritional standards. Latin American food imports from outside the region currently amount to an annual total of over \$600 million, or more than 7 percent of all imports.² There is no question but what agricultural productivity and production must be increased in order to avoid a Malthusian crisis.³

The population growth in Latin America is the most significant element in the economic development and political future of the continent. The implications of such rapid growth can bring about a sense of futility and hopelessness to anyone concerned over the future of these countries. However, in spite of the grim realities, there is hope. There is evidence of the increasing awareness of the magnitude and gravity of the problem by the Latin American planners and senior government officials.

¹Inter-American Development Bank, "Socio-Economic Progress in Latin America," Social Progress Trust Fund Sixth Annual Report, 1966, (Washington, D. C., Feb. 28, 1967), p. 43.

²Ibid.

³Thomas Robert Malthus (1766-1834) was an English economist. In his publication Essay on the Principle of Population (1798) he concluded that population tends to increase more rapidly than food supplies. He believed that wars and disease would have to kill off the extra population unless people decided to limit the number of their children. The Neo-Malthusians of the 1900's urged planned parenthood. Malthus himself had rejected this belief in his Essay. (Source: World Book Encyclopedia, Vol. 13, Field Enterprises Education Corp., Chicago, Ill., 1965), p. 91.

There is hope by the medical and health personnel that, although death rates are declining and birth rates are high, there is a tremendous potential of increasing the productivity of the population by improving the nutritional and environmental surroundings. There is hope by agriculturists who believe through improved price policies, land reform, improved technology and price structure that Latin American countries will not have to continue with chronic hunger, and will not face a Malthusian crisis.

In the following chapters, some of the causes of excessive population will be discussed, as well as the economic aspect toward Education, Agriculture, Urbanization, and Public Health. The various programs and means of coping with the problem will also be discussed as well as identifying progress which has been made thus far. Finally the conclusions are intended to show that although the problem is serious and immediate, there is hope for reconciling it, assuming sufficient measures and efforts are made with increasing intensity. The author reached these conclusions after a survey of the most recent government publications, reports, books, periodicals and articles on the subject. Although the bulk of the material is pessimistic, it is believed that if "there is a will there is a way" and it is urgent that the "way" be explored and implemented while the "will" is being developed and strengthened.

CHAPTER II

CAUSES FOR ACCELERATED POPULATION GROWTH

Culture and Traditions

Large Family Pattern

The large family pattern has existed throughout the history of Latin America, particularly among the rural and village people. It can be assumed that originally the large family was necessary to carry out the labors necessary to a subsistence type agrarian economy. Under such a society, if the family unit did not provide sufficient labor it could not survive. Also, it was only a few generations ago that high birth rates were essential for survival of the human species because death rates were so high. However, the decreasing or lower death rates, when combined with traditionally high birth rates, provide a basis for accelerated population growth.

The pattern continues to exist and particularly with rural families which are larger than urban families. In fact rural women in Latin America are following the pattern of rural women over most of the world -- they have more children than urban

women.¹ These fertility differences are associated with socio-economic factors. In Puerto Rico, for example, the urban women who are beyond their reproductive years and those with less than one year of school averaged 5.6 children, while those who had completed the eighth grade had 3.5 children. Woman who had graduated from high school averaged 2.2 children and women with some college education had only 1.8 children. In contrast, the rural women averages ranged from 7.0 children for women with the least educational background to 2.1 children for those with the highest educational background.²

Similar differences have been found between relatively homogeneous groups of Brazilian men in the city of Sao Paulo compared with those in the rest of the state. The urban men between the ages of 50 and 59 in liberal professions averaged 2.9 children and those in the manufacturing industries averaged 4.8 children. Outside Sao Paulo, the families were substantially larger; men in the liberal professions had 4.1 children; men in the manufacturing industries had 6.2 children; and those engaged in agriculture averaged 7.6 children.³

Marriage

Early marriage of young girls, with the exception of those

¹Population Bulletin, "Latin America, The 'Fountain of Youth' Overflows," Vol. XIV, No. 5, (Washington, D.C.: Population Reference Bureau, Inc., 1958), p. 94.

²Ibid.

³Ibid.

in the upper social class, had traditionally been accepted as natural. According to census tables, of number of children ever born by age of mother, indicate a significant number of children born to mothers who are as young as thirteen to fifteen years of age, especially in the rural areas.¹

Formal marriage is considered an "upper class" behavior by many of the rural people as well as among the poorer class of urban areas. Therefore, in many areas common-law marriages -- in Spanish called "consensual unions" -- are culturally acceptable. In 1950 the censuses of seven countries indicated that 20 percent or more of the population over fifteen years of age were living in consensual unions.² Many of these unions are relatively stable and last a lifetime, while others are considerably shorter in duration, thus providing the opportunity for additional consensual unions and additional families.

Social Taboos

Almost complete ignorance of the very basic and elementary knowledge of human physiology and hygiene has resulted from generations of illiterate ancestors and the taboo on discussion of sex and procreation.³ The vast sparsely and underpopulated areas, religious taboos, have also contributed to silencing public discussion

¹William E. Moran, Jr. (Editor), Population Growth - Threat To Peace? "600 Million Latin Americans?" by Calvert L. Dedrick, (New York: P. J. Kennedy & Sons, 1965), p. 46.

²Ibid.

³Ibid.

and information on population and birth control. As late as 1965, the former Columbian President, Alberto Lleras Camargo referred to population control as "el gran tabu" of our century.¹

However, early in the 1960's, a combination of circumstances caused the topic of "el gran tabu" and "population explosion" to be discussed openly and even publicized. Some of the circumstances were: publication of the 1960 census (an even greater number of individuals reported than had been anticipated); the Vatican openly discussing the population growth problem; the widely publicized technical innovations, "the pill" and the "IUD"; and finally the overall concern for population growth in the developing nations as observed by the developed nations, foundations and organizations.²

The reason that many of these culture traits and practices will be slow in dissolving is that as of today, most of the mothers of the children who will be born in the next twenty-five to thirty-five years are already living, and have been reared in this cultural environment as well as acquiring other cultural characteristics and values of the community. Therefore, the present mores and cultural differences will not be changed immediately but only through constantly working with them and through educating the people to understand the dire consequences which they face as a society if the continuing population growth is not curtailed.

¹J. Mayone Stycos, "Politics and Population Control in Latin America," World Politics, Vol. XX, No. 1, Oct. 1967, p. 67.

²Ibid.

Increase of Life Span

Effects of Public Health

Government health programs, both with and without foreign technical assistance, have drastically reduced the incidence of communicable disease. The control of malaria in recent years has been a particularly important factor in lowering death rates in Latin America, because four-fifths of the population live in malaria-infected areas.

The incidence of smallpox in the continent has been reduced by one-half during the last ten years.¹ During the same period, yaws have been brought under almost complete control and yellow fever has been suppressed in many countries. Hookworm among school children has been greatly reduced in Peru and other countries through increased sanitation programs.

Effective control of mass contagious disease throughout Latin America has caused significant reductions in the death rate. Between the late 1930's and the mid-1950's, the spectacular decline in death rates for countries with reasonably reliable data has ranged from 63 percent in Puerto Rico to 26 percent in Guatemala. Seven out of twelve countries had declines ranging from 40 to 50 percent. Argentina had already reported a much lower death rate in the mid-1930's, so the decline to eight for that country is less

¹Population Bulletin, "Latin America, The 'Fountain of Youth' Overflows," Vol. XIV, No. 5, (Washington, D.C.: Population Reference Bureau, Inc., 1958), p. 95.

dramatic.¹ Continued progress in environmental sanitation can be expected to further reduce death rates and permit individuals to live longer.

Increase in Birth Rates -- Decrease in Death Rates

Accurate statistics on births and deaths for the beginning of this century are very unreliable. Nevertheless, from the information available it is possible to construct a general picture of the situation which explains why the population of the region grew at an annual rate of less than 2 percent. All countries, with the possible exception of Uruguay, showed high birth rates of more than 40 per 1000, with some probably closer to 50 per 1000. Mortality rates were also high -- over 25 per 1000, and as high as 30 per 1000 in several countries.²

Tables 4 and 5 show birth and death rates since 1900. The birth rates are probably more reliable than death rates, the latter being generally based on official registers which are known to be imperfect.³ The figures for Chile and Puerto Rico seem to be the most accurate. Argentina and Uruguay show themselves to have been

¹Ibid., p. 96.

²Carmen A. Miro, Mayone J. Stycos, and Jorge Arias (Editors), Population Dilemma in Latin America. "The Population of Twentieth Century Latin America," (Washington, D.C. Potomac Books, Inc., 1966), p. 6.

³Ibid., p. 6. Miro has referred to the provisional report of the prospects for future world population, published by the United Nations 1964 (St/SOA/SER.R/7). It pointed out that "at the beginning of the twentieth century the mortality rate ought to have been about 30-35 per thousand, having descended gradually to the level of 20-25 per thousand by the end of 1930."

TABLE 4.*

Latin America.
Crude birth rates for indicated periods.

Period	Rate (per M)	Source	Period	Rate (per M)	Source			
Tropical South America			1935-39	45.0	(1)			
Brazil	1940-45	43 (1)	1940-44	44.9	(1)			
	1945-50	43-47 (2)	1945-49	45.1	(1)			
Colombia	1955-60	43-47 (2)	1950-54	49.2	(1)			
	1970-01	43 (5)	1955-59	50.0	(1)			
	1905-09	44 (3)	1960	50.2	(1)			
	1910-14	44 (3)	Panama	1910-24	37.4	(4)		
	1915-19	44.1 (3)		1930-34	36.5	(1)		
	1920-24	44.6 (3)		1935-39	36.4	(1)		
	1925-29	44.9 (3)		1940-44	37.5	(1)		
	1941-45	44 (1)		1945-49	36.0	(1)		
	1945-50	44-47 (2)		1950-54	35.9	(1)		
	1955-60	43-46 (2)		1955-59	39.9	(1)		
1930-35	45 (1)	1960		41.0	(1)			
1945-50	42-48 (2)	Temperate South America						
1955-59	42-45 (2)	Argentina		1905-09	41.0	(3)		
Venezuela	1945-50	44-43 (2)	1905-09	40.0	(3)			
Ecuador	1955-60	45-50 (2)	1910-14	40.3	(3)			
	1940-45	47 (1)	1915-19	36.1	(3)			
Bolivia	1945-50	45-50 (2)	1920-24	34.3	(3)			
	1955-60	45-50 (2)	1925-29	32.4	(3)			
	1970-45	43 (1)	1930-34	26.8	(1)			
	1945-50	41-45 (2)	1935-39	24.0	(1)			
	1940-44		1940-44	24.1	(1)			
	1945-49		1945-49	25.1	(1)			
Continental Central America			1950-54	25.1	(1)			
Mexico	1900-01	46.5 (3)	1955-59	24.0	(1)			
	1905-09	46.0 (3)	1960-62	22.3	(1)			
	1910-14	43.2 (3)	Chile	1900-01	44.7	(3)		
	1915-19	40.6 (3)		1905-09	44.6	(3)		
	1920-24	45.3 (3)		1910-14	44.4	(3)		
	1925-29	44.3 (3)		1915-19	43.3	(3)		
	1930-34	44.5 (1)		1920-24	42.2	(3)		
	1935-39	43.5 (1)		1925-29	43.8	(3)		
	1940-44	44.2 (1)		1930-34	40.5	(1)		
	1945-49	44.4 (1)		1935-39	36.6	(1)		
	1950-54	44.9 (1)		1940-44	36.4	(1)		
	1955-59	45.9 (1)		1945-49	35.7	(1)		
	1960	46.0 (1)		1950-54	33.8	(1)		
	Guatemala	1930-34		51.6 (1)	1955-59	36.0	(1)	
		1935-39		47.7 (1)	1960-62	34.8	(1)	
1940-44		47.2 (1)		Uruguay	1910-14	36.8	(5)	
1945-49		50.6 (1)			1915-19	31.9	(5)	
1950-54		51.4 (1)	1920-24		30.0	(5)		
1955-59		49.1 (1)	1925-29		28.6	(5)		
1960	49.5 (1)	1930-34	25.9		(5)			
1920-24	45.9 (4)	1935-39	22.5		(5)			
El Salvador	1930-34	43.3 (1)	1940-44	21.6	(5)			
	1935-39	42.7 (1)	1945-49	21.1	(5)			
	1940-44	43.3 (1)	1950-54	22.3	(5)			
	1945-49	44.4 (1)	1955-59	22.2	(5)			
	1950-54	49.4 (1)	1960	22.0	(5)			
	1955-59	50.0 (1)	1961	21.8	(5)			
Honduras	1960	49.9 (1)	1962	21.7	(5)			
	1945-50	45-50 (2)	1963	21.5	(5)			
Nicaragua	1945-50	45-50 (2)	Paraguay	1945-50	45-50 (2)			
	1955-60	45-52 (2)		1955-60	45-50 (2)			
Costa Rica	1900-04	46.9 (3)	Caribbean	Cuba	1931	32.9	(6)	
	1905-09	48.2 (3)			1943	31.0	(6)	
	1910-14	48.9 (3)			1945-49	30.5	(6)	
	1915-19	44.7 (3)			1950-54	28.1	(6)	
	1920-24	44.7 (3)			1955-59	25.4	(6)	
	1925-29	46.2 (3)			1920-30	39.3	(7)	
	1930-34	45.7 (1)			1930-34	40.6	(1)	
	1960	29.6 (6)			1935-39	39.1	(1)	
	1961	32.2 (6)			1940-44	39.6	(1)	
	1962	35.1 (6)			1945-49	41.0	(1)	
	Haiti	1945-50			42-50 (2)	1950-54	36.6	(1)
		1955-60			42-50 (2)	1955-59	33.7	(1)
Dominican Republic	1945-50	48-54 (2)	1960	31.7	(1)			
	1955-60	48-54 (2)	1961	31.0	(1)			
Puerto Rico	1892-1910	40.5 (7)	1962	31.1	(1)			
	1910-20	40.4 (7)						

- (1) *Provisional Report on World Population Prospects as Assessed in 1963*, UN ST/EOA/SEC R/7.
(2) *Economic Bulletin for Latin America*, Vol. VII No. 1 Statistical Supplement, Santiago, Chile, 1962.
(3) Kinsley Davis, "Población de América Latina en la Historia Demográfica Mundial" en *Demografía y Salud Pública en América Latina*, Traducción de la Población en el Mundo de la Fundación Milbank Memorial, Vol. XLII, No. 2, April 1964, Part 2, New York.
(4) Naciones Unidas, América Latina, Seminario sobre Población ST/EOA/ER/C/33 ST/EOA/36.
(5) Uruguay, Dirección General de Estadística, *Tercer Demográfico Evolución para el Período 1910-1954*, Doc. Trabajo No. 3, Estimación No. 1, 13-XII-64, Mimeographed.
(6) Central Planning Committee, Bureau of Statistics, *Statistical Data on the principal characteristics of the Cuban population*, Havana, May 1965.
(7) *The Demographic Evolution of Puerto Rico*, Jose L. Vasquez, Chicago, Illinois, 1964, Mimeographed.

TABLE 5.*

Latin America.
Crude death rates for indicated periods.

	Period	Rate (per M)	Source		Period	Rate (per M)	Source	
Tropical South America				Temperate South America				
Brazil	1945-50	17-23	(1)	Argentina	1911-13	16.8	(2)	
	1955-60	11-16	(1)		1921-25	14.4	(2)	
Colombia	1945-50	17-21	(1)		1926-30	13.3	(2)	
	1955-60	14-17	(1)		1930-34	11.6	(4)	
Peru	1945-50	18-24	(1)		1935-39	11.6	(4)	
	1955-60	13-13	(1)		1940-44	10.3	(4)	
Venezuela	1911-13	22.0	(2)		1945-49	9.6	(4)	
	1920-24	21.7	(3)		1950-54	8.7	(4)	
	1926-30	18.9	(2)		1955-59	8.6	(4)	
	1945-50	16-20	(1)		1960-62	8.1	(4)	
Ecuador	1945-50	10-15	(1)	Chile	1905-09	32.5	(2)	
	1955-60	20-25	(1)		1911-13	31.0	(2)	
Bolivia	1945-50	15-20	(1)		1921-25	30.3	(2)	
	1955-60	23-27	(1)		1926-30	25.8	(2)	
Continental Central America	Mexico	1921-25	25.5		(2)	1930-34	23.9	(4)
		1926-30	25.6		(2)	1935-39	23.3	(4)
		1930-34	25.6		(4)	1940-44	19.8	(4)
		1935-39	23.3	(4)	1945-49	17.2	(4)	
		1940-44	22.1	(4)	1950-54	13.6	(4)	
		1945-49	17.8	(4)	1955-59	12.6	(4)	
	Guatemala	1950-54	15.5	(4)	1960-62	12.0	(4)	
		1955-59	12.5	(4)	Uruguay	1910-14	13.6	(5)
		1960	11.5	(4)		1915-19	14.1	(5)
		1930-34	26.1	(4)		1920-24	12.5	(5)
		1935-39	26.5	(4)		1925-29	11.9	(5)
		1940-44	27.8	(4)		1930-34	11.6	(5)
	1945-49	23.8	(4)	1935-39		11.1	(5)	
	El Salvador	1950-54	21.4	(4)		1940-44	10.3	(5)
		1955-59	19.9	(4)	1945-49	9.1	(5)	
		1960	17.5	(4)	1950-54	8.5	(5)	
1905-09		24.7	(2)	1955-59	8.8	(5)		
1911-13		25.0	(2)	1960	8.8	(5)		
1921-25		23.9	(2)	1961	8.6	(5)		
Honduras	1926-30	23.7	(2)	Paraguay	1962	8.7	(5)	
	1930-34	23.0	(4)		1963	8.6	(5)	
	1935-39	21.1	(4)	1945-50	15-20	(1)		
	1940-44	20.5	(4)	1955-60	12-16	(1)		
	1945-49	17.1	(4)	Caribbean	Cuba	1930-34	11.3	(3)
	1950-54	15.2	(4)			1939	9.8	(6)
	1955-59	13.2	(4)			1943	10.6	(6)
	1960	11.0	(4)			1945-49	8.3	(6)
	1945-50	13-24	(1)			1950-54	6.7	(6)
	1955-60	15-20	(1)			1955-59	6.4	(6)
1945-50	16-20	(1)	1960-62			6.8	(6)	
Nicaragua	1955-60	12-17	(1)	1945-50	25-30	(1)		
	1955-60	12-17	(1)	1955-60	20-28	(1)		
Costa Rica	1911-13	25.0	(2)	Haiti	1945-50	20-25	(1)	
	1921-25	23.1	(2)		1955-60	16-20	(1)	
	1926-30	21.1	(2)	Dominican Republic	1899-1909	28.0	(7)	
	1930-34	22.1	(4)		1910-1919	23.9	(7)	
	1935-39	20.0	(4)		1920-29	22.2	(7)	
	1940-44	18.3	(4)		1930-39	19.7	(7)	
	1945-49	14.0	(4)		1940-49	14.5	(7)	
	1950-54	11.6	(4)		1950-59	8.0	(7)	
	1955-59	9.6	(4)		1960	6.7	(7)	
	Panama	1960	8.6	(4)	1961	6.7	(4)	
1945-50		14-17	(1)	1962	6.7	(4)		
1955-60		9-13	(1)					

- (1) *Economic Bulletin for Latin America*, Vol. VII No. 1 Statistical Supplement, Santiago, Chile, 1962.
 (2) United Nations: *Population Bulletin of the United Nations*, No. 6, 1962, Table III-10, p. 32.
 (3) Naciones Unidas: *América Latina. Seminario sobre Población*, ST/FAA/SER.C/33/ST/NOA/36.
 (4) *Provisional Report on World Population Prospects as Assessed in 1961*, UN ST/DA/SER.R/7.
 (5) Uruguay. Dirección General de Estadística, *Tercer Demográfico Estadístico para el Período 1910-1981*. Doc Trabajo No. 3, Petimac, No. 1, 11-XII-64, Mimeo graphed.
 (6) Junta Central de Planificación, Dirección General de Estadística, *Principales Características de la Población de Cuba*, La Habana, Mayo, 1965.
 (7) Vázquez, José L., *The Demographic Evolution of Puerto Rico*, Chicago, Illinois, 1961. Mimeo-graphed.

*J. Mayone Stycos and Jorge Arias (Editors), Population Dilemma in Latin America. (Washington, D.C.: Potomac Books, Inc., 1966), p. 7.

in a more advanced stage of the demographic cycle. These two countries show lower birth and death rates at the beginning of the century than most of the Latin American countries show in 1960.

Despite the limitations, these data do allow for an approximate judgment of the evolution of mortality rates. This evolution is characterized by a continual decline. It was gradual in the first years of the century, but gathered momentum, especially since 1930. In several countries, the decline reduced mortality rates to levels less than half of those of 1900.

Based on the figure on Table 5, the percentages declines in the rates for different periods are presented in Table 6. For eight countries, indicated by braces, somewhat representative of the four sub-regions of Latin America, it is possible to compare the evolution of the rates prior to 1930. Carmen Miro has made the comparison as follows: "For age groups between 15 and 21 years, decreases in mortality rates fluctuated between 4 and 21 percent. On the other hand between 1930 and 1962, the percentage decline in mortality was between 26 and 65% for those 28 to 31 years of age. Argentina and Uruguay, which already had moderate mortality rates in 1930, registered the smallest declines (30 and 26%, respectively). For 11 countries, it was only possible to calculate the percentage of decrease for the periods 1945-50 and 1955-60. For these countries, the decline in the mortality rate either began later or took place more slowly than elsewhere, for the levels reached in the period 1945-50 are comparable to those which had been reached

TABLE 6.*

Latin America.
Reduction in death rates for indicated periods.

	Initial period		Final period		Percentage decrease from initial period	No. of years between periods
	Date	Rate (per M.)	Date	Rate (per M.)		
Tropical						
South America						
Brazil	1945-50	20.0	1955-60	13.5	32.5	10
Colombia	1945-50	19.0	1955-60	15.5	18.4	10
Peru	1945-50	21.0	1955-60	15.5	26.2	10
Venezuela	1911-13	22.0	1926-30	18.9	14.1	16
	1926-30	18.9	1955-60	12.5	33.9	29
Ecuador	1945-50	22.5	1955-60	17.5	22.2	10
Bolivia	1945-50	25.0	1955-60	22.5	10.0	10
Continental Central America						
Mexico	1921-25	25.5	1926-30	25.6	+0.4	5
	1930-34	25.6	1960	11.5	55.1	28
Guatemala	1930-34	26.1	1960	17.5	33.0	28
El Salvador	1905-09	24.7	1926-30	23.7	4.0	21
	1930-34	23.0	1960	11.0	52.2	28
Honduras	1945-50	21.0	1955-60	17.5	16.7	10
Nicaragua	1945-50	18.0	1955-60	14.5	19.4	10
Costa Rica	1911-13	25.0	1926-30	21.1	15.6	16
	1930-34	22.1	1960	3.6	61.1	28
Panama	1945-50	15.5	1955-60	11.0	29.0	10
Temperate South America						
Argentina	1911-13	16.8	1926-30	13.3	20.8	16
	1930-34	11.6	1960-62	8.1	30.2	29
Chile	1905-09	32.5	1926-30	25.8	20.6	21
	1930-34	23.9	1960-62	12.0	49.8	29
Uruguay	1910-14	13.6	1925-29	11.9	12.5	15
	1930-34	11.6	1963	8.6	25.9	31
Paraguay	1945-50	17.5	1955-60	14.0	20.0	10
Caribbean						
Cuba	1930-34	11.3	1960-62	7.0	38.1	30
Haiti	1945-50	27.5	1955-60	24.0	13.7	10
Dominican Republic	1945-50	22.5	1955-60	18.0	20.0	10
Puerto Rico	1899-1909	28.0	1920-29	22.2	20.7	20.5
	1930-34	19.7	1962	6.7	66.0	29

Source: Table 5.

*J. Mayone Stycos and Jorge Arias (Editors), Population Dilemma in Latin America. (Washington, D.C.:Potomac Books, Inc, 1966), p. 9.

15 years earlier in the eight countries previously mentioned. Two extreme cases are Bolivia, which in ten years reduced its mortality rate by only 10%, and Brazil, which reduced it by 33% in the same period."

"While death registration has generally been incomplete, it is reasonable to suppose that records have gradually improved, resulting in an increase in registered deaths that does not precisely reflect actual changes in mortality rates. Thus, any reduction in the death rate deduced only from a comparison of official mortality figures over a given period probably is an underestimate."¹

By comparing the trend of mortality between 1900 and 1960, and the birth rate for the same period, it is understood why Latin Americas' -- which has not received significant immigration since the 1930's -- annual population growth rate has risen from 1.8 percent in 1920-30 to 2.8 percent in 1960-65.

The increases which have been registered in the birth rate may be attributed to improvements in record-keeping, although in a few cases they could reflect small rises in fertility.

¹Ibid., p. 8.

Immigration

From the colonial life also came the mixed ethnic heritage of modern Latin America: Indian, Negro, Spanish, Portuguese, with a smaller infusion of migrants from other European nations who were encouraged to settle during the 18th and 19th centuries. The settlers came from Ireland, Italy, Germany, and Central Europe and settled for the most part in Brazil, Argentina, Chile, and Uruguay. This accounts for such names of Latin leaders as O'Higgins, O'Leary, Busch and Kubitschek. The number of descendants of immigrants in these countries are about 25 million.¹

Before 1930, immigration from Europe accounted for a large part of the growth of the large cities of Latin America. However, in recent years immigration has made only a relatively small contribution to this growth. Some of the reasons for this decrease in immigration has been the lagging industrial development, one crop economies, restrictive immigration policies, and political instability. It is estimated that an average of some two hundred thousand persons per year immigrated to Latin America during the period 1946 to 1954 and of these about twenty-five percent have returned to their home countries.²

¹Population Bulletin, Vol. XXIII, No. 3, p. 52 Population Reference Bureau, Inc., June 1967, "The Punta Del Este, 1961-1967 Early Dawn of a Demographic Awakening."

²Population Bulletin, Vol. XIV, No. 5, p. 98. (Statistics as reported are from the United Nations Bureau of Social Affairs "Report on the World Social Situation," New York, 1957.)

Influence of The Church

The Roman Catholic Church is the most prevalent religion throughout Latin America. It is accepted as the common Church, and thus provides the basis for the moral stability among the majority of the population. Since it occupies such a dominant role in the society it becomes an organization of tremendous influence. This influence is effective in all strata of the Latin American Society. It is through this influence that the Church has been able to maintain its position concerning family planning and the use of birth control devices.

The "unnatural"¹ practices suggested during the Middle Ages have continued to be condemned as seriously immoral ways of interfering with the Creator's plan expressed in the nature of things.² They were not however, originally thought of in terms of population control but rather that their use was prompted primarily by hedonistic motives and in most cases constituted nothing more than an attempt to inhibit or destroy the natural product of illicit sexual activities. Since infant mortality rates remained high and the cost of raising children were relatively minor throughout this period, most couples apparently felt little inclination to question the order of nature by limiting the size of their families. This

¹Unnatural, included infanticide, abortion, sterilization, contraception, sexual perversions and various unusual marital practice.

²John J. Thomas, S.F., "Need for Catholic Action" included in (William E. Moran, Jr., Editor), Population Growth -- Threat to Peace? (New York: P.J. Kennedy & Sons, 1965), p. 84.

practice has existed throughout the years and the more remote the society is, the stronger it is practiced.

Thus in Latin America and particularly in the rural areas where communications are difficult, people are inaccessible; literacy is low; and traditional beliefs exist for lack of others to surplant them.

A review of evolving population patterns in the Western world clearly indicates, once couples become sufficiently determined to limit family size they were capable of contriving effective ways to accomplish the purpose. The means were necessarily related to available resources -- technical, psychological, social, and spiritual. The methods used included delayed marriages, celibacy, marital continence, contraception, sterilization, abortion, and even veiled infanticide -- conveniently disguised under the cloak of child abandonment.¹ All of these were used more or less effectively at one time or another during the eighteenth and nineteenth centuries in Europe.

The central fact that must be kept in mind according to John L. Thomas, S.J., " . . . if we would grasp the real significance of modern population problems is that owing to a series of developments that began around the sixteenth century, and which we may loosely summarize under the term industrialization, Western man's traditional relationship to reproduction has undergone marked changes. The profound implications of this fact have been partially obscured

¹Ibid., p. 84.

in the industrialized nations of the West because various forms of birth control have been effectively employed to reduce birth rates. Thus no major Western Nation has solved its population problems by using methods to which the Church would give moral approval."¹

The Roman Catholic Church recognizes, through its teachings, the moral responsibility of the family to balance fertility with its spiritual needs and economic resources. Two brief quotations from statements which His Holiness Pope Pius XII issued in 1951 indicate this. After indicating the duty of married persons to contribute to the continuation of the human race, he stated:

People can be relieved from this positive obligation, over a considerable length of time and even for the whole duration of marriage, if there are strong reasons, which are sometimes found in the "indicazione" medicale, eugenetical, economic and social.

Later, Pope Pius amplified this position:

We therefore confirmed in our last address about conjugal morality the legality of the regulation of births, fixing at the same time the limits -- and indeed very wide limits -- for it. This regulation of births, in contrast with the usual concept of birth control, is compatible with the law of God. It can even be hoped that medical science will succeed in giving to this permissible method a sufficiently safe basis and the most recent information seems to confirm this hope. The Church of course leaves this aspect to medical science.²

¹Ibid.

²Population Bulletin, Vol. 12, No. 1. February 1956, "Catholic Institute Seeks Solution to Population Pressures in Underdeveloped Areas" quoted in Population Bulletin, Vol. XVII, No. 2, April 1961. (Washington, D.C.: Population Reference Bureau), p. 37.

The Catholic opposition to birth regulation is based primarily on the method. In order to overcome this there will have to be research programs which would strengthen the reliability of the rhythm method of birth regulation as well as to discover new cheaper and better methods which will be acceptable or overcome religious opposition. Such research to be effective would have to have the complete support of the Church as well as the representative governments.

The accelerated population growth in Latin America has prompted many responsible persons to come to the conclusion that the countries or nations have some obligation to control human fertility and to regulate the growing population.

The moral issue is not the undisputed right and duty of an ordered society to prevent its destruction by excessive reproduction. The moral issue is instead the legitimacy of the means which may be adopted to achieve this objective. Catholics are not and cannot be opposed to a Nation's efforts to prevent its self-strangulations by excessive reproduction; Catholics are, however, opposed to the concept of the state using its influence and prestige to endorse immoral methods of family limitations.¹

In spite of the Church's influence over the methods of birth control, there is a growing concern by individuals, and families over the type of family planning which they will undertake. Some

¹Robert F. Drinan, S.J., "A Morally Acceptable Policy," included in *Population Growth - Threat to Peace?* (New York: P. J. Kennedy & Sons, 1965), p. 165.

of the actions are drastic as reported by Dr. Calderone -- "Every illegal abortion is one woman's desperate answer to her own personal overpopulation problem. In effect, it is her attempt to practice what we all advocate; responsible parenthood."¹

Table 7 shows that many Catholic women not only know but have used contraceptive methods not sanctioned by their Church. Many of the women have resorted to the less effective methods (douches, jellies, coitus interruptus). The pill, anti-ovulation, does not appear to be very popular thus far.

TABLE 7.*

Latin America.
Percentage of Catholic women who declared
knowing or having ever used a
contraceptive method, by
method, in five
selected cities.

Method of contra- ception*	Use					Knowledge				
	Bogotá	Caracas	Mexico City	Rio de Janeiro	San José	Bogotá	Caracas	Mexico City	Rio de Janeiro	San José
Douche	12.3	24.5	14.5	23.0	17.2	56.4	7.2	60.0	81.4	72.0
Sterlization	1.0	5.9	1.8	6.1	5.9	36.1	80.2	50.4	63.2	72.0
Diaphragm	2.0	4.4	3.4	3.5	3.8	23.5	47.2	37.2	42.6	44.0
Jelly	6.6	2.0	3.8	3.4	4.6	46.2	23.6	23.2	29.4	27.6
Rhythm	18.5	18.2	14.9	16.0	21.3	48.6	59.8	47.0	62.0	70.8
Condom	10.5	30.6	8.9	12.4	36.9	39.7	78.9	43.1	62.2	87.7
Coitus interruptus	16.4	22.1	7.1	5.4	23.9	38.8	63.4	32.4	39.9	62.0
Pills	2.4	1.2	6.1	4.1	1.8	4.9	3.9	20.2	6.8	3.0

Source: Program of Comparative Fertility Surveys, CELADE, 1964.

* Methods are listed here in the same order in which they were included in the questionnaire.

* Ramiro Delgado Garcia, "Perspectives of Family Planning Programs," as included by J. Mayone Stycos and Jorge Arias (Ed.), Population Dilemma in Latin America: (Washington, D.C.:Potomac Books, Inc, 1966), p. 218

¹Dr. Mary S. Calderone, IPPF Western Hemisphere Regional Conference, Puerto Rico, 1964. Reported by International Planned Parenthood Federation, London, England

In 1963 a doctor from Uruguay told a New York press conference: "In my country abortion is looked upon as a worse scourge than polio or tuberculosis, and Uruguay therefore represents the paradox of an underpopulated country desperately in need of birth control education."¹

Table 8 indicates that the proportion of Catholic women who declared they had ever tried to control their fertility rises with increasing levels of education. The lowest percentages of users were found in Bogota and Mexico City among women with no education. These areas also have the highest average number of live births per married woman (3.95 and 4.16, respectively).² A significant proportion of these women practiced contraception prior to their third pregnancy. It is clear that a substantial and increasing number of Catholics are using contraception in Latin America. The experience is similar in other Catholic countries; the birth rates of Italy, Spain and Portugal have fallen below those of the United States, through a wider use of contraception.³

The importance of education for human dignity lies not only in the struggle against illiteracy as a component of freedom, but in the specific benefits derived from visualizing the family in

¹International Planned Parenthood Federation folder, (London, England).

²Ramiro Delgado Garcia, "Perspectives of Family Planning Programs, Population Dilemma in Latin America, p. 218.

³Ibid., p. 219.

its relation to national development, in a new appreciation of the family planning effective according to the individual conscience.

TABLE 8.*

Latin America.
Percentage of Catholic women who have ever used contraceptives, by educational level, in seven selected cities.

	Bogotá	Buenos Aires*	Caracas	Mexico City	Panama City	Rio de Janeiro	San José
Women in legal or common law marriage	39.4	77.6	59.9	50.2	59.7	55.8	65.0
No education	14.6	52.0	38.1	11.0	35.0	40.0	43.3
Some primary education	28.2	74.8	52.5	27.7	46.3	45.5	51.1
Complete primary education	39.7	81.3	71.7	42.9	56.2	60.0	68.4
Some secondary education	59.5	73.9	77.6	54.4	65.0	69.1	78.5
Complete secondary education	74.0	83.4	64.7	63.8	66.7	72.7	50.1
Some university education	70.0	73.5	76.2	50.9	62.7	71.0	77.6

Source: *Programs of Comparative Fertility Surveys*, CELADE, 1961.

* Refers to all women.

*Ramiro Delgado Garcia, "Perspectives of Family Planning Programs," as included by J. Mayone Stycos and Jorge Arias (Ed), Population Dilemma in Latin America. (Washington, D.C.:Potomac Books, Inc, 1966), p. 217.

Political Implications

Latin Americans have long lived in a psychological atmosphere of underpopulation. Latin intellectuals generally have not believed in the existence of a population problem -- for reasons which do not necessarily relate to religion. Marxists have regarded the emergence of excess population as impossible in an efficient socialist state, and have considered the accelerated population growth an imperialistic smoke-screen to divert attention from the need for more basic social and economic reforms; nationalists have viewed the populating of Latin America's open spaces as a kind of manifest destiny which would bring power to the small, weak nations of the Western Hemisphere.

Argentina's great political philosopher, Juan Bautista Alberdi imparted his wisdom in memorable form at the Constitutional Convention in 1852 where he said, "Gobemar es poblar," ("To rule is to populate.")¹ In fact he further emphasized the point by saying, "The Minister of Government who does but double the population every decade" is a failure. In the context of a century or more ago, this edict had its logic. However, if such a wishful rate of increase had not exceeded the biological powers of the human population Argentina alone would have had a population of over a billion by 1950,² and nearly equal the world population today.

¹Population Bulletin, Vol. XXIII, No. 3, June 1967, p. 53.

²Ibid.

The concept of people as power continues today illustrated in the writings of N. Viera Altamirano, editor of El Salvador's El Diario de Hoy, who contends that Latin America needs two billion more inhabitants to reach an optional level,¹ as well as by a Brazilian Minister of Health when he made the following statement:

" . . . in underdeveloped countries such as Brazil, where over 50% of the energy utilized in production is muscular in nature, population size constitutes a real element of power which is the most important means of national progress. Therefore, anything which increases population growth is beneficial for us."²

The influence of Marxist on Latin American intellectuals has been summarized very well by J. Mayone Stycos when he stated,

" . . . Marxist ideology on population continues to have a powerful influence on Latin American intellectuals of all persuasions, but the far Right. Consequently, the initial reaction of the typical intellectual to the question of population growth is that the real problems are social and economic and that any other view must be concealing ulterior motives. The need for basic social and economic reform, moreover, is obvious to virtually all persons of influence in Latin America. The Right talks about it; the Center means it; and

¹J.M. Stycos, "Opinions of Latin American Intellectuals Toward Population and Birth Control," Annals of the American Academy of Political and Social Science, July 1965, as cited by J. Mayone Stycos, "Demography and the Study of Population Problems in Latin America," Population Dilemma in Latin America, (Washington, D.C.: Potomac Books, Inc., 1966), p. 229.

²Ibid. Quote of Wilson Fadul, speech to the World Health Organization, Geneva, 1964.

the Left means it right now. Mass education, industrialization, agrarian reform, more equitable distribution of wealth, health, and happiness are the ingredients, which vary in priority, timing, and means of accomplishment; but nearly everyone is concerned that somehow and sometime they be realized. These needs are so crushing, so obvious, and so imminent that to talk of anything else appears to many only a diversionary tactic!"¹ Mr. Stycos continues by stating that " . . . increasingly, intellectuals are admitting that population growth is a problem, but it is just the kind of irritant needed to precipitate basic reforms in the economic and social structure."²

The Chilean Ambassador to the United States phrased the issue, " . . . probably the single most important factor promoting the process of modernization in the underdeveloped societies is precisely the social pressure created by population growth. . . . What would the effect be of reducing the social tensions due to population growth; in the semi-feudal and oligarchical societies of so many nations of the third world? Could it not be that a successful birth control program carries with it the seeds of self-destruction for its principal objective of modernization?"³

¹J. Mayone Stycos, "Politics and Population Control in Latin America," World Politics, Vol. XX, No. 1, Oct., 1967 (Princeton University Press), p. 74.

²Ibid.

³Ibid. Quoting Observaciones del Exemo. Sr. R. Tomic, Embajada de Chile. (Washington, May 5, 1966).

Or, as phrased by a University professor from Columbia:

Population growth can have a very positive role because it can break the vicious circle. If the pressures are very large, the society has to feed many people and this need can create something new. . . . Like the great intellectual advance during the population explosion in classical Athens. . . . it can force new ideas and they can bring about the transformation of the status quo.¹

Few socialists admit that population growth could be a problem in a socialist state. However, in light of the pattern of recent political developments in Latin America, some socialist thinkers are less optimistic about the imminence of revolution. They are beginning to ask such questions as: What if the socialist state is a long time coming and is population increase really going to accelerate its occurrence? Should population control be employed to relieve the misery of the prerevolutionary period?

Three other Colombian professors give their views:

Given our political system and the small likelihood of change, the conservative theory that you must control fertility because the economic system can't take care of peoples' needs makes more sense. . . . but if we had a good revolutionary government, then we should push for another alternative, as was done by Stalin who gave prizes for mothers of large families.

The revolution is not brought about by the increase in numbers but by the consciousness of the people. To try to increase population would be falling into the absurdity of trying to increase misery in order to try to solve it.

Some say that birth control will delay the revolution. This is a simplification of Marxist theory. . . . The more poverty and misery exist, the greater the probability of

¹Ibid., p. 75, quoting interviews of the International Population Program in Columbia 1966.

revolutions. But it doesn't take into account that the masses of the poor are totally lacking in revolutionary conscience, and that things are not likely to change.¹

The dilemma is agonizing for the Leftist, while he basically disapproves of the birth control solution, he must consider it in some indefinite short run, if only to slow the pace of accelerating misery. Thus the arguments are: Working toward the revolution the more people who want to join the revolution the better. The other is that since the revolution is going to fail, then birth control should be adopted to avoid the vain suffering of the people.²

A positive stance on birth control by the Church would be a mixed blessing. Basic agreement with the Church on population problems and family planning has always been a mild embarrassment to the Left. A move by the Church to a pro-birth control policy would help to consolidate the Leftist opposition to birth control, since such a policy would make consistent the socialistic views of the reactionary character of the Church and the character of population control.

As can be seen the conflicts continue. To add another dimension to the problem would of course complicate the issue, but such is the case; i.e., a feeling of indifference to the whole problem is even more prevalent than the political issues which have been indicated. This indifference is characteristic of a larger majority of the Latin American leaders. The reason for the

¹Ibid.

²Ibid.

indifference is the product of Latin America's demographic history, combined with the virtual absence of Latin American demographic analysis.

CHAPTER III

ECONOMIC ASPECTS OF ACCELERATED POPULATION GROWTH

Education

A number of writers on development place considerable emphasis on the fact that economic progress is not evidenced by increased productions alone, but fundamentally by improvement in the economy's capacity to increase its output on a longer term or sustained basis.

The above observation points to the pivotal position of human resources in the socio-economic progress. This is of particular relevance to Latin America, a region characterized by an abundance of physical resources, but with limited or even scarce capital and the fastest rates of population growth in the world. Under such conditions, the region's swelling population must be equipped with the proper skills, for reasons of social equity as well as economic necessity, for maximum utilization of available resources and to compensate for the scarcity of capital. Therefore, improved education is clearly

a requirement and precondition for the successful achievement of any socio-economic development program which may be designed for the region.

Student-Teacher Ratio

It is generally conceded that the ideal per average teacher is 25 to 30 students.¹ Table 10 shows an average of 33.5 students per teacher. The ratio varies from a high of 51.7 students per teacher in the Dominican Republic, to a low of 20 students per teacher in Argentina. The overall average does not seem to be excessive when compared to ratios of 28:1 in the United States and 29:1 in the European Common Market countries in 1958.² Although it is desirable to have 25:1 student teacher ratio the optimum number of students per teacher will vary according to time and place. It will depend on the ultimate attendance goal, the intellectual level and qualifications of teachers and pupils, the curricula, the quantity, quality and variety of the teaching material, and on the teaching methods. It must be considered, that 48 percent of the teachers in Latin America lack certification. In Nicaragua, for example, only 18.6 percent of the teachers hold certificates, but the proportion rises to 99.5 percent in Argentina.³

It is obvious that the greater the increase in population,

¹OECD, Economic Development and Investments in Education, Washington, D.C., 1961. As cited Inter-Development Bank, Social Progress Trust Fund Sixth Annual Report, 1966, p. 33.

²Ibid.

³Ibid.

the greater the problem of providing children with a sufficient number of teachers. However, growth is not the only obstacle to educational progress. Other factors of an economic and social nature necessarily exert an importance and influence. The non-existent or slight relationship between the rate of population growth and the ratio of pupils per teacher around 1960 seems to support this.

Table 9 provides estimates of future teacher needs according to four combinations of assumptions. The situation varies by country depending on whether the growth of the school-age population, attendance, or the proportion of pupils per teacher is considered. The introduction of an ideal goal for the proportion of pupils per teacher (25:1) adds a new variable which tends to lessen the importance of the growth of school age population.

According to assumption (a) Guatemala will have to increase the number of teachers by 73 percent and Mexico by 107 percent, considering only the growth of the population of school-age children. However, if attendance is also considered, Guatemala will need 358 percent more teachers and Mexico will need an increase of 214 percent. By the same token El Salvador must increase its teachers by 101 percent by assumption (a), while the Dominican Republic must increase its teachers by 79 percent. But if a student-teacher ratio of 25 is considered, assumption (c), the situation is reversed. El Salvador will need 169 percent increase in teachers while the Dominican Republic will need 311 percent increase. Thus it appears

that so far as the need for teachers is concerned, other factors appear to be equally or more important than the growth of its school-age population, regardless of whether it is slow or rapid.

TABLE 9.*

Latin America.
Elementary school teachers needed in 1980,
by country (Based on four assumptions)
Base year: 1960 = 100.

	1980 (a)	1980 (b)	1980 (c)	1980 (d)
Argentina	115	126	103	113
Bolivia	165	276	166	277
Brazil	174	303	256	445
Chile	168	217	280	362
Colombia	167	303	268	485
Costa Rica	158	166	250	262
Cuba	139	121	198	172
Dominican Republic	179	207	411	476
Ecuador	179	245	295	406
El Salvador	201	348	269	464
Guatemala	173	458	212	561
Haiti	186	617	328	1 087
Honduras	198	373	251	471
Mexico	207	314	359	544
Nicaragua	158	266	216	362
Panama	193	241	236	294
Paraguay	160	167	182	190
Peru	189	264	258	361
Uruguay	92	101	120	132
Venezuela	205	286	296	406

- (a) School attendance in 1980 equal to that in 1960. Student-teacher ratio in 1980 equal to that in 1960.
 (b) School attendance in 1980 equal to 98%. Student-teacher ratio in 1980 equal to that in 1960.
 (c) School attendance in 1980 equal to that in 1960. Student-teacher ratio of 25.
 (d) School attendance in 1980 equal to 98%. Student-teacher ratio of 25.
 Source: Table 6.

*Population Dilemma in Latin America, p. 137.

Elementary Education

The general consideration of elementary education in Latin America is characterized, " . . . by a high population growth index, by a school-age population that includes a very high proportion of total population, by a growing demand for means of education, by a lack of resources for suitably meeting such demands, by a considerable proportion of students who drop out of elementary school involuntarily, by a high percentage of students who are without schools and by the fact that young people, with little or no training or deprived of the essential elements of skilled training, are taking part in economic activities."¹ Table 9 illustrates the fact that there are wide variations in the illiteracy rates of the Latin American countries, ranging from 8.6 percent in Argentina to 80 percent in Haiti. Between these extremes, with a rate of illiteracy that coincides with the regional median, is Ecuador with 32.5 percent, Argentina, Chile, Costa Rica, Mexico, Panama, Paraguay, Uruguay and Venezuela are above the median. The other countries are below it. (In this respect Latin America with 33 percent illiterate, compares favorably with other developing regions such as the Near East, with 64 percent; South Asia, with 75 percent; and Africa, with 80 percent.)²

¹Council of the Organization of American States, Final Report (OEA/SERG/IV) CT 487 (Eng.) REV. 2. (Washington, D.C., 1960), p.75. As quoted in Population Bulletin, Population Reference, Inc., (Washington, D.C.), Vol. XVII, No. 2, page 133.

²Inter-American Development Bank, Socio-Economic Progress in Latin America, "Social Progress Trust Fund Sixth Annual Report, 1966." (Washington, D. C.), p. 31.

There are some countries which have had significant reductions in illiteracy such as Venezuela, with a drop from 46.7 percent in 1950 to 20.7 percent in 1964; the Dominican Republic, with 57.1 percent in 1950 and 40 percent in 1961 and Brazil, with 50 percent in 1950 and 38.5 percent in 1960.¹

It is estimated that about 14 percent of the population of Latin America was enrolled in primary schools in 1965. However, enrollments are growing at an annual rate of slightly more than 6 percent, or twice the population growth rate.²

The completion rate or yield of the primary school system is low since a very high percentage of students interrupt their studies or quit before graduation. Most dropouts occur at the end of the first year, and this produces a high proportion of persons with a very rudimentary education who become functional illiterates by failure to use their acquired reading skills. In 1960 the population over 15 years of age in 16 Latin American countries had an average of less than 2.2 years of primary instruction.³

The low level of education contributes to low productivity per worker, particularly in agriculture for the domestic market, and to reducing the possibilities for progress. The Inter-American Bank states that " . . . the per capita product of those employed

¹Ibid.

²Ibid.

³Sylvain S. Lourie, "Educacion Para Hoy o Para Ayer?" UNESCO, The Problems and Strategy of Educational Planning, Paris, 1965. As cited in Ibid., p. 33.

TABLE 10.*

Some Indicators of Primary Education
in Latin America.
(data for years indicated)

<i>Country</i>	<i>Literacy (percentage)</i>	<i>Students per teacher</i>	<i>Primary enrollment</i>		<i>Annual growth rate</i>
			<i>First year (thousands)</i>	<i>Sixth year (thousands)</i>	
Argentina	91.4('60)	20.0('65) ^b	2,947.7('60)	3,251.4('65) ^b	2.0
Bolivia	37.0('64)	22.7('64)	385.9('59)	574.4('64)	8.3
Brazil	61.5('60)	27.9('63)	7,141.3('59)	9,595.0('64)	6.1
Chile	83.6('60)	41.0('64)	1,145.9('59)	1,451.6('64)	4.9
Colombia	62.3('64)	34.6('64)	1,568.6('59)	2,151.2('64)	6.6
Costa Rica	84.0('63)	27.1('63)	184.1('59)	263.7('64)	7.5
Dominican Rep.	60.0('61)	51.7('62)	499.6('61)	577.8('66)	2.9
Ecuador	67.5('62)	37.8('65)	566.8('60)	813.7('65)	7.5
El Salvador	44.0('61)	29.2('64)	286.9('59)	347.5('64)	3.9
Guatemala	38.0('60)	32.5('64)	282.0('59)	373.8('64)	5.8
Haiti	20.0('60)	45.0('65) ^b	238.5('60)	274.4('65) ^b	2.9
Honduras	44.6('61)	28.7('64)	192.5('59)	267.2('64)	6.8
Mexico	72.1('64)	50.2('64)	4,456.6('59)	6,901.8('64)	9.2
Nicaragua	49.7('63)	40.9('64)	135.1('59)	212.5('64)	9.9
Panama	80.3('60)	30.7('64)	155.5('59)	196.5('64)	4.8
Paraguay	77.0('65)	30.2('65)	301.7('60)	362.3('65)	3.7
Peru	60.2('61)	31.9('64)	1,392.0('59)	1,712.1('64)	4.2
Uruguay	90.3('63)	28.6('62)	313.9('59)	350.6('64) ^c	2.3
Venezuela	79.3('64)	34.2('65)	1,074.4('60)	1,397.0('65)	5.4
Total	67.2^d	33.5	23,247.0	31,074.5	6.1

^a Figures in parentheses correspond to years.

^b Provisional.

^c Estimated.

^d Weighted average for population 15 years of age or older in each country.

Sources: Pan American Union, Department of Statistics, and various national sources.

*Inter American Development Bank, Socio-Economic Progress in Latin America. "Social Progress Trust Fund Sixth Annual Report, 1966." (Washington, D.C.), p. 32

in agriculture is estimated to be less than half the average for the economy as a whole, and less than a third of the per capita product of those employed in industry. At the same time, it is estimated that 80 percent of those employed in agriculture are untrained."¹

Secondary Education

Table 11 shows a projection in the secondary school-age population by country from 1960-1980. The Table also points out extreme cases, such as Haiti, where to enroll 30 percent of the 15-19 year olds in secondary school by 1980 would require an enrollment of twelve times the number of students attending in 1960. As in the case of the elementary level, " ... there seems to be no relation between the speed of population growth and projected increases resulting from higher proportions attending schools."²

In 1960, there were 63 percent of the secondary students who were enrolled in academic courses, and 37 percent enrolled in the following: 15 percent in business training; 10 percent in normal schools; 9 percent in industrial training; 2 percent in home economics and 1 percent in agriculture.³ These figures clearly

¹Ibid., p. 33.

²OECD, Economic Development and Investments in Education, (Washington, D. C.), p. 134. (1961)

³Pan American Union, Document 6, Third Inter-American Meeting of Ministers of Education, Perspectivas del Desarrollo de la Educacion en America Latina, (Washington, D. C., 1963), as cited in Inter-American Development Bank, Socio-Economic Progress in Latin America, p. 35.

indicate the shortage of intermediate trained personnel, particularly in industry and agriculture. Private schools are estimated to have almost half of the enrollments of secondary or intermediate students, and should therefore not be underestimated.

TABLE 11.*

Latin America.
Projection of the secondary school-age
population by country, 1960 - 80 (a)

Country	Attendance (per 100)		1960	1965	1970	1975	1980	Incr. 1960- 1980 (1960 =100)
	1960	1980						
Argentina	34.6	60.0	606.0	813.4	1 012.6	1 235.6	1 357.2	224
Bolivia	14.0	45.0	53.6	91.3	139.9	260.8	276.1	515
Brazil	17.7	45.0	1 218.1	2 027.1	3 058.8	4 313.9	5 834.3	471
Chile	31.3	60.0	240.5	331.1	459.3	624.6	763.2	331
Colombia	19.2	45.0	286.0	460.0	674.1	918.7	1 197.0	419
Costa Rica	32.1	60.0	35.1	47.9	65.2	87.6	109.5	312
Cuba	18.2	45.0	121.9	181.8	254.4	339.0	438.8	360
Dominican Republic	7.1	30.0	21.6	44.0	74.2	113.5	163.2	756
Ecuador	15.7	45.0	67.3	111.6	170.4	241.2	334.7	497
El Salvador	14.3	45.0	33.6	64.3	107.5	157.8	200.5	686
Guatemala	6.8	30.0	27.4	58.3	101.5	152.2	214.6	783
Haiti	4.4	30.0	18.6	50.1	94.5	149.6	222.2	1 195
Honduras	8.4	30.0	14.8	30.5	55.2	87.3	116.3	786
Mexico	13.6	45.0	456.7	915.0	1 539.7	2 387.1	3 457.1	706
Nicaragua	7.0	30.0	10.3	18.8	35.4	51.1	69.0	670
Panama	38.0	60.0	38.9	53.0	68.5	91.1	119.3	307
Paraguay	16.8	45.0	27.7	43.0	61.8	85.5	114.8	414
Peru	20.0	45.0	202.2	316.6	454.7	667.7	898.9	445
Uruguay	41.9	60.0	87.5	103.7	115.7	144.8	130.1	149
Venezuela	20.8	45.0	147.5	236.5	361.8	494.8	713.7	484

(a) Under three assumptions: 1) countries that had over 25% school attendance in 1960 would reach 60% in 1980; 2) those that had 10-24% in 1960 would reach 45% in 1980; 3) countries with less than 10% in 1960 would reach 30% in 1980.
Source: Table 1 and UNESCO, *op. cit.*, Table S.2.

*Population Dilemma in Latin America, p. 134.

College Education

Table 12 shows the level and growth of enrollment in Higher Education. As can be seen by the Table, the rate of increase in recent years was 9 percent, with Chile showing the greatest growth in enrollment. In 1965 there were 71,000 university graduates

in Latin America. The distribution of these graduates by course study is as follows: 28.1 percent in medicine; 21.2 percent in humanities; 13.4 percent in law; 13.3 percent in social sciences; 11.3 percent in engineering; 5.6 percent in natural sciences; 4.3 percent in architecture and arts; and 2.8 percent in agricultural sciences.¹

TABLE 12.*

Level and Growth of Enrollment
in Higher Education

<i>Country</i>	<i>Enrollment (thousands)</i>	<i>Year</i>	<i>Enrollment (thousands)</i>	<i>Year</i>	<i>Annual growth rate</i>
Argentina	174.5	(1960)	246.4	(1965) ^a	7.2
Bolivia	8.5	(1959)	11.0	(1964)	5.3
Brazil	96.7	(1960)	157.8	(1965)	10.3
Chile	21.7	(1959)	42.7	(1964)	14.5
Colombia	22.7	(1960)	37.8	(1965)	10.7
Costa Rica	4.5	(1959)	5.1	(1964) ^b	2.5
Dominican Rep.	3.3	(1959) ^b	4.9	(1964)	8.2
Ecuador	8.3	(1960)	12.5	(1965)	8.5
El Salvador	2.3	(1959)	3.6	(1964)	9.4
Guatemala	5.3	(1960)	7.7	(1965)	7.8
Haiti	1.2	(1960)	1.5	(1965)	4.6
Honduras	1.7	(1959)	2.2	(1964)	5.3
Mexico	86.9	(1960)	134.4	(1965)	9.1
Nicaragua	1.3	(1960)	2.5	(1965)	12.1
Panama	4.0	(1960)	6.8	(1965)	11.2
Paraguay	3.1	(1959)	5.1	(1964) ^a	10.5
Peru	31.8	(1959) ^b	50.0	(1964) ^a	9.5
Uruguay	10.5	(1959) ^b	15.1	(1964) ^b	7.5
Venezuela	26.5	(1961)	45.8	(1966) ^a	11.6
Total	514.8		792.7		9.0

^a Provisional.

^b Estimated.

Sources: Pan American Union, Department of Educational Affairs, and various national sources.

*Inter-American Development Bank, Socio-Economic Progress in Latin America, p. 35.

¹Ibid., p. 36.

From the above percentages it is clear that the traditional professions; i.e., law, humanities, medicine, etc., received a high proportion of the graduates, whereas as in intermediate education, there was a minimal contribution to the agricultural sector in which almost half of the Latin American labor force is employed.

Table 13 is a summary Table of the three levels of education, Primary, Intermediate, and Higher and shows coefficients of total enrollment. "Percentages exceeding 100 percent at the primary level are explained by the fact that enrollments also include older and younger children and even adults in literacy classes. Thus, part of absenteeism is concealed, especially in countries which have reduced the age limits of the respective groups. The distortion is minor at other levels."¹

Assuming the conditions associated with economic development are dependent on the educational preparation of the population, the immediate question of how is education affected by fertility becomes significantly important. The United Nations Economic Commission for Latin America defines the status of this problem, in that " . . . despite progress in the rate in literacy the absolute number of adult illiterates is still increasing."

¹Ibid.

²United Nations Commission for Latin America, Population Trends in Latin America in Relation to Economic Development and Social Policy (E/CN12/583) 1960, p. 9. As quoted in Population Bulletin, Population Reference Bureau, Inc., Washington, D. C., Vol. XVIII, No. 6., Oct. 1962, p. 132.

TABLE 13.*

Total Enrollment as a Percentage of
Total Population and Enrollment by
Levels in Relation to
Corresponding Age
Groups ^a

<i>Country</i>	<i>Total</i>	<i>Primary</i>	<i>Intermediate</i>	<i>Higher</i>
Argentina	19.4	103 ^b	40	13
Bolivia	15.7	95	18	4
Brazil	15.0	125 ^c	22	3
Chile	20.7	102	33	6
Colombia	15.8	109 ^d	22	4
Costa Rica	22.6	121	25	5
Dominican Rep.	16.0	91	11	2
Ecuador	17.2	98	15	3
El Salvador	15.3	89	16	1
Guatemala	10.5	60	9	2
Haiti	6.5	39	5	— ^e
Honduras	13.4	84	7	2
Mexico	18.6	107	17	4
Nicaragua	14.5	87	12	2
Panama	21.6	105	33	8
Paraguay	20.4	118	15	4
Peru	20.3	97	23	8
Uruguay	18.5	102	39	9
Venezuela	19.7	108	28	7
Latin America	16.8	104	22	5

^a 7 to 12 years in primary, 13 to 18 years in intermediate and 19 to 22 years in higher.

^b 6 to 12 years.

^c 8 to 11 years.

^d 7 to 11 years.

^e Less than one-half of one per cent.

Source: UNESCO/MINEDECAI, *Informe de la Comisión de Evaluación del Proyecto Principal para la Extensión y Mejoramiento de la Educación Primaria en América Latina*.

*Inter-American Development Bank, "Socio-Economic Progress in Latin America," Social Progress Trust Fund Sixth Annual Report 1966, p. 37.

In Latin America, education is a function of government. The financial burden of education in the countries with high fertility is heavier for the government's budget than in countries

with lower birth rates. Table 14 indicates the level of expenditure by Latin American governments for education as a percentage of their total expenditures. Also shown are the significant per capita expenditures and the per student expenditure. In 13 Latin American countries which were studied it was determined that: (1) illiteracy is positively correlated with fertility, and (2) fertility is inversely correlated with the primary school enrollment ratio.¹

In any society whether it be a developed (technologically) or a developing nation the population is the main factor of production, consumption, distribution and allocation of resources. Therefore, the economic development of a country is dependent on not only the quantity but the quality of its human resources; i.e., the labor force. One of the principle ways to improve the quality of the labor force is by improving and promoting educational techniques.

¹Population Reference Bureau, Inc., Population Bulletin, Vol. XVIII, No. 6, p. 132.

TABLE 14.*

Indicators of the Level of Expenditures
for Education by Central Governments
of Latin American countries
(1965, unless otherwise indicated)

<i>Country</i>	<i>Expenditures for education as percentage of total expenditures</i>	<i>Per capita expenditure (1963 dollars)</i>	<i>Per student expenditure (1963 dollars)</i>
Argentina	17.2	7.56	39.73
Bolivia ^a	27.5	4.27	20.28
Brazil ^b	7.3	2.24	15.17
Chile	10.6	8.85	39.62
Colombia	9.9	2.56	16.63
Costa Rica	24.4	11.51	49.25
Dominican Rep.	13.3	5.03	28.44
Ecuador	15.1	4.40	23.47
El Salvador	22.9	7.17	50.36
Guatemala	14.3	4.46	51.30
Haiti ^c	11.6	0.65	9.35
Honduras	19.7	5.82	42.90
Mexico ^d	23.4	8.19	39.20
Nicaragua	16.6	5.86	37.45
Panama	23.7	18.94	89.06
Paraguay	16.3	3.17	15.21
Peru ^e	27.1	14.00	73.04
Uruguay	26.5	23.17	126.31
Venezuela	11.9	20.43	102.71
Latin America	—	6.13	35.62

^a 1966.

^b 1964.

^c On basis of budgeted expenditures for fiscal year 1966-1967.

^d On basis of budgeted expenditures for 1965.

^e Public sector.

Sources: Based on information supplied directly to the IDB by countries or obtained from official government publications.

*Inter-American Development Bank, Socio-Economic Progress in Latin America, p. 39.

Agriculture

Agricultural production in Latin America has increased in the past 15 years at a much slower rate than other sectors of the region's economy. Increases in per capita farm output for 1960-1965 were still considered to be modest, with little improvement in farm incomes and rural employment for 1966.

The lag in farm output is particularly significant because of the large proportion of the region's economically active population engaged in farming, and the probability that agriculture will continue to be the cornerstone of the region's economy for some time. Nearly 50 percent of the labor force is in farming, which contributes only slightly more than one-fifth of the GNP. Output per man in agriculture is but a third of that of industrial workers or service personnel.¹ This results in extremely low levels of rural income, which are reflected in a very low standard of living; typified by poor housing, sanitation and health conditions, and inadequate diet.

It has been estimated that to meet the requirements of a rapidly expanding population, the increased demand induced by increased incomes, and a rising level of exports, total agricultural output should grow by 5 percent a year in Latin America.² In 1965

¹Inter-American Development Bank, Socio-Economic Progress in Latin America, p. 42.

²Ibid. Targets established at Punta del Este, April, 1967.

five countries registered growth of 5 percent or more, while three others had increases of 4 to 5 percent. On the other hand, " . . . agricultural performance of some of the other countries was poor. In Argentina, for example, farm production increased by only 1.5 percent annually in 1963-65, and in Uruguay the rate was 0.6 percent. In Chile, the Dominican Republic, and Paraguay, agricultural production rose by little more than 2 percent in the same period, while it actually declined in Haiti by an estimated average of more than 1 percent a year."¹

In order to meet the expanding requirement of food production, there will have to be substantial increases in the use of fertilizers, pesticides, increased agricultural credit and a general expansion of the agricultural extension service to assist the farmers in the implementation of the inputs. To insure continued increased production there will have to be greater emphasis placed on agriculture education and training.

In developing a country's agricultural program the planners and government officials will have to give greater consideration to incentives for farmers. Price policy is very important at this stage of the development process. The farmer must remain solvent. He cannot be expected to produce at a loss. Price relationships are production incentives only where farmers have:

- (1) considerable degree of freedom of action from cultural restraints;

¹Ibid., p. 43.

- (2) through research, provide available production alternative opportunities, appropriate off-farm services to distribute the farm inputs, and to market process and distribute farm products, and
- (3) an opportunity to operate primarily in a market economy rather than a subsistence economy.¹

Degree of Freedom of Action

General cultural influences include traditions and values, social organization, and particularly, arrangements with respect to land ownership and tenure. They determine whether he is under pressure to adhere to traditional ways or if he is free to innovate. Traditions, and values, generally are not subject to direct manipulation; instead they change under the impact of new opportunities and new pressures. The laws governing land ownership and tenancy determine the distribution of political power, and thereby influence policies and programs that can aid or inhibit agriculture development; they affect current production decisions of farmers by establishing the basis per division of the harvest and the sharing of production costs; they affect farmers' incentives to invest in farm improvement; they concentrate or divide decision-making on farm operations. The legal structure determining farm ownership and land tenure can and must be changed in many countries before the potential for agricultural development can be fully

¹President's Science Advisory Committee. The World Food Problem, Vol. II. A report of the Panel on the World Food Supply. The White House, May 1967. (U. S. Government Printing Office, p. 505.

realized.¹

Opportunities for Farmers to Adopt More Productive Methods

A number of the off-farm services have already been mentioned but generally they arise from private or public programs undertaken to speed the progress of agriculture and do not necessarily pertain to incentives.

Transportation and storage facilities are probably the best example. Agriculture productions can only be effective if there is a suitable network of transportation facilities in which to move products from farm to market.

The transportation facilities must be well-articulated in which each part of the system is effectively linked to the next. Elements in such a system include a widespread network of access roads connecting farms with local collection points or market towns, intermarket and intercity highways, railways, or riverports of heavier carrying capacity, major transport connections to seaports, adequate access to international seaborne transport, and effective terminal and transfer facilities between each of the links in the system to handle the agricultural products.² Improved public storage facilities are also necessary to the farmer to avoid losses³ of grains after harvest, improve quality, and provide a

¹Ibid., p. 504.

²Ibid., p. 571.

³Ibid., p. 539. Losses caused by microorganisms, insects, rodents and other factors are not accurately known, but distribution of 10 to 30 percent of some crops has been reported in certain areas.

more stable market by avoiding gluts and shortages.

Market Economy vs. Subsistence Economy

Peasant farmers have reacted positively to increasing yields by virtue of price changes for commercial crops (grown primarily for the market) and of subsistence crops (grown for consumption by the farm family) in regions that are already market-oriented. In other areas which are not market-oriented or where all the previous preconditions do not exist, there is little evidence that the peasant farmer will increase his yield because of a change in price. The unfortunate tendency in most developing countries is to base pricing on the need for low cost food in the cities rather than on the production incentive needs of farmers.

Relationship Between Food Demand and Overall Growth

There are certain relationships which exist between the demand for food and the overall demand for goods and services in any economy. Purchasing power must be available in order for an "effective demand" for food to exist. In other words, aggregate income must grow at a rate which will permit consumers to purchase the projected food requirements. "The parameter which relates the relative change for food demand to the relative change in income (or Gross National Product) has been coined the income elasticity of demand for food. It measures the percentage change in food demand

as a function of a percentage change in overall income (GNP). Thus, if food demand were to increase by 5 percent following a 10 percent rise in GNP, the income elasticity of demand for food would be equal to one-half."¹ The elasticity is subject to change based upon conditions at any given time. The greater the change the less reliable the elasticity coefficient is as an indicator for projecting food consumption.

Likewise, on the production or supply side, there are relationships which tie food and agricultural output to overall production. The production of food crops, as stated earlier, necessitates the use of manufactured inputs such as fertilizer, pesticides and farm machinery which must be imported or produced domestically. If they are imported, the economy must generate sufficient exports and/or be able to rely on a net inflow of foreign assistance and private capital to pay for the imports. If these inputs are produced domestically or paid for by industrial exports, the non-agricultural sectors must expand at rates consistent with the needs of the agricultural sector. At the same time, various non-agricultural sectors and activities are dependent on agricultural raw materials and, in some cases, food products. For every productive sector or activity, there is a set of input-output relationships which in a technological way link the whole set of inputs (such as raw materials, foodstuffs, capital goods, labor)

¹Ibid., p. 643. Disposable income is usually considered in economics analysis as the basis of elasticity calculations.

required for any given level of output.

Because of this interdependence which exists between food demand and overall income, on the one hand, and between agriculture (food) output and total output (GNP), on the other, the region demand and supply of foodstuffs cannot be considered independently from overall economic growth.¹

Required Growth in Income

Given the growth rates of food demand,² it is possible to say something about the overall (GNP) growth rates.

" . . . economists tend to relate food demand to income causally. Here the causality is reversed: a 'critical' rate of growth of food demand has been estimated on demographic and nutritional grounds and the problem then is to infer the growth of income consistent with the 'needed' food demand."³

The two determinants of food demand are: the population effect and the income effect. At the same nutritional levels, a given rate of population growth will generate an equivalent rate of increase for food consumption. Increase in the per capita income level leads to an additional demand for food. The per capita

¹Ibid.

²Ibid., p. 647. From evidence presented thus far, it would appear that annual compound growth rate of aggregate food demand in the developing countries would be from 3.6 to 4 percent over the period 1965 to 1985.

³Ibid.

income elasticity of demand for foodstuffs measures the relative (percentage) change in per capita income. Thus, the rate of change in aggregate food demand is equal to the sum of the population growth rate and the product of the per capita income elasticity for food and the relative change in per capita income.

In symbols:

$$f = p + \epsilon y$$

where, f = (annual) rate of growth of aggregate food demand
 p = (annual) rate of growth of population
 ϵ = (per capita income elasticity of demand for food
 y = (annual) rate of growth in per capita income (GNP)¹

There is empirical evidence available on the historical magnitude of ϵ . For example, during the period from 1950 to 1960 the parameter ϵ , amounted to 0.51 in Brazil.² Out of the 26 developing countries surveyed by the U. S. Department of Agriculture, 11 showed a per capita income elasticity of less than 0.60 with 15 ranging between 0.60 and 0.80.³ It is clear that elasticity drops as per capita income increases. Given this decline in elasticity as a function of per capita income growth, it is possible to estimate that a range of elasticity of 0.5 to 0.7⁴ could be used for projection purposes. Taking the percentage

¹Ibid., p. 648.

²Ibid. Citing U.S.D.A., Changes in Agriculture in 26 Developing Nations (1965), p. 4.

³Ibid.

⁴Ibid. One assumption which is made explicit here is that no substantial change will take place between food and non-food prices. Two forces may operate in opposite directions to affect this last ratio.

of population growth, and per capita income on Table 3 , Chapter 1 and given the desired rate of growth of foodstuffs of 4 percent and entering these figures into the equation, it is then possible to solve for y, the annual growth rate in income needed to generate the level of food demand desired for a projected period of time.

The President's Science Advisory Committee utilized this analysis on a world-wide basis of developing countries and concluded that " . . . it appears that the nutritional and demographic projection calls for an annual growth rate of food demand of about 4 percent over the next twenty years. This rate of growth, in turn, implies a growth rate of per capita income for the developing world of approximately 2.2 percent and an annual rate of increase of GNP of approximately 5 percent between 1965 and 1985. Thus, it might be concluded on the basis of the present analysis -- looking at the world food problem from the overall demand side -- that a growth rate of aggregate GNP of 5 to 5.5 percent would be consistent with the 'critical' food requirements."¹

The comments and analysis have general application to Latin America since its economic and demographic indicators are very similar to other developing nations of the world.²

Agricultural development may be encouraged by the ratio of farm prices to non-farm prices going up as an incentive device. On the other hand, increased efficiency in farm production may tend to reduce the ratio of farm prices to non-farm prices.

¹Ibid., p. 649.

²Some Latin American countries were actually included in the study upon which the committee based its analysis; e.g., Brazil, Mexico, Venezuela.

Latin America has experienced an average 4.7¹ percent change in its total Gross National Product between 1957-1958 to 1965-1966. Eight countries; El Salvador, Guatemala, Nicaragua, Brazil, Mexico, Panama, Peru, and Venezuela have all exceeded 5 percent during the same period of time. Therefore, the acceleration in the growth rate from 4.7 to 5-5.5 percent which is required for, and consistent with, the food projections (on the demand side) does not appear impossible.

The "needed" food projections can be used as the basis of a demographic theory of economic development which maintains that a necessary precondition to development is a reduction in the mortality rate, particularly the infant mortality rate.² However, a causal relationship between infant mortality is presented indicating that the number of children desired goes down as the infant and child mortality declines. It has been stated that, "We are faced with the apparent paradox that a reduction in mortality should reduce rather than raise the rate of population growth."³

Nutrition

Nutrition in a society is one of the primary factors toward

¹"Gross National Product, Growth Rates and Trend Data by Region and Country," Agency for International Development, Office of Program Coordination, Washington, D.C., March 31, 1967.

²Ibid., p. 644. The nutritional requirements are based partly on the amount and kind of food necessary for lowering the (infant) mortality rates.

³Ibid., p. 35.

improvement of the quality of its labor force and ultimately its productivity.

The International Labor Office analyzed some of the factors which contributed to the quality of a labor force. After noting great variations among countries in the degree to which a given investment increased economic growth, they analyzed qualitative differences of the labor force. The four factors which were measured, and their relationships were: education, health, housing, and social security. The results showed that "health, and more specifically per capita caloric consumption, proved to be the single factor most closely related to the observed differences in economic growth."¹

The Food and Agriculture Organization now reports "that those countries with the lowest per capita daily protein (and caloric) consumption are also those with lowest productivity."² Malnutrition decreases a worker's productivity. The body becomes weak from the lack of proper nutrients, and protects itself by avoiding the expenditure of unnecessary energy. The results are apathy, lethargy and lack of initiative -- characteristics commonly found in undernourished groups in protein-deficient countries.

¹W. Galenson and G. Pyatt, The Quality of Labour and Economic Development in Certain Countries, (International Labour Office, Geneva, 1964), pp. 5-23. Cited by Carl E. Taylor and Marie-Francoise Hall, "Health, Population, and Economic Development," Science, Vol. 157, No. 3789, Washington, D.C., Aug., 1967, p. 654.

²Alan D. Berg, "Malnutrition and National Development," Foreign Affairs, Vol. 46, No. 1, October 1967, p. 128.

Heretofore, this apparent sluggishness has been attributed to laziness, indolence or other so-called 'ethnic traits.'¹

An interesting demonstration of this relationship was cited by Alan Berg. During the construction of the Pan American Highway the local laborers' output was disappointing. However, it was quickly remedied with the introduction of three well-balanced daily meals; within a few months, workers averaged an increase in concrete paving from 1.8 to 5.9 cubic yards per day.²

Malnutrition also lowers a worker's resistance to disease thereby increasing the rate of his absenteeism from his job. Furthermore accident rates are higher among those who tire quickly because of malnutrition. The medical costs necessary to care and treat the effects of malnutrition -- either through hospitals, outpatient treatment, or health centers -- are many times greater than the cost of providing the necessary nutrients to prevent malnutrition. In Guatemala, it is estimated that the cost of 90 days of hospitalization for each case arising from inadequate nutrition is \$600, compared to an annual cost of \$7 to \$10 to prevent the malnutrition.³

Limited life expectancy brought about by malnutrition, limits the number of productive years. Dr. Eugene Cambell calculates that a typical worker in Southeast Brazil will produce nearly five times as much during his lifetime, as a result of improved health and increase average life expectancy, as the average

¹Ibid.

²Ibid.

³Ibid.

person born and living in nutritionally deficient Northeast Brazil.¹ Where life expectancy is reduced because of malnutrition, the cost to society for education and other supporting expenses in the pre-productive years becomes proportionately more costly per year of productive output.

Although malnutrition is brought about by a number of dietary deficiencies, the most serious is the inadequacy of protein - the nutrient which is critical for both physical and mental growth. Protein needed cannot be separated from general food intake - but once the minimum number of calories is available to sustain life, it is the quality of the food which becomes all-important.

Most of the population in developing countries get protein and most of its calories from grain. Thus for these people, the central protein problem is the provision of more protein by increase of agricultural production, by reduction of the present waste, by better distribution, by improvement of the nutritional quality of the grain protein by genetic means and by fortification with essential amino acid, lysine (which is low in all major grains) or with protein concentrates from oil, seeds, fowl and fish.² The Food and Agriculture Organization of the United Nations, in cooperation with other interested agencies, estimates the minimum daily

¹Ibid.

²President's Science Advisory Committee, The World Food Problem, Vol. II, p. 300.

per capita requirements of the region at 2,550 calories and 71 grams of protein of which 25 should be of animal origin.¹

The statistics on the availability of food are useful in study nutrition but not all food included in the statistics is for human consumption (that is livestock feed) has also been included as it is based upon grains as well as animal origin. Furthermore, there is so great a disparity between the diet of different income groups that averages do not really reflect the degree of undernourishment prevalent among the low-income groups, which constitute the majority in many countries.

"Samplings made among low-income sectors in Brazil, Chile, Columbia, Ecuador, Mexico, and Peru show their actual consumption of food was much lower than the average established on the basis of supply data."²

Table 15 presents the daily per capita supply of calories and proteins for Latin America. From this Table it is clear that all of the countries listed failed to reach all the required minimums of calories and proteins except Argentina and Uruguay which exceeded both the minimums for calories, proteins, and proteins of animal origin. Mexico exceeded the minimum for calories and quantity of proteins; Brazil and Paraguay exceeded the minimum for calories and Chile exceeded the minimums for

¹Inter-American Development Bank, Socio-Economic Progress in Latin America, "Social Progress Trust Fund Sixth Annual Report, 1966," p. 26.

²Ibid., p. 27.

proteins and proteins of animal origin.

From these statistics, Latin America nutrition gap is extremely serious. Rafael Moreno, vice-president of the Agrarian Reform Corporation of Chile, has been reported as stating that in many instances " . . . the level of life among the rural population is subhuman. . . ." He continued by saying of every 1000 births, "140 children die in the first year of life because of malnutrition or of diseases associated with malnutrition."¹

In Northeast Brazil there is a comparable pattern of malnutrition. It is estimated that infant mortality rates are as high as 300 to 600 per 1000 births.² "While malnutrition is not listed as a cause of death, it is the general medical opinion that many of these deaths are due to the malnourished condition of the children. A third of the people have a daily intake of less than 1500 calories."³

So long as there is a burgeoning population and an insufficient amount of food -- not only will there be reduced or ineffective productivity -- but there is also a perfect breeding ground for political upheaval and social unrest.

---and it shall come to pass that when they shall be hungry, they shall fret themselves, and curse their king and their God, and look upward.

ISAIAH 8:21

¹Population Council, Population Bulletin, Vol. XXIII, No. 3, p. 61.

²Ibid., p. 61. Citing Representative Henry Reuss (D-Wis.), "Agricultural Development in Latin America."

³Population Council, quoting Representative Reuss.

TABLE 15.*

Per Capita Daily Supplies of Calories
and Proteins in Latin America.

<u>Country</u>	<u>Period</u>	<u>Calories</u>	<u>Total proteins (grams)</u>	<u>Proteins of animal origin (grams)</u>
Argentina	1963-1964	2,660	77.2	52.9
Bolivia	1961-1963	1,810	47.3	11.5
Brazil	1963-1964	2,850	68.6	18.9
Chile	1963-1964	2,370	79.4	29.0
Colombia	1963-1964	2,130	48.6	23.6
Costa Rica	1963	2,460	53.8	20.3
Dominican Rep.	1959	2,040	49.7	19.2
Ecuador	1960-1961	1,890	48.5	17.0
El Salvador	1963-1964	2,120	58.0	14.9
Guatemala	1963-1964	2,160	58.0	8.7
Haiti	1963-1964	*	*	*
Honduras	1963-1964	2,070	53.0	12.3
Mexico	1963-1964	2,640	73.4	23.8
Nicaragua	1963-1964	*	*	*
Panama	1963-1964	2,270	59.3	25.1
Paraguay	1963-1964	2,580	66.0	23.7
Peru	1963	2,240	57.1 ^a	15.3
Uruguay	1961	2,970	94.5	61.9
Venezuela	1963-1964	2,360	58.2	23.3

* Data unavailable

^a 1963-1964 period

Source: Adapted from Food and Agriculture Organization of the United Nations,
The State of Food and Agriculture, 1966 (Rome, 1966).

* Inter-American Development Bank, Socio-Economic Progress in Latin America, p. 27.

Urbanization

The world over, cities lure young people from rural areas. Some of the motivating factors prompting migration to cities may be more potent in Latin America than elsewhere. Shortage of productive land, rural poverty and civil strife provide the push from the country, while high prestige of urban life, urban orientation of rural schools, compulsory military service, higher levels of consumption, greater employment opportunities, urban amusements and the influence of friends and relatives provide the pull. The combination of these forces account for a general migration from the rural to the urban areas. It is estimated that between one half and four-fifths of the increase in the number of people currently living in the cities is due to internal migration.¹

In industrialized nations the growth of cities has generally been associated with the process of economic development. As industrial activity intensified and agricultural productivity rose, a displacement of the population from rural to urban areas occurred, in adaptation to the needs of a changing economic system.

In Latin America, however, the accelerated growth of urban populations is in great measure a consequence of the patterns of

¹Population Bulletin, Population Reference Bureau, Inc. Vol. XIV, no. 5, (Washington, D.C., Aug., 1958), p. 98.

fecundity and mortality. The rate of natural increase is greater in rural areas because rural fertility is significantly higher than urban.¹ On the other hand, low productivity of agriculture and the excess of population in relation to effectively exploited resources have created conditions which, as stated previously, push the rural inhabitants to seek better opportunities in the urban centers. This movement could have led to the settling of uncolonized areas, but it gravitated instead toward the cities. Nevertheless, the movement of population has had no clear, direct relationship to the level of economic development and modernization.²

Table 16 illustrates this movement from the rural areas to the urban centers.

The unique feature in Latin America's Urbanization is the high concentration of people in relatively few metropolitan areas, usually the National Capitols. According to Dr. Harley L. Browning, of the University of California, the Spanish Colonial system spawned the rise of capital cities at the expense of a more diffuse

¹Robert O. Carleton, "Tendencias y diferencias de la fecundidad en la America Latina," Series DE/CN. CELADE.D13 Santiago, Chile 1965, as cited by Carmen A. Miro, "The Population of Twentieth Century Latin America." J. Mayone Stycos and Jorge Arias (Ed.), Population Dilemma in Latin America. (Washington, D.C., Potomac Books, Inc., 1966), p. 21.

²United Nations, Conclusiones del Informe Provisional del Seminario Sobre Problemas de Urbanizacion en America Latina, E/CN.T2/URB.26, Santiago, Chile 1959, as cited by Carmen A. Miro, Population Dilemma in Latin America, p. 21.

TABLE 16.*

Latin America.
Percentage of population
by size of city.

Country	Year of census	Rural areas	Populated places over 20,000	20,000 to 100,000	More than 100,000 inhabitants
Tropical South America					
Brazil	1920	88.7	11.3	2.6	8.7
	1940	84.7	15.3	4.6	10.7
	1950	79.8	20.2	7.0	13.2
	1960	71.9	28.1	9.3	18.8
Colombia	1938	87.1	12.9	5.7	7.2
	1951	77.8	22.2	7.5	14.7
Peru	1940	85.8	14.2	5.8	8.4
	1961	71.1	28.9	10.4	18.5
Venezuela	1936	83.8	16.2	5.9	10.3
	1941	81.9	18.1	6.3	11.8
	1950	68.1	31.9	11.6	20.3
	1961	52.8	47.2	17.2	30.0
Ecuador	1950	82.2	17.8	3.2	14.6
	1962	73.1	26.9	8.0	18.9
Bolivia	1900*	91.4	8.6	5.5	3.1
	1950	80.4	19.6	9.0	10.6
Continental Central America					
Mexico	1940	81.9	18.1	7.9	10.2
	1950	75.9	24.1	8.9	15.2
	1960	70.4	29.6	11.0	18.6
Guatemala	1950	88.8	11.2	1.0	10.2
El Salvador	1930	91.0	9.0	9.0	—
	1950	87.1	12.9	4.2	8.7
	1961	82.3	17.7	7.5	10.2
Honduras	1940	93.9	6.1	6.1	—
	1950	93.1	6.9	6.9	—
	1961	88.4	11.6	4.4	7.2
Nicaragua	1920*	95.6	4.4	—	4.4
	1940*	92.5	7.5	—	7.5
	1950	84.8	15.2	4.9	10.3
	1963	77.0	23.0	7.8	15.2
Costa Rica	1927	80.7	19.3	19.3	—
	1950	77.7	22.3	—	22.3
	1963	76.0	24.0	—	24.0

*Population Dilemma in Latin America, p. 14.

TABLE 16 (Continued)*

Country	Year of census	Rural areas	Populated places over 20,000	20,000 to 100,000	More than 100,000 inhabitants	
Panama	1930	77.1	22.9	22.9	—	
	1940	73.4	26.6	7.1	19.5	
	1950	73.2	26.8	6.5	20.3	
	1960	66.9	33.1	7.7	25.4	
Temperate South America						
	Argentina	1914*	59.5	40.5	7.9	32.6
		1947	51.7	48.3	11.2	37.1
	1960	42.5	57.5	12.0	45.5	
Chile	1907*	72.3	27.7	10.6	17.1	
	1920	72.0	28.0	9.5	18.5	
	1930	67.5	32.5	11.7	20.8	
	1940	63.6	36.4	13.3	23.1	
	1952	57.2	42.8	14.3	28.5	
	1960	45.3	54.7	21.4	33.3	
Uruguay	1963	—	—	—	—	
Paraguay	1937*	88.8	11.2	—	11.2	
	1950	83.5	16.5	—	16.5	
	1962	—	—	—	16.8	
Caribbean						
	Cuba	1919	75.7	24.3	9.6	14.7
		1931	72.4	27.6	9.1	18.5
		1943	69.3	30.7	10.8	19.9
		1953	64.5	35.5	12.5	23.0
Haiti	1950	94.9	5.1	0.8	4.3	
Dominican Republic	1920	96.5	3.5	3.5	—	
	1935	92.9	7.1	7.1	—	
	1950	88.9	11.1	2.6	8.5	
	1960	81.3	18.7	6.5	12.2	
Puerto Rico	1920	90.8	9.2	9.2	—	
	1930	85.9	14.1	5.8	8.3	
	1940	81.2	18.8	8.7	10.1	
	1950	73.0	27.0	10.9	16.1	
	1960	72.0	28.0	4.7	23.3	

* "Demographic aspects of urbanization in Latin America," by Division of Population, Department of Social Affairs, United Nations, published in *The Urbanization in Latin America*, UNESCO, 1962.

Source: Excluding above exception, John D. Durand and César Peláez, "Patterns of Urbanization in Latin America," document submitted to the Milbank Memorial Foundation's Conference, New York, 1965.

pattern of urban growth:

The Spanish colonial system provided a congenial environment for the rise of these cities. Under a centralized government such key institutions as the viceroy, the audiencia, the cabildo, the consulado, the archdiocese, and the university were all located in one urban center --- Anybody who was somebody, or who wanted to become somebody, found it mandatory to locate in the capital.¹

This concentration of population in the capital cities is illustrated in Table 17. In six countries the capital city contains one-fifth or more of the national population; 45 percent in Uruguay, 33 percent in Argentina, 25 percent in Chile and Panama, 24 percent in Costa Rica and 21 percent in Cuba.

TABLE 17.*

Latin America.
Population and growth of
the capitals. ¹

City	Country	Year	Population	Percentage of		Est. growth in last inter-census per (%)	
				Total population	Urban population	Cap.	Coun.
Buenos Aires	Argentina	1960	6,763,000	33.8	58.8	2.9	1.7
Mexico City	México	1960	4,666,000	13.4	26.4	4.9	3.0
Rio de Janeiro ²	Brazil	1960	3,233,000	4.5	16.2	4.3	3.0
Santiago	Chile	1960	1,907,000	25.9	47.3	4.2	2.5
Havana	Cuba	1960	1,400,000	21.8	—	2.7	—
Lima	Peru	1961	1,116,000	14.5	50.2	4.9	2.4
Caracas	Venezuela	1961	1,339,000	17.7	37.6	6.8	3.9
Bogotá	Colombia	1964	1,329,000	—	—	6.8	—
Montevideo	Uruguay	1963	1,173,000	45.9	—	—	—
Quito	Ecuador	1962	511,000	11.2	41.4	5.2	3.1
San Juan	Puerto Rico	1960	432,000	18.4	65.6	1.9	0.6
Santo Domingo	Dominican Republic	1960	367,000	12.2	65.1	7.3	3.4
San José	Costa Rica	1963	318,000	24.0	100.0	4.6	3.8
Asuncion	Paraguay	1962	305,000	16.8	—	3.3	2.6
Panama City	Panama	1960	273,000	25.4	76.7	5.2	2.9
San Salvador	El Salvador	1961	256,000	10.2	57.6	4.3	2.8
Managua	Nicaragua	1963	226,000	15.3	66.3	5.4	3.3
Tegucigalpa	Honduras	1961	134,000	7.1	61.5	5.9	2.8

¹ Excluding Guatemala, where census results are unknown (1961); also Bolivia and Haiti, which have not had a census since 1950. The information covers, in general, the metropolitan area of the city.

² Included, as Rio was the capital until recently.

Sources: John D. Durand and César Peláez, *op. cit.*; Carmen Miró, etc. The figures on Havana were obtained from "Statistical Data on the Main Characteristics of the Cuban Population," Central Planning Board, General Office of Statistics, Havana, May, 1965.

*Population Dilemma in Latin America, p. 21.

¹Population Bulletin, quoting Harley L. Browning, "Recent Trends in Latin American Urbanization," The Annals, pp. 84-93.

One out of six Venezuelans, Puerto Ricans, and Paraguayans live in their respective capitols.

If 20 percent of the United States population lived in Washington, D.C., it would be a super-megalopolis of some 40 million people!

With the continuous flow of rural population arriving into the cities full of hope and desires, most of them are met by all of the ills of urbanization which has not kept pace with the accelerated population growth; poor or inadequate housing, little or no running water, inadequate sewage disposal systems, overcrowded and limited education facilities, little or no employment for unskilled workers and increasing public health problems. As a result, the great slums of Latin American cities -- in Chile, the Callampas or "mushroom towns"; in Brazil, the Favelas; in Argentina, the Villas Miserias -- are growing faster than the cities themselves. In Lima, 10 percent of the population lived in slums in 1958. By 1964, the percentage was up to 20 percent. In Rio, the slum population rose from 400,000 to 900,000 between 1947 and 1961, accounting for 38 percent of the city's total. In Caracas, over 35 percent of the inhabitants live in improvised housing. In Recife, Brazil, the proportion is up to 50 percent. The slum problem is not confined to just the large cities, e.g. in some smaller Latin cities, the slums have almost swallowed up the city; Chimbote, Peru, slum dwellers make up 70 percent of the populace; in Buenaventura,

Colombia, the population is almost 80 percent.¹

The United Nations Report on the World Social Situation summarizes and provides tentative conclusions on the Urbanization in Latin America by stating:

a. It is easy to point to urgent needs for social action in the Latin American cities. The cities, however, already absorb a disproportionate share of government social expenditure, and the Governments are under constant pressure to discriminate in their favour. At the same time, some of the most unhealthy aspects of urban growth in Latin America derive from the static and apathetic rural poverty, including the overflow of cheap labour which keeps urban wages down, the inadequacy of the urban food supply, and the lack of economic integration between city and countryside. Urban social problems, and the solution to these problems, must therefore be viewed in the larger context of rural-urban relationships.

b. Rapid urban growth can be expected to continue in the foreseeable future in Latin America. In many areas, in fact, rural migration is evidently desirable to relieve underemployment and counteract fragmentation of land holdings. It may be possible, however, to take measures to encourage the wider distribution of urban growth by favouring the establishment of industries in smaller centres rather than the capital and, in general, by regional planning. The larger cities at present suffer from extremely bad public transport, chronic shortages of water and electricity, and expensive and inefficient systems of food supply. Many of these deficiencies can be met more easily and cheaply in medium-size cities than in mammoth agglomerations. ...

¹Population Bulletin, Population Reference Bureau, Inc., Washington, D. C. 1967, Vol. XXIII, No. 3, pp. 69, 70.

c. Large-scale vocational training programmes are urgently needed. While the migrants are not so predominantly unskilled agricultural workers as is commonly thought, they do not possess the skills needed for modern industry. Industrial expansion, and therefore the absorption into productive employment of unskilled and semi-skilled workers, is hampered by an extreme shortage of skilled workers and supervisors.¹

Although the United Nations report also recognized critical need for housing it is of sufficient magnitude to warrant separate considerations in a topic in itself in the following pages.

Housing

The combination of accelerated population growth, large numbers of rural families moving to the cities and lack of new home construction, has created a desperate need for low cost family housing both in the rural as well as the urban areas. Squatter shacks are being "built" by the thousands, and most often improvised from scrap material which provide the minimum of "shelter," In Middle and South American areas, only 17% and 49% respectively, of the urban population live in houses connected to sewerage systems.²

¹United Nations. Bureau of Social Affairs, Report on the World Social Situation, (New York, 1957), as quoted in Population Bulletin, Vol. XVII, No. 2, pp. 35, 36.

²Abraham Horwitz and Mary H. Burke, "Health, Population and Development," J. Mayone Stycos and Jorge Arias (Ed.) Population Dilemma in Latin America in Latin America, (Washington, D.C.: Potomac Books, Inc., 1966), p. 176.

Table 18 shows the estimated deficit of houses, the requirements and annual construction in eighteen countries. Some of the factors to which this situation is attributed are the lack of a defined policy in the responsible agencies; domestic financing problems which delay the utilization of foreign loans; the lack of skilled technicians at the intermediate level; and a weakness in the system of administrative regulations and procedures. The high cost of construction, also a problem, is in large part attributed to inefficient and traditional building methods.¹

In 1975, the annual need will exceed 2.6 million dwellings -- 1.8 million in towns and cities and 738,000 in rural areas. Every indication is that construction has lagged behind the population increase since 1950.²

In rural areas, as indicated, the shortage of housing is also of grave concern, and the supply of conveniences far more inferior. According to Peru's 1961 census, 29 percent of urban dwellings were occupied by three or more persons to a room. In Ecuador, 35 percent of the urban and 50 percent of the rural housing was one room. In Mexico, the number rose to

¹Final Report of the Third Annual Meeting of the Inter-American Economic and Social Council at the Expert Level, IA-ECOSOC/728, December 1964.

²Socio-Economic Progress in Latin America, "Social Progress Trust Fund Sixth Annual Report, 1966," Inter-American Development Bank, (Washington, D.C., Feb., 1967), p. 11.

TABLE 18.*

Latin America.
Estimates of housing deficit,
annual requirements, and
annual construction.

(Thousands of units).

	Estimated Deficit ¹			Housing Units Required Annually to meet Population Growth and Replacement Needs ²			Annual Construc- tion Total
	Urban	Rural	Total	Urban	Rural	Total	
Argentina	800	400	1,200	121.6	30.9	152.5	55.0
Bolivia	100	280	380	8.0	10.8	18.8	5.0
Brazil	3,000	4,000	7,000	277.0	179.0	456.0	150.0
Chile	270	130	400	45.0	7.4	52.4	33.0
Colombia	300	500	800	72.0	28.8	100.8	40.0
Costa Rica	30	70	100	6.8	4.5	11.3	3.0
Dominican Republic	60	140	200	12.3	11.8	24.1	4.0
Ecuador	180	320	500	15.1	13.6	28.7	4.0
El Salvador	60	140	200	8.5	6.4	14.9	2.0
Guatemala	110	390	500	12.6	11.4	24.0	2.0
Honduras	30	100	130	6.3	7.0	13.3	3.0
Mexico	1,000	600	1,600	194.0	85.3	279.3	57.0
Nicaragua	50	100	150	5.9	3.8	9.7	1.2
Panama	30	70	100	5.2	3.0	8.2	2.5
Paraguay	30	120	150	5.1	2.1	7.2	1.0
Peru	370	450	820	46.3	22.5	68.8	10.0
Uruguay	40	60	100	14.6	2.9	17.5	11.0
Venezuela	500	100	600	54.3	8.6	62.9	40.0
	6,960	7,970	14,930	910.6	439.8	1,350.4	423.7

¹ Source: United Nations, Economic Commission for Latin America.² Obtained from various sources.³ Source: Inter-American Development Bank, Social Progress Trust Fund, Fourth Annual Report, 1964, page 117.

*Population Dilemma in Latin America, p. 175.

68 percent in rural areas. Of all the rural houses in question, 90 percent were mud and wattle huts "which have changed very little since Columbian times."¹

¹Population Bulletin, Vol. XXIII, No. 3, June 1967, p. 70. Quoting from the "Social Progress Trust Fund," Inter-American Development Bank, Washington, D. C.

Unless the problem of providing adequate shelter is given continued attention and is placed in proper perspective, conditions will rapidly worsen with the complementing social and political consequences. " ... there is an element of social justice in this issue and pending broader economic progress which will insure gradual improvement of the situation, there is little doubt that continued government intervention will be necessary to help finance low-cost housing construction and promote establishment of the required institutions, encourage the mobilization of domestic resources for housing and channel capital toward alleviation of a situation so crucial to most of Latin America's population."¹

Foreign or international assistance will undoubtedly have to be employed by Latin countries to complement their limited capital to meet this demand. However, international assistance cannot substitute for measures which must originate in the countries themselves, such as those relating to income levels and distribution, employment and urban land reform, but it can act as seed capital and technical aid, thereby stimulating innovation in construction and financing. Recent trends are encouraging, since the magnitude of the problem has been assessed more objectively, practical solutions have been tried

¹Inter-American Development Bank, Socio-Economic Progress in Latin America, p. 20.

with some success.¹ Although such international assistance will be required for some time, it is anticipated that rising family incomes in each country will gradually make it possible for the Latin American governments and international organizations to place less emphasis on piecemeal and emergency programs, and concentrate more on integrated economic and social development plans.²

¹Ibid., p. 17. Since 1960 institutions like the Agency for International Development (AID) and the Inter-American Development Bank (IDB) have been active in housing and have played a catalytic role by providing substantial long term funds at low interest rates to help finance construction programs, expand and strengthen the home mortgage market, establish and bolster savings and loan associations, encourage the formation of cooperatives and similar institutions, help finance self-help and mutual aid construction programs and more recently, promote slum improvement and urban community development.

²Ibid., p. 20.

Public Health

In this section, attention is directed to ways in which better health and lowering morbidity influences socio-economic development. Morbidity is more difficult to measure than mortality or fertility since improved techniques are needed for measuring improved health as a positive socio-economic force.¹

However, reduction of a disease which had made settlement of a given area impossible, directly increases access to material resources for development. For example, malaria has precluded the development of vast areas. Because malaria has a clearly recognizable clinical picture and may be distributed throughout a community, it lends itself to analyses. In the Mexican state of Tabasco, it was only after malaria had been eliminated that major agricultural development could occur.² In Guyana it was the Sugar Producers Association, not the government, which started malaria control in the 1940's, because a seasonal shortage of labor meant that many were having to close down.³ The malaria program in this case increased the ratio

¹J. Gordon, American Journal of Medical Science, pp. 235, 337 (1958); S. Mushkin, Journal Political Economics, p. 70, Supplemental p. 129 (1962); H. Singer, International Development Review, pp. 3, 7 (1965) cited by Carl E. Taylor and Marie-Francoise Hall, "Health, Population, and Economic Development," Science, Vol. 157, No. 3789 (Aug. 1967), p. 652.

²P. Ruderman, in "Economic Benefits from Public Health Service," Public Health Service Publication No. 1178 (1964), p. 16, as cited by Taylor and Hall, p. 652.

³Ibid.

of the "effective" labor force of the population.

The question is, does increased productivity outweigh the negative economic effects of population increase brought about by improved health measures? So far no actual data have been gathered to quantitatively determine this question, but estimates have been made on the basis of econometric models. S. Mushkin has estimated¹ the probability of occurrence of a gain in Gross National Product as a result of eradication of disease. " ...She assumed (i) that a disease, such as malaria, affected 80 percent of the population of an agricultural area, prevalence being uniform among adults and children and among men and women, and (ii) that disability and debility reduced the productivity of agricultural workers by 30 percent during a 3-month period when the disease was at its peak. The output loss would be 6 percent for the agricultural sector. If agriculture accounted for one-third of the total output, elimination of the productivity loss attributable to this specific disease would increase the Gross National Product by 1.0 percent. If the disease exerted its debilitating effect for the whole year rather than for 3 months, as would be the case, for instance, for schistosomiasis, the increase in national output which would result from its elimination could be as great as 4.0 percent."²

¹S. Mushkin, International Development Review, (1964), pp. 6, 10, as cited by Taylor & Hall, p. 653.

²Ibid.

Furthermore, it has been estimated " ...that an increase in life expectancy at birth from 30 to 32.5 years would require an increase of 0.8 percent in output per worker to maintain per capita income, a marginal capital-output ratio of 3 to 1 being assumed."¹ Using this estimate Mushkin concluded that, where eradication of a disease increased life expectancy at birth in a country by 2.5 years, the gains in output due to reductions in morbidity would exceed the 0.8 percent increased productivity required to maintain their living levels.²

As stated at the outset, mortality changes are easier to measure and more dramatic than measurements of morbidity. They are now receiving more attention because of the concern and implications which they have on the accelerated population growth. However, in programs such as those against malaria, hookworm, malnutrition, yaws, trachoma, tuberculosis and lowered morbidity -- through potential increase in productivity -- almost certainly outweighs the demographic impact of reduced mortality.

¹P. Enterline and W. Stewart, "Health Improvements, Worker Productivity and Levels of Living in Rapidly Growing Countries," paper presented before the AAAS, 1960 and cited by Taylor and Hall, p. 653.

²Ibid.

CHAPTER IV
COPING WITH THE ACCELERATED
POPULATION GROWTH

Awareness and Concern

Over the past decade there has been an increasing awareness on the part of government officials over the accelerated population growth and its various implications toward economic growth and social development. The Church has shown concern over the growth rate as it affects the existence and dignity of man. The individuals themselves are showing concern that the effect of large families is becoming more and more difficult to support and are taking the matter into their own hands, as indicated by greater use of contraceptives and increased incidence of abortion.

One factor which has had considerable impact on increasing awareness of the magnitude of the accelerated growth problem, has been the improved statistics and demographic data. The improvements, however, have come from census data rather than vital statistics. Sixteen countries, including Peru, who took

a census in 1940, took censuses in 1950 and again in the early 1960's.¹ For the first time in most of these countries, a reasonably accurate measure of decennial population growth was provided, and provided during a period of high rates of growth. The availability of the data certainly assisted in dispelling indifference toward the increased population because population growth had exceeded and economic gains had fallen short of expectations. The combined impact on the governments dedicated to economic and social development, if not profound, was at least perceptible. In 1964, Peru established a Population Center by Presidential decree. In the same year Venezuela created a Population Department in the Ministry of Health. The Organization of American States held a symposium on Population Problems also in 1964, with the appointment in 1965 of a special committee to consider demographic problems. The Directing Council of the demographically conservative Pan American Health Organization recently recommended in its Resolution 31 that the PAHO undertake studies "... on population dynamics and population growth, dealing with medical demography, epidemiology, and human reproduction as related to socio-economic development ..."²

Jose A. Mora, Secretary General of the Organization of

¹J. Mayone Stycos, Demography and the Study of Population Problems; J. Mayone Stycos and Jorge Arias, Population Dilemma in Latin America. (Washington, D. C.: Potomac Books, Inc., 1966), p. 235.

²Ibid.

American States, warned the special inter-American Conference meeting in Rio de Janeiro in November 1965, that rapid population growth would pose political problems. Three months later he opened a seminar on population policies at the Pan American Union in Washington, by stating:

Population constitutes the most dynamic -- and in all probability the most significant -- factor of all those currently affecting the overall development picture in Latin America.¹

More than material concerns are involved, he concluded.

" ... at stake are the freedom and dignity of man."²

Although there is no basic common feature of family planning within Latin America, each country is trying to adapt to its own particular conditions and circumstances, organizing private clinics or research units in particular cities. No government is directly sponsoring these programs which are, in general, led by the medical profession. However, " ... five National Ministries of health have adopted a favorable attitude toward population studies and programs. The National Health Service of Chile is supporting the National Committee (Association) of Family Protections.³ The Family Welfare Society of Guatemala

¹"Punta Del Este, 1961-1967 Early Dawn of a Demographic Awakening," Population Bulletin. (Washington, D.C.: Population Reference Bureau, Inc., June, 1967), Vol. XXIII, No. 3, p. 76.

²Ibid.

³H. Romero, "Experience with The Family Planning Program in Chile; Achievements & Problems," The Population Council Conference on Family Planning, Geneva, Aug. 1965, as cited by Ramiro Delgado Garcia, "Perspectives of Family Planning Programs," Population Dilemma in Latin America. (Washington, D.C.: Potomac Books, Inc.), p. 221.

has been officially recognized and is providing contraceptive services through the American Hospital in the city of Guatemala. The Demographic Association of El Salvador, The Center for Population and Development Studies of Peru, and the Population Division of the Ministry of Health and Social Assistance of Venezuela are working in close collaboration with their respective governments in a careful evaluation of socio-economic and demographic problems. By means of census analysis and special surveys of abortion and sexual attitudes, the seriousness of the population problem is being assessed. There are also demographic divisions in the National Planning Offices of Ecuador, El Salvador, Nicaragua, Paraguay, Peru, Venezuela, and Chile."¹

There are also active organizations giving limited contraceptive services (usually urban communities) in Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Peru, Puerto Rico, Uruguay and Venezuela. In Chile and Colombia these organizations are more effectively coordinated and attempting to cover the entire country.²

¹Ibid., pp. 221-222.

²Ibid.

Utilization of the Medical
Establishment

There is a misconception or fallacy which has been advanced by some concerning the role which public health and medical assistance has played in accelerating the population growth problem of Latin America. These critics believe that improving health conditions and saving lives only aggravate and intensify the population growth. Some have even suggested that these programs should be cancelled or curtailed until birth rates have been sufficiently reduced to bring the population growth rate under control. Views such as these are based upon ignorance and inhumanity. Strangely enough, those who have this attitude always seem to relate their prescription to "those" people or "others" but never to themselves or to their own group. Instead of viewing medical achievements as major accomplishments and triumphs of our civilization, they are condemned as the villain of the population problem. As Frank W. Notestein stated, the major crime of the advocates of this viewpoint is perhaps "not their selfishness, but their stupidity."¹ Improvement in health is not only an end in itself, but as stated in Chapter III, it has contributed to economic development as well as social change and incidentally to the motivation of parents to reduce

¹Frank W. Notestein, "Economics of Population Change in Developing Countries," Population Dilemma in Latin America. (Washington, D.C.: Potomac Books, Inc., 1966), p. 98.

their fertility. It seems probable that death rates will always decline before birth rates, primarily because all peoples covet health, therefore the reduction of the death rate involves only the question of obtaining efficient means. The control of fertility, however, is much more involved and requires more sensitive and personal changes.

Parents will be encouraged to accept family planning if they are convinced that health measures will assure them that the children they have will survive. Social and cultural norms are adjusted to produce the minimum replacement number of two children per family when allowance is made for mortality patterns of past generations. In most agrarian societies security in old age depends on one's having surviving children, particularly sons.

Fertility and infant mortality have always been highly correlated. Increasing evidence indicates that a lowered infant mortality will antedate lowered fertility.¹ There is little prospect of fertility control being accepted where high mortality and morbidity make life so uncertain that the only faith or security in the future the individual can have is faith in an afterlife. Only as mortality and morbidity are reduced do they

¹D. Heer, Demography, 3, 423 (1966); H. Frederiksen, Economic Development Cultural Change, 16, 316 (1966); S. Hassan, "Influence of Child Mortality on Fertility," paper presented before the Population Association of America, New York, 1966. As cited by Carl E. Taylor and Marie-Francoise Hall, "Health, Population and Economic Development," Science, Vol. 157, No. 3789 (Aug, 1967), p. 654.

provide some physical security whereby concepts such as planning, saving, or investing for the future have real meaning, regardless of whether they are applied to an individual's family or to the whole society. Improved levels of health encourage an orientation toward the future which is as essential for family planning as for planning other daily activities. The fatalism which slows the whole modernization process at the same time delays acceptance of birth control or family planning. However, " ... mass disease-control programs have unique ability to provide rapid and dramatic demonstrations that change is possible and desirable. Spraying for mosquitoes rapidly reduces the prevalence of malaria. A few drops of an antibiotic in childrens' eyes promptly give tangible evidence that trachoma and conjunctivitis need not be part of growing up. The disfiguring lesions of yaws seem to melt away after injections of penicillin. Vaccinations convincingly prevent several dreaded diseases. Health programs can start the process of social education and increase peoples' willingness to take their destiny into their own hands, thus encouraging an orientation which is as necessary for control of fertility as for deciding to use a new type of seed, improving one's own house, or seeking to learn any new skill."¹

As individuals gain confidence in their security of health

¹Taylor and Hall, "Health, Populations and Economic Development," Science, pp. 654-655.

they will at the same time gain confidence in the personnel who are associated with and responsible for the health improvement programs. By gaining their confidence the public health, medical and paramedical personnel are in an excellent position to influence, instruct, explain and serve as catalyst for the introduction and acceleration of the use of birth control devices and furthering family planning programs.

With the development of the oral pill and the intrauterine device (IUD), devices or methods are available which promise to reduce the birth rate more rapidly. These devices cannot be obtained through the regular commercial channels and require at least the minimum medical services. The IUD have to be inserted by a physician or perhaps by a trained nurse or midwife, and the pill should be taken under medical supervision. Thus, the doctor, nurse, or midwife who can gain the peoples' confidence by helping in moments of physical need can also talk with them about preventing pregnancies and can personally provide the service.

Family planning programs also will have a better chance of success when they are a part of a general health program which the people trust.

An actual case which illustrates this point is the experience of a family planning pilot project in rural Ceylon. The program was built around Family Welfare Centers where prenatal, postnatal, and child welfare clinics had been operating for a number of years.

Practically all pregnant women attended the prenatal clinic, which provided the opportunity for preliminary discussion of family planning. Additional information and supplies were given at the postnatal clinic. The birth rate dropped from 31 per 1000 in 1959 to 20.4 per 1000 in 1964. Since the most notable decline in rates was among women between the ages of 25 and 35, it is probable that the reduction resulted directly from the project. The methods and devices utilized were the diaphragm, foam tablets, rhythm and condom.¹

It is clear that by utilizing the existing medical personnel and facilities that they can bring about a significant impact on the population growth problem in Latin America. There is, however, a serious limitation which prevents or precludes the medical and paramedical personnel from being as effective as they might otherwise be; e.g. the insufficient numbers as well as their geographical distribution within the various countries.

Table 19 illustrates the distribution of Physicians situated in the capitals and large cities and those situated in the remainder of the country. There is no question but what the capital cities and the few large cities of 500,000 are the few centers of population. Approximately 21 percent of the population

¹"Ceylon: The Sweden-Ceylon Family Planning Pilot Project," Studies in Family Planning. No. 2 (1963), pp. 9-12; A. Kinch, In Family Planning and Population Programs, (Chicago: University of Chicago Press, 1966), p. 109, as cited by Taylor and Hall, "Health, Population and Economic Development," Science, p. 655.

lives in these areas and are served by 54 percent of the physicians.¹ In each country which is listed, the ratios of physicians in the larger cities vary between 7 and 29 per 10,000 inhabitants, whereas in the second group which includes the smaller cities, and the rural areas, the inhabitants form 79 percent of the countries total population with less than half, 46 percent, of the physicians. The ratios of physicians for this group vary from 0.5 to 8 per 10,000 population.

TABLE 19.*

Latin America: Number of physicians, and ratios per 10,000 population in capitals and large cities, and in remainder of these countries, in 13 countries, around 1962.

Country	Year	Capital and large cities *		Remainder of country	
		Physicians	Ratio	Physicians	Ratio
Total		56,653	15.1	48,159	3.4
Argentina	1962	20,353	28.8	11,478	8.0
Bolivia	1963	456	9.7	576	1.8
Brazil	1960	11,684	12.8	14,708	2.4
Chile	1960	2,929	11.4	1,692	3.3
Colombia	1962	3,784	7.4	3,669	3.8
Costa Rica	1962	408	9.3	167	2.0
El Salvador	1960	329	7.3	176	0.9
Guatemala	1958	571	10.1	159	0.5
Mexico	1960	10,047	11.9	11,094	4.2
Nicaragua	1960	246	9.0	278	2.3
Panama	1960	245	9.1	156	2.0
Peru	1957	2,843	19.2	998	1.3
Venezuela	1962	2,758	21.0	3,008	4.6

* Includes federal districts, capital cities or departments with capital city, and other cities of at least 500,000 population, or departments with a city of 500,000 population or more.

*Abraham Horwitz and Mary H. Burke, "Health, Population and Development," Population Dilemma in Latin America. (Washington, D.C.:Potomac Books, Inc, 1966), p. 180.

¹Ibid.

Limiting FertilityInduced Abortion

The three methods presently used to limit fertility in Latin America are induced abortion, late marriage, and contraception. It is induced abortion which is causing concern and is most startling. Dr. Francisco Mardones Restat, director of Chile's National Health Service, has been quoted as saying that " ... for every two pregnancies that end in a natural delivery a third ends in abortion."¹ Citing this ratio, The Rev. Roger Vekemans, S.J., calls it "evidence of a popular will, a 'true plebiscite' in favor of family planning."²

In Colombia, the complications following induced abortion reportedly constitute the second largest cause of hospital admissions and in Costa Rica, it is said to be the third.³ In Honduras, 47 percent of blood dispensed by hospitals polled in a survey was reportedly administered to patients suffering from mishandled abortions.⁴

It was such statistics that probably influenced Chile into a decision to sanction the most advanced family planning program in Latin America. Dr. Mardones states: "Our program started as an attempt to deal with abortion and infant mortality, not to deal

¹As quoted in "Punta Del Este 1961-1967 Early Dawn of a Demographic Awakening," Population Bulletin, Vol. XXIII, No. 3, p. 78.

²Ibid.

³Ibid.

⁴Ibid.

with population pressures."¹ As for the high infant mortality rate, he suggested that weary mothers in Latin America "consciously or unconsciously" practice a kind of infanticide by neglect, their last resort and desperate technique of limiting their families.²

Late Marriage

Delayed marriage was one of the principal ways in which European countries brought pre-industrial fertility rates down to modern levels. Argentina and Chile show ages at marriage similar to those of European countries (about 40 percent of the females aged 20-24 married,) practically all other countries, however, have over half the women in this age group married.³ Furthermore, there are undoubtedly significant differences between social classes. An example, a survey of women in Lima disclosed that the mean age at first legal or consenting union was 22.4 for the highest of four social classes, and 19.1 for the lowest.⁴ This could suggest that as education and economic development increase, the developing nations and classes will approximate the later ages of marriage of the economically

¹Ibid.

²Ibid.

³K. Davis, "The Place of Latin America in World Demographic History," Milbank Memorial Fund Quarterly, Vol. XLII, No. 2, Part 2, April 1964, cited by J. Mayone Stycos, "Demography and the Study of Populations Problems," Population Dilemma in Latin America. (Washington, D.C.: Potomac Books, Inc., 1966), p. 237.

⁴J. Mayone Stycos, unpublished survey data as cited by Stycos in "Demography and the Study of Population Problems," p. 237.

advanced nations and classes. Unfortunately, there is not too much known about the relationship of marriage patterns to fertility for most of Latin America and it is difficult to arrive at definite conclusions without such information. This is a topic for research which should be undertaken as soon as possible.

Contraception

There have been local family planning surveys conducted in several areas of Latin America. Table 20 refers to a study which was conducted in Lima, Peru which showed the condom to be one of the most popular methods of contraception in all three socio-economic groups considered. Of those sampled,

"... over 86% of the women at the upper and middle socio-economic levels knew of at least one 'reliable' method of contraception (condom, vaginal tablets, diaphragm, oral anti-ovulation pills, etc.). Whereas only 62% of lower-class women had information about these methods and scarcely 35% had ever used one, 45% of the middle and 57% of the upper-class women had done so."¹

The fertility surveys thus far show a sizeable proportion of women who strongly feel the need for family limitation (about 80%).²

Further studies have found that the lower classes are probably more sensitive than the upper classes to the economic

¹Ramiro Delgado Garcia, "Perspectives of Family Planning Programs," Population Dilemma in Latin America, p. 220.

²Ibid.

TABLE 20.*

Percentage of women reporting use of specified contraceptive methods, by socio-economic level, Lima, Peru, 1964.

Method of contraception	Socio-economic level		
	Upper	Middle	Lower
Rhythm	28.6	22.1	14.9
Douching	0.0	15.1	23.9
Coitus interruptus	3.6	4.7	20.9
Condom	28.6	32.6	22.4
Vaginal tablets or suppositories	0.0	2.3	1.5
Diaphragm	10.7	2.3	0.0
Oral pills	10.7	11.6	6.0
Other	17.9	9.3	10.4

Source: M. Francoise Hall, "Family Planning in Lima, Peru," *The Milbank Memorial Fund Quarterly*, Vol. XLIII, 1965, p. 109.

*Ramiro Delgado Garcia, "Perspectives of Family Planning Programs," Population Dilemma in Latin America, p. 220.

liabilities of additional children.¹ Why then do the lower classes have more children? It may be because they marry earlier, practice less contraception, and when they do, they practice it less effectively. Also, ignorance of modern contraceptive techniques, and disenchantment or failure with methods such as coitus interruptus or rhythm may lead women into abortions. In a study in Buenos Aires, about half the abortions had been preceded by contraceptive practice, and in 83 percent of these cases coitus

¹J. M. Stycos, "Social Class and Preferred Family Size in Peru," American Journal of Sociology, July 1965, as cited by J. Mayone Stycos in "Demography and the Study of Population Problems," Population Dilemma in Latin America, p. 241.

interruptus was the method employed.

The lack of sexual education and the relative few family planning programs throughout the continent are among the obstacles to the limitation of family size.

¹Ibid. Armijo and Monreal found such a low incidence of coitus interruptus in Chile that the possibility of faulty interviewing techniques must be entertained.

Communicating and Educating

If fertility control is to become an accepted social ideal in balance with death control, the subject will have to be discussed in schools. It is essential that appropriate health education be introduced at this crucial level.

The various social and economic aspects of life can scarcely be separated. While a minimum health level in the community and minimum medical services are probably necessary preconditions for acceptance of current methods of family planning, with the more successful programs including advances on various fronts. Community development might serve as one point of departure; the concept of family planning could be introduced to women as only one of many modernizing influences -- along with home sanitation, home economics, child and maternity care, instruction in reading and writing, prevention of accidents, gardening, etc. Local doctors and paramedical personnel could distribute birth control devices.

In male-dominated societies it is essential that men be reached. Family planning can be included in health education programs conducted by the Army or in the school system, or through labor organizations. In Chile, the employees' medical insurance program includes contraceptive services for the stated purpose of preventing induced abortions.¹

¹W. Bustamente, "Breve Rosena de lo que es la 'Planificacion Familiar,'" Public Employees Medical Service Santiago, Chile (1963).

The church is also in a position of working through and in conjunction with community development programs, in explaining the aim of regulating the size of the family in the context of responsible parenthood as well as the ills and consequences of induced abortion. There is no question but what the influence of the church would be far reaching and would contact segments of the population which are otherwise inaccessible and difficult to contact.

Studies of Catholics in Puerto Rico, Peru, Chile and Mexico City show the lower classes to be overwhelmingly in favor of having smaller families and generally favorable toward birth control when they know what it is.¹ Small amounts of education in family planning are beneficial and have produced changes in behavior. But to wait until educational levels in Latin America arrive at the point where people will, by themselves, seek out birth control information and apply it, assuming they will, will slow up the development process beyond tolerable limits.

As cited by Carl E. Taylor and Marie-Francoise Hall, "Health, Population and Economic Development," Science, Vol. 157, No. 3789, Aug., 1967, p. 656.

¹J. Mayone Stycos, "Population Growth and the Alliance for Progress," a paper read before the Society of Applied Anthropology in May, 1962, and excerpted in the Population Bulletin, Vol. XVII, No. 6, Oct., 1962. (Washington, D.C.: Population Reference Bureau), p. 123.

Progress and Achievement

Several trends and events are encouraging for the success of future organization of extensive family planning programs and efforts to cope with the accelerated population growth in Latin America.

Demography and Research

One of the highest priorities is the encouragement of university teaching and research in demography. There have been two recent developments in this area which are very hopeful: The Pan American Health Organization (PAHO) efforts at stimulating training programs in "medical demography" for schools of public health; and the 1966 Conference on "Demography and the Universities" sponsored by the Council on Higher Education of the American Republics (CHEAR), The Population Council and the University of San Carlos in Guatemala.

The School of Public Health of the University of Chile has instituted a Department of Demography and Population Dynamics. Subjects related to demography, family planning, and abortion prevention have also been included in the undergraduate curriculum of several schools (medicine, nursing, midwifery, etc.).²

¹J. Mayone Stycos, "Demography and the Study of Population Problems," Population Dilemma in Latin America, p. 236.

²Ramiro Delgado Garcia, "Perspectives of Family Planning Programs," J. Mayone Stycos and Jorge Arias, Population Dilemma in Latin America, p. 224.

Peru has made a start in population research. By the end of 1964 "aware of the close relationship between the forces of demographic growth and social and economic development,"¹ the Center for Studies on Population and Development was established by presidential decree. Although Peru has not become involved with clinical services it has been concentrating on education, training and fact-finding.

In Chile, the Barros Luco Hospital conducted research on the Zipper ring in 1959. Other hospitals discreetly made similar studies and by 1962, Chile formed its Association for the Protection of the Family under the leadership of the National Director of Health. However, it was not until 1966 that the government announced the inclusion of fertility control in its National Maternal and Child Health Services. The service soon had 62 family planning centers providing contraceptive services to more than 78,000 women, and by the end of 1967, contraceptive information was made available to 100,000 women.² Meanwhile, at the Barros Luco Hospital it has been reported that the abortion case load fell off one-third in 1966.³ -- a statistic that should be of considerable interest to Latin America's religious hierarchy.

¹"Punta Del Este, 1961-1967 Early Dawn of Demographic Awakening," Population Bulletin, Vo. XXIII, No. 3. (Washington, D. C.: Population Reference Bureau, Inc., June 1967), p. 80.

²Ibid., pp. 78-79.

³Ibid., pp. 78-79.

Family Planning

The growing awareness of family planning is being fortified and assisted by the efforts of private voluntary organizations and private foundations. The International Planned Parenthood Federation is probably the most active in the field. The Federation announced that the largest share of its funds for 1968 would go to Latin America. It is expected that about \$2.35 million will be allocated to Latin America for setting up birth control clinics, for research projects at universities and hospitals, and for training doctors, supplying contraceptives and preparing educational materials.¹ In addition " ... grants-in-aid will be given to Family Planning Associations in Argentina, Brazil, Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Grenada, Honduras, Jamaica, Mexico, Panama, Puerto Rico, Trinidad, and Tobago, Uruguay and Venezuela. Some family planning activities are now going on, as a result of International Planned Parenthood Federation efforts, in every Latin American country."²

Agriculture

Accomplishments in related sectors are also being observed.

¹Society for International Development, "Survey of International Development," Vol. IV, No. 12, Washington, D.C., Dec. 15, 1967.

²International Planned Parenthood Federation (London, England) Planned Parenthood World Population (Planned Parenthood Federation of America, Inc., New York, N.Y.) "Family Planning in the Developing Nations," p. 7.

In agriculture, for example, Mexico has made an impressive record. Julian Rodriguez Adame, Former Secretary of Agriculture in Mexico states that agriculture has grown more in the last 30 years than in the whole of the previous century -- 1937 national average of corn yield was 485 lbs. per acre, in 1966 the yield was 1000 per acre; 30 years ago farm prices for corn was 200 pesos (\$16.00 U.S.) per ton and today under government guaranteed system price is 1000 pesos (\$80.00 U.S.); irrigated land has increased from 2,471,000 acres in 1925 to 12,355,000 acres today and the use of fertilizers is growing at the rate of 25% per year.¹

Although a jump in present agricultural growth rate from 4.5 to 5 or 5.5 percent is significant and difficult, it is not impossible.

Population Density

In spite of the rapid population growth rate in Latin America, it does have certain advantages which compared with Asian countries places the region in somewhat more favorable position. The Asian population is approximately six times that of Latin America; 177 people per square mile and 31 people per square mile, respectively.²

¹International Planned Parenthood Federation. "Can Mass Starvation be prevented? World Authorities State Their Views." The Victor Fund Report No. 7, Fall 1967 (New York, 1967), "Mexico Turns the Corner," by Julian Rodriguez Adame.

²"World Population Projections 1965-2000," Population Bulletin. (Washington, D.C.: Population Reference Bureau, Inc., Oct. 1965), Vol. XXI, No. 4, p. 81.

Therefore, the population density is far greater and the economic situation less favorable. Latin America at least has somewhat more time to take the necessary action to correct the imbalance between traditional high fertility and modern low mortality. Since the population density in Latin America is presently to their advantage it does not mean that by excessive population growth it will remain so. Unless measures are taken immediately to narrow the gap between fertility and mortality, the false assumption of vast unpopulated areas may well change from advantage to a disadvantage.

Environmental Health

There has been considerable progress made in environmental health (notably in supplying water, sewerage systems and housing), which is a very significant influence on the socio-economic progress of Latin America. The healthy growth of a community depends on sufficient quantity of potable water, adequate sewerage systems and housing. The lack of these creates serious health problems, degrades living conditions, hampers business and industrial development, and is a major obstacle to economic and social welfare.

In an attempt to improve the distribution of potable water supply to urban and rural areas, most of the countries have engaged in ambitious programs committing large expenditures of resources over a ten-year program. Table 21 illustrates the magnitude and

cost of these projects. During the ten-year period, 1961-1971, approximately ten million people a year will have potable water at an annual cost of over \$320 million.

Table 22 shows the efforts being expended for the construction of water and sewerage systems as well as the principal sources of financing. Although these millions of dollars will not be sufficiently adequate to meet the total need, they do reflect the awareness of the problem on the part of the various governments and an attempt to cope with the problem.

CONCLUSIONS

The population of Latin America is the fastest growing in any continent in the World, and is facing numerous problems associated with such an accelerated population growth. The situation is not insoluble or hopeless. In fact, there is considerable evidence that significant strides have already been taken to cope with the problem by various governments throughout Latin America. The fact that government officials and influential people are discussing the accelerated growth rate, its causes and implications, in itself is evidence of significant progress and achievement.

As a result of the foregoing analysis, the author believes the increased growth rate has decided implications upon socio-economic development and that tremendous sums of capital expenditure will be required to accommodate the changes necessary for an increased standard of living, political stability, sustained economic growth, and the improvement of the dignity of all citizens throughout Latin America.

Not only must the governments (but also church leaders, educators, medical personnel and economic planners) of Latin

America realistically view the implications of accelerated population growth. The society as a whole, must also be sufficiently well informed and motivated in curbing the growth rate. An optimistic approach to the problem will provide these countries with incentives necessary to bring their rates of population growth to tolerable levels in the next two or three decades provided they fully utilize their resources and effectively utilize the needed assistance available from international sources, private agencies, or organizations from the more fortunate or developed countries. In absolute terms the assistance needed from outside of Latin America is large but it is small compared to that needed for overall economic development.

The author would suggest that assistance should include help with training at the professional and sub-professional levels in a wide range of biological, medical, and social science specialties; assistance in building and enriching the medical infrastructure on which contraceptives services depend; and assistance with logistics, supplies and materials for educational and demonstration programs. The assistance must be in such form that any relationship to external assistance by foreign governments must be obscured, blurred, or completely unidentified to the recipient society. Instead, the assistance should be in such form that the local groups, institutions, or organizations to which the individuals are associated or identified will receive

credit for advancement of family planning.

The national governments have an overall responsibility for managing their people and resources. Therefore, the author believes that this responsibility should be exercised only indirectly through providing a suitable atmosphere for the local groups or institutions to advance leadership in the society for family planning, improved economic development, improved quality of the labor force both through environmental sanitation and improved nutrition, and negotiations for necessary external assistance from foreign sources. Family planning is very personal and will be solved by the will of society. Care must be taken that it does not become a political issue. Also, each country will have to develop its own programs to cope with the problem as it exists in that country. The author would also suggest that in general, governments need to improve the statistical data, which is essential for sound development programs and realistic planning. With current and sound data the development programs and plans may be formulated and implemented. The absence of such data will only lead to a scandalous waste of resources, natural and human, which few if any nations, let alone any Latin American nation, can afford.

If the Latin American nations can move from their present growth rates, 2.5 to 3.5 percent to less than 2 percent, while health improves, the problem will not all be solved, but the crisis will have passed.

It would be a mistake to presume that Latin America will move into the future with a linear extension of its past performance or experience. Few people ten years ago would have forecast the rapid changes of the past decade in policies, in contraceptive technology, in public interest, and in programmatic successes. It must be assumed that the future will bring an accelerated pace of change. Already these nations have moved from a position of indifference and public apathy to one of deep concern. Today, governments, international agencies, private organizations, and the Church are talking a great deal about major efforts to remedy the situation and new groups are entering the discourse every day. Everything on the horizon suggests a further deepening of interest and concern, both public and private. The estimate of the future possibilities should be based on the premise that we are at the beginning of an accelerating trend. Practically all of the actual work, national and international, remains to be done. If the efforts are commensurate with the opportunities, there is reason to believe that by the turn of the century the specter of poverty perpetuated by accelerated population growth in Latin America will disappear.

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