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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

CAPITAL ASSISTANCE PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

DOMINICAN REPUBLIC; MATERNAL AND INFANT CARE

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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

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AID-DLC/P-724
June 13, 1968

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE *

SUBJECT: Dominican Republic: Maternal and Infant Care

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed \$7,100,000 to the Government of the Dominican Republic to assist in financing the United States dollar and local currency costs of a health program of maternal and infant care, emphasizing family planning, and including the remodeling and construction of health facilities, procurement of equipment, education and training of personnel, studies, and mass media materials for the program, and technical assistance to the Borrower.

This loan proposal is scheduled for consideration by the Development Loan Staff Committee at a meeting on Tuesday, June 18, 1968.

Rachel C. Rogers
Assistant Secretary
Development Loan Committee

Attachments:

Summary of Revisions to the Paper *
Summary and Recommendations
Project Analysis
ANNEXES I-VI

* The changes reflected in the Supplement to the attached paper will be fully explained at the DLSC meeting and the paper will be revised to reflect these changes.

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June 13, 1968

DOMINICAN REPUBLIC - Maternal Infant Care Project

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SUPPLEMENT

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June 13, 1968

Dominican Republic

Maternal Infant Care Project

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SUMMARY OF REVISIONS TO THE PAPER

During the review of the proposed \$9.4 million loan to the GODR for a maternal infant care program with special emphasis on family planning and population control, it was decided to limit the loan recommendation to \$7.1 million at this time and to reserve funding of that portion of the program related to the completion of region 3, and all of regions 4 and 5 for a second phase. The basis of this decision was: a) the need to limit the total level of local currency funding in the Dominican Republic; and b) the advisability of verifying the capacity of the Health Secretariat to administer and support the program before committing funding for the entire effort.

It is estimated that the support required from the GODR will be very close to the target levels estimated in the loan paper for the entire program, i.e. increases in the budget of the Health Secretariat of approximately \$1.5 million per year during a three year implementation period. The commitment of President Balaguer to an effort of this magnitude will be obtained prior to signing the loan agreement.

The supplement attached to the D.R. Education Sector Loan expressing the decision and recommendation of the CAEC for that loan contains additional data and analysis of the budgetary capacity of the GODR to effectively support both the Education Sector Loan and this proposal and also balance of payments information relative to the justification for the local currency financing proposed in both of these loans and the loan for cooperative development. ^{1/}

That portion of the loan program which will be funded as phase I is as follows:

^{1/} These tables are attached to this memorandum as Exhibits A & B.

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Dominican Republic - Health Loan

If necessary mission would divide the project into two phases. The first phase would concentrate on areas of densest population, Health Regions 1 and 2 and key facilities in region 3 and leave the remainder for a second phase. The loan components would be as follows:

| | | Phases | |
|-------------------------|----------------|----------------|-------------------|
| | As Proposed | I | II |
| Construction | \$5,207,500 | \$3,629,205 | \$1,578,295 |
| Equipment | 2,500,000 | 1,850,000 | 640,000 |
| Education and Training | 1,033,350 | 1,033,350 | |
| Technical Asst. Studies | 395,000 | 395,000 | |
| | 100,000 | 100,000 | |
| Mass Media | <u>118,000</u> | <u>118,000</u> | <u> </u> |
| | \$9,353,850 | \$7,105,555 | \$2,218,295 |

A. Construction

The reduced program would include the following construction:

Health Region No. 1: Santo Domingo, San Cristobal, and Barahona

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- 1. Remodelling of the existing hospital Dr. Moscoso Puello with the addition of an annex for out-patient clinic \$451,256
 - 2. Remodelling of the existing hospital Dr. Luis E. Aybar with the addition of an annex for out-patient clinic 436,723
 - 3. Remodelling of the existing hospital Padre Billini 305,942
 - 4. Annex for Maternity to Juan Pablo Pina Hospital in San Cristobal 153,920
 - 5. Remodelling and enlargement of Childrens Hospital, maternity hospital and health center 72,800
 - 6. Construction of a health subcenter in Yamasa, San Cristobal Province, with 35 beds 33,280
 - 7. Construction of 8 rural clinics 83,200
- 1,537,121

Health Region No. 2: Santiago, Puerto Plata, Valverde, Santiago Rodriguez, Monte Cristi, and Dajabon

- 1. Remodelling of the existing J.M. Cabral Hospital in Santiago with the addition of a wing for Obstetrics 551,200
 - 2. Remodeling of the existing hospital in Monte Cristi 129,407
 - 3. Remodeling of the existing hospital in Dajabon 52,718
 - 4. Construction of 6 health subcenters that eventually can be used as Maternity Centers in Gaspar Hernandez, Villa Vasquez, Guayubin, Pepillo Salcedo, and Altamira, Av. Duarte (Santiago) 199,680
 - 5. Remodeling health subcenter in Luperon and Imbert 41,600
 - 6. Enlargement of wing of Puerto Plata Health Center 10,400
 - 7. Construction of 29 rural clinics 301,600
- 1,286,605

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Health Region No. 3: Duarte, La Vega, Sanchez Ramirez,
Salcedo, Trinidad Sanchez and Samana

- | | |
|---|---------|
| 1. Remodeling of the existing hospital San Vicente de Paul in San Francisco de Macoris | 178,880 |
| 2. Remodeling of 4 health subcenters in Villa Rivas, Pimentel, Castillo and Villa Tapia | 62,400 |
| 3. Construction of 8 rural clinics | 83,200 |
| | <hr/> |
| | 324,480 |

Health Region No. 4: Barahona, Pedernales, Independencia,
Bahoruco, Azua, San Juan de la
Maguana, and Estrelleta

- | | |
|---|---------|
| 1. Enlargement of the Maimé Mota Hospital in Barahona | 238,734 |
| 2. Remodeling of the existing hospital in San Juan de la Maguana (Santomé Hospital and Health Center) | 242,195 |
| | <hr/> |
| | 480,979 |

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B. Equipment and Commodities

The reduced program will provide \$1,860,000 for equipment and commodities in Phase I and 640,000 in Phase II as follows

| <u>Hospitals</u> | <u>No. of Beds</u> | <u>Phase I</u> | <u>Phase II</u> | <u>Cost of Additional Equipment</u> |
|--|--------------------|----------------|-----------------|-------------------------------------|
| Moscose Puello | 150 | 800,000 | | \$ 300,000 |
| L. Aybar | 150 | 300,000 | | 300,000 |
| Padre Billini | 103 | 200,000 | | 200,000 |
| Juan P. Pina | 91 | 180,000 | | 180,000 |
| Yamasa | 35 | 50,000 | | 50,000 |
| Cotui | 35 | | 50,000 | |
| Santiago de C balleros | 100 | 200,000 | | 200,000 |
| S. F. Macoris | 44 | 100,000 | | 100,000 |
| Nagus | 38 | | 50,000 | |
| Barahona | 50 | 100,000 | | 100,000 |
| Azua | 50 | | 100,000 | |
| San Juan de Maguana | 60 | 120,000 | | 120,000 |
| Matas de Farfan | 50 | | 100,000 | |
| Seybo | 26 | | 50,000 | |
| Dajabon | 25 | | 50,000 | |
| Monte Cristy | 50 | 100,000 | | 100,000 |
| Maternity | | 50,000 | | 50,000 |
| SUB-TOTAL | | | | \$2,100,000 |
| 25 Maternity-Sub-Centers at \$3,500 each | | 28,000 | 62,000 | 90,000 |
| Phase I 8 Phase II 17 | | | | |
| 98 Rural Clinics at \$1,500 each | | 67,500 | 67,500 | 135,000 |
| SUB TOTAL (Phase I 45, Phase II 45) | | | | \$225,000 |
| Vehicles | | 60,000 | 15,000 | 75,000 |
| Emergency power plants and water pumps | | 85,000 | 15,000 | 100,000 |
| SUB TOTAL | | 1,800,000 | \$640,000 | \$175,000 |

GRAND TOTAL

\$2,500,000

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C. Health Manpower and Training

The reduced program will include the entire training program under phase I as a means of providing adequate personnel for phase II.

D. Technical Assistance

Phase I will include all of the technical assistance program of the original project to provide basis for Phase II.

E. Special Studies

Phase I will include all studies.

F. Mass Media

For obvious economy reason mass media costs will be funded in Phase I.

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Phase I
Projects by Types and Costs

| | 1 | 2 | 3 | 4 | 5 | Total |
|--|------------------|------------------|----------------|----------------|-----------|------------------|
| Remodeling and Enlargement of Hospitals (15) | 1,420,641 | 733,325 | 178,880 | 480,979 | -- | 2,813,825 |
| Construction of Hospitals (1) | -- | -- | --- | --- | -- | --- |
| Remodeling of Health Maternity Subcenters (12) | -- | 52,000 | 62,400 | --- | --- | 114,400 |
| Construction of Health Maternity Subcenters (15) | 33,280 | 199,680 | -- | -- | -- | 232,960 |
| Construction of Rural Clinics (89) | 83,200 | 301,600 | 83,200 | -- | -- | 468,000 |
| Total | 1,537,121 | 1,286,605 | 324,480 | 489,979 | -- | 3,629,185 |

Phase II

| | 1 | 2 | 3 | 4 | 5 | Total |
|--------------|------------------|------------------|----------------|------------------|----------------|------------------|
| 1. | -- | -- | 137,280 | 423,010 | 115,232 | 675,522 |
| 2. | -- | -- | 121,753 | -- | -- | 121,753 |
| 3. | -- | -- | -- | 46,800 | 10,400 | 57,200 |
| 4. | -- | -- | 99,840 | 133,120 | 33,280 | 266,140 |
| 5. | -- | -- | <u>166,400</u> | <u>145,600</u> | <u>145,600</u> | <u>457,600</u> |
| | | | 525,273 | 748,530 | 304,512 | 1,578,215 |
| Total | 1,537,121 | 1,286,605 | 849,753 | 1,229,509 | 304,512 | 5,207,500 |

Recommendation: Authorization of a loan to the GODR in an amount not to exceed \$7,100,000 for a health program emphasizing family planning within the context of a system of maternal-infant care facilities on the following terms and conditions:

1. Interest and Terms of Repayment

a. The Borrower shall repay the loan to A.I.D. in United States Dollars within forty years including a grace period of not to exceed ten years. The Borrower shall pay to A.I.D. in United States Dollars on the disbursed balance of the loan interest of two percent (2%) per annum during the grace period and $2\frac{1}{2}\%$ per annum thereafter.

2. General Conditions

a. United States Dollars utilized under the loan to finance local costs shall be made available to the Borrower or its designee through the Special Letter of Credit procedures and shall be used only for procurement in the United States.

b. A Borrower procurement of goods and services (except marine insurance) financed by the loan for the Project shall have their source and origin in the United States or in the Dominican Republic.

3. Special Conditions

a. The Borrower shall covenant to support this development effort by adequately staffing, operating and maintaining the family planning facilities that will be provided by this loan. (The calculations made of the increased costs that will be incurred by the Secretariat are explained in Section VII B. These expenses are reflected as increases in the general budget of the Secretariat of Health as the facilities will be owned and operated by the Secretariat; however, the increases represent only the amounts necessary for the operation of the family planning facilities.)

b. A condition precedent to the use of these loan funds shall be the creation of a National Population Council to serve as an advisory arm to the Secretary of Health, to supervise all population matters within official hospitals and to coordinate all family planning programs conducted in facilities other than official hospitals.

c. Prior to the use of these loan funds the fourteen rural clinics constructed with SA funds shall have been put into full operation with adequate staff, and each clinic shall have an active family planning program.

d. The GODR establish adequate warehousing, insurance, and inventory control of receipt and warehousing of equipment and materials prior to the commencement of procurement of such items under the loan.

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e. Construction or remodeling of specific facilities will be authorized only after receipt by USAID of an acceptable staffing pattern and evidence of the establishment of positions with budget allocation for those positions.

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~~CONFIDENTIAL~~GODR BUDGET
(in RD\$ Millions)

| | <u>1966</u> | <u>1967</u> | <u>1968</u> ^E | <u>1969</u> ^P | <u>1970</u> ^P |
|--|----------------------------|--------------|--------------------------|--------------------------|--------------------------|
| Domestic Revenues | 162.6 | 178.9 | 185 | 195 | 205 |
| Domestic Expenditures | <u>194.3</u> ^{1/} | <u>179.5</u> | <u>185</u> | <u>195</u> | <u>205</u> |
| Operating costs ^{2/} | <u>173.3</u> ^{1/} | <u>156.3</u> | <u>158.3</u> | <u>161.5</u> | <u>163.5</u> |
| (Education, including 1968 sector loan) | (26.2) | (27.3) | (30.2) | (32.7) | (34.6) |
| (Health, including 1968 sector loan) | (15.1) | (14.8) | (15.8) | (17.3) | (18.8) |
| (Other) ^{2/} | (132.0) | (114.2) | (112.3) | (111.5) | (110.1) |
| Public Sector Savings | 21.0 | 23.2 | 27.0 ^{3/} | 33.5 ^{4/} | 41.5 ^{4/} |

Source: US Mission Reports and ARA/ECP Estimations.

E = Estimate.

P = Projection.

^{1/} Foreign Assistance Expenditure included with domestic expenditures in 1966 reports.

^{2/} Includes all domestic expenditure except investment. Education and Health expenditures not rated as investment expenditure. 1968-70 figures are based on following projections for reduced military spending and for education and health budget increases, all in comparison to 1967 annual figure. Budgeted military cuts estimated in 1968 CASP, and Health and Education figures in respective sector loan documents:

| | Increase over 1967 Base | | | Total Increase |
|----------------------------------|-------------------------|-------------|-------------|----------------|
| | <u>1968</u> | <u>1969</u> | <u>1970</u> | <u>68-70</u> |
| Health Sector | +0.3 | +1.5 | +1.5 | = 3.3 |
| Education Sector | +2.9 | +5.4 | +7.3 | = 15.6 |
| Military Cuts | -1.2 | -1.7 | -1.6 | = -4.5 |
| Net increase, operating costs | +2.0 | +5.2 | +7.2 | +14.4 |

^{3/} GODR target.

^{4/} Projection assumes that GODR will manage to hold all operating costs constant other than those shown in footnote 2. On this basis, Public Sector Savings figures for 1969 and '70 result as shown above.

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DOMINICAN REPUBLIC

Balance of Payments
(in U.S. \$ Millions)

| | <u>1967</u> | <u>1968</u> |
|----------------------------|----------------------|---------------------|
| Exports | 156.6 | 162.9 ^{1/} |
| Imports | -173.5 ^{2/} | -170.0 |
| Trade Balance | -16.9 | -7.1 |
| Net Services | -60.4 | -55.3 |
| Net Transfers | 15.8 | 12.2 |
| Current Account | -61.5 | -50.2 |
| Capital Account | <u>37.5</u> | <u>65.0</u> |
| Net, AID | 30.0 | 36.8 |
| Net, Ex-Im | 2.2 | 6.4 |
| PL-480 | 2.5 ^{3/} | 11.7 |
| Net, Others | 2.8 | 10.1 |
| Errors and Omissions | 9.8 | - |
| Balance of Payments | -14.2 | 14.8 |
| Monetary Movements | <u>14.2</u> | <u>-14.8</u> |
| Assets (increase = -) | 9.2 | 3.7 |
| Liabilities (decrease = -) | 5.0 | -18.5 |

^{1/} Including estimated special U.S. sugar allocation of \$10.1 million.

^{2/} Preliminary. May increase slightly.

^{3/} Represents actual amount of PL-480 Title I imports in 1967.

NOTE: The \$12.0 million loan, with a \$4 million local cost financing component, assumes that the local cost financing would be disbursed evenly over the three years 1968-70, giving b/p support of about \$1.3 million each year to the Dominican Republic.

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REVISION

After consultation in Washington concerning: a) commodities to be included in a Positive List for A.I.D. financing, b) methods to be employed in assuring prompt drawdown of A.I.D. funds when the Positive List is in use, and c) the possibility of reductions in the amount of funds to be drawn down through SLC procedures, Mission officers have negotiated with Central Bank representatives a new mutually acceptable selection of commodities which with Washington approval can be established as the Positive List. The new list is attached.

The new selection represents a compromise between the Mission's original listing and the Central Bank's counter proposal. Except for Item 887-03, Small Trucks and Item 887-07, Passenger Buses, there are no very high unit cost capital goods included. The new list also reflects an attempt to avoid: a) items whose trade mark identification is a major factor in marketing and b) selecting groups of related items, a number of which may be handled by a single importer-distributor. The new list includes thirty-eight (38) tariff categories. Of these, twenty-four (24) were on the original Embassy list including alternatives.

Under current trading conditions without incentives, some \$21.4 million worth of the selected commodities could be expected to be imported from all sources in the twelve-(12)-month period beginning in early July when the Positive List will be put into effect. Of this amount, approximately 50% could be expected to come from the United States. It is assumed that about \$18.7 million of A.I.D. funds would be drawn down under SLC financing procedures during the first year. The Central Bank intends to establish an incentive system designed to generate purchases of approximately \$8 million more than usual from the United States, sufficient to use all of the A.I.D. funds and to raise the U.S. share of the market for the selected commodities from 50% to 87%.

Essentially the Central Bank's proposed system is one of credit incentives. The Central Bank would establish the requirement that all items on the list are to be imported only by fully pre-paid letters of credit. Importers of Positive List items of U.S. origin would then be freed from the pre-payment requirement for letter of credit financing and would not be required to put up pesos with their commercial banks for two to three months or more after the goods were cleared through Customs. The question of how the commercial risk involved in these credits may be covered has not been discussed. Exact terms of the incentives for SLC financed imports or dis-incentives for non-SLC financed imports may vary, depending upon the competitive position of the U.S. product.

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COMMODITY IMPORT PROGRAM--POSITIVE LIST

| <u>Tariff No.</u> | <u>Article</u> | <u>Actual Imports 6 mos. 1967</u> | <u>From U.S.</u> | <u>%</u> |
|-------------------|---|---------------------------------------|------------------|----------|
| 887-03 | Small Trucks | 1,776,111 | 871,289 | 49.06 |
| 1039-05 | Powdered Milk (with or without Sugar) | 1,487,790 | 757,551 | 52.68 |
| 32-01 | Lubricating Oils | 549,680 | 345,438 | 62.8 |
| 629-01 | Writing Paper | 203,284 | 92 | .004 |
| 251-97 | Tools & Instruments of all Classes | 232,945 | 122,605 | 52.6 |
| 655-07 | Cellophane | 265,977 | 118,671 | 44.62 |
| 651-01 | Wax Paper | 24,455 | 6,450 | 26.4 |
| 629-07 | Other Papers for Writing or Printing | 76,123 | 46,516 | 61.1 |
| 655-11 | Aluminum Foil | 40,641 | 15,986 | 39.33 |
| 657-00 | Sensitized Paper | 72,485 | 37,864 | 52.24 |
| 652-01 | Copying Paper | 32,046 | 13,826 | 42.5 |
| 658-00 | Carbon Paper | 15,251 | 7,250 | 47.54 |
| 886-07 | Passenger Buses | 244,313 | 116,429 | 47.86 |
| 163-03 | Pipe, Galvanized | 346,018 | 63,930 | 16.5 |
| 163-99 | Tubes & Pipe, N.E.S. | 234,691 | 85,816 | 36.6 |
| 853-15 | Electric Generators | 74,735 | 19,352 | 25.89 |
| 140-01 | Toilets of any Material | 69,800 | 18,234 | 26.1 |
| 156-25 | Iron & Steel Bars | 67,840 | 17,671 | 26.0 |
| 1045-19 | Transmission Belts of Rubber or Rubber Combined with Other Material | 37,564 | 9,691 | 25.79 |
| 671-03 | Gummed Paper Tape | 31,002 | 20,574 | 66.36 |

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NOTE: TYPED FROM ILLIBLEGIBLE A-618; therefore, figures must be checked for accuracy.

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The \$18.7 million A.I.D. funds figure is an estimate intentionally on the conservative side: it will be easy to add to the Positive List later if more A.I.D. funds are available, while it could be difficult to reduce the list if AID funds availabilities for any reason do not reach current expectations.

The Central Bank representatives have advised that government entities, particularly the State Sugar Council (CEA), could be directed if necessary to buy only from U.S. sources certain items not on the list, for example, chemical fertilizers, insecticides and herbicides.

The Central Bank representatives emphasized that it is not possible to predict with confidence how an incentive system, as contrasted with the directed procurement plan they originally proposed, would work. They indicated, however, the Bank's readiness to modify the system A.I.D. - Central Bank consultation will be scheduled.

The Central Bank has been asked to give A.I.D. expanded descriptions in English of the Dominican tariff categories used in the proposed Positive List.

From: Dominican Republic A-618 - 5/30/68

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| Tariff No. | Article | Actual Imports | | % |
|------------|---|-------------------|------------------|-------|
| | | 6 mos. 1967 | From U.S. | |
| 671-99 | Other Paper Tape | 21,789 | 7,417 | 34.05 |
| 163-05 | Black Tubes & Pipe | 18,307 | 11,002 | 60.1 |
| 421-33 | Plain Cotton Cloth | 2,627,958 | 1,414,168 | 53.3 |
| 851-07 | Pumps, Motor Driven | 84,082 | 66,986 | 79.67 |
| 851-05 | Diesel Motors | 82,452 | 51,804 | 62.63 |
| 76-01 | Glass Bottles | 50,505 | 33,575 | 61. |
| 273-91 | Welding Machines for Iron & Steel | 40,809 | 28,819 | 70.6 |
| 876-01 | Electric Meters | 36,775 | 24,295 | 66.06 |
| 1093-99 | Pressure Gauge, Rain Gauge, Barometers, Thermometers, & all Pressure Indicators | 36,915 | 20,916 | 57.89 |
| 853-13 | Electric Motors | 106,666 | 55,244 | 51.79 |
| 872-01 | Typewriters | 101,377 | 32,242 | 31.80 |
| 863-05 | Equipment for Spraying Insecticides | 35,681 | 17,386 | 48.73 |
| 661-00 | Cardboard Carton Material in Sheets | 513,582 | 451,882 | 87.90 |
| 239-03 | Iron & Steel Hinges | 29,394 | 7,294 | 24.8 |
| 331-02 | Aluminum Ingots | 175,085 | 132,863 | 84.8 |
| 85-05 | Bottles for Medicines | 45,990 | 22,119 | 48.1 |
| 852-57 | Telephones | 31,333 | 17,168 | 53.93 |
| 168-03 | Smooth Wire | 322,943 | 16,052 | 5.0 |
| | | <u>10,194,237</u> | <u>5,105,767</u> | |

2x1/2 of 1967 plus 5% = 12 mo. imports for period Positive List to be used---

21,407,898 10,722,111 50.

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NOTE: TYPED FROM TR. LEGIBLE A-618; therefore, figures must be checked for accuracy.

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June 13, 1968

DOMINICAN REPUBLIC - MATERNAL INFANT CARE PROJECT

I. SUMMARY AND RECOMMENDATIONS

- A. BORROWER: The Borrower will be the Government of the Dominican Republic acting through the Secretariat of Health.
- B. LOAN AMOUNT: The loan will be for an amount up to \$9,400,000 on the statutory minimum terms; i.e., repayment over a 30-year term after a 10-year grace period with interest at 2% annually during the grace period and 2 $\frac{1}{2}$ % annually thereafter.
- C. PURPOSE: The population growth rate in the Dominican Republic which is one of the highest in Latin America, estimated at 3.4% per year, has virtually nullified the gains that have been made in the GNP in recent years.

The purpose of this loan is to assist the GODR to bring about a sharp reduction in the population growth rate through a nationwide program of family planning. This program will be carried out through a microdemographic approach which emphasizes the strengthening of the health infrastructure so as to permit the provision of a nationwide maternal/infant care service--including family planning--on a voluntary, non-coercive basis. Included in the program will be pre-nuptial, pre-natal, intra-partum, and post-partum care activities carried out in an urban rural system of hospitals and sub-centers, rural clinics, and military and police aid stations. These facilities will be constructed within the context of a regional, coordinated network of health facilities and include also the remodeling of some base hospitals to transform them from surgical into general hospitals by adding obstetrician, gynecology, and pediatric wards and the construction of adequate out-patient facilities for maternal-infant care clinics.

- D. BACKGROUND AND PROJECT GOAL: The present climate of opinion in the Dominican Republic is highly favorable toward family planning always within the context of the broad maternal-infant care approach. This has evolved gradually since 1966. In May of 1967 the GODR boldly announced the new program in a nationwide television panel program and inaugurated the first family planning clinic in the main health center in Santo Domingo.

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In February of 1968 the GODR organized an Official Government Population Council to advise the Secretariat of Health and to provide technical supervision of the regional health services with family planning programs. The Roman Catholic Church has been sympathetic, though officially silent, to present family planning activities in the Dominican Republic. Moreover, the church has permitted clergymen to participate in international conferences dealing with population matters and to join the local Dominican Association for Family Welfare, an affiliate of the IPPF. The press, radio, and television have almost universally supported population control concepts and have praised the GODR's insistence that family planning be done within the context of expanded health programs.

It is estimated that the project to be carried out under the loan will have 449,302 women under treatment and 339,338 successfully controlled by 1972 which will prevent a total number of births during the four-year period 1970-73 of 73,096. If we assume that the mortality rate for children under five will also decrease during the period due to improved health conditions, education and other social factors at a rate of .3% per year, the population growth rate will be reduced from 3.4% to 2.7% by 1973.

E. PROJECT DESCRIPTION: The loan will provide financing for the following:

- a) Remodeling of hospitals, sub-centers and clinics to provide adequate MIC in-hospital and out-patient facilities and the construction of hospitals and clinics in regions and areas not now covered (a total of 132 medical facilities)
\$5,207,500
- b) Equipment: General hospital equipment to equip properly the MIC services and the out-patient clinics
\$2,500,000
- c) Education and Training of 3,085 medical and para-medical personnel
\$1,033,350
- d) Technical Assistance: Short-term consultants in nursing, maintenance, administration, research and training
\$ 395,000
- e) Studies: Costs other than for technical assistance for continuous evaluation of the family planning program, and on the administrative organization of the Secretariat and the regional hospital system.
\$100,000
- f) Mass Media preparation and distribution of materials to develop and maintain positive attitudes towards family planning.
\$ 118,000

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- F. ALTERNATIVE SOURCES OF FINANCING: It is assumed that the Eximbank, the Inter-American Development Bank and the IBRD are not interested in financing this project.
- G. VIEWS OF THE COUNTRY TEAM: The Country Team supports this project fully. A significant reduction in the population growth rate of the Dominican Republic will produce substantial economic and social benefits.
- H. STATUTORY CRITERIA. Certification from the Director of USAID/DR, as required under Section 611(c) of the FAA is attached as Annex III. Signing of the Loan Authorization will constitute AID/W approval of said certification. All other statutory criteria have been met. (See Annex IV).
- I. ISSUES: The issues presented by this development loan proposal are essentially identical to those of the Educational Sector Loan now under consideration by the CAEC; namely, the ability and willingness of the GODR to increase the budget of the Health Secretariat in amounts sufficient to effectively complement this loan and the justification for the authorization of approximately \$5 million of development loan funded local currency financing during the period 1969-1971.

The GODR should have the capacity to make the necessary budget allocations to support this project. Revenues and loan requirements for the period are estimated as follows:

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| <u>Year</u> | <u>Total Revenue</u> | <u>Increment Above Previous Year</u> | <u>Amount of Increment for Ed. Sector</u> | <u>Amount of Increment for Health Secretariat</u> |
|-------------|----------------------|--------------------------------------|---|---|
| 1967 | 177.3 | 14.7 | | |
| 1968 | 185.0 | 7.7 | 3.7 | |
| 1969 | 195.0 | 10.0 | 3.8 | 1.5 |
| 1970 | 205.0 | 10.0 | 3.2 | 1.5 |
| 1971 | 215.0 + | 10.0 | - | 1.5 |

The willingness of the GODR to commit itself to this program will be established prior to signing the Loan Agreement and measured again at the end of 1968 when the GODR approves its Health budget for 1969. Only a minimal number of projects, if any, will be commenced prior to 1969.

This loan unavoidably contains a large component of local currency financing in order to construct the additional facilities that will permit it to be a nationwide effort. The basis of the recommendation that such financing be authorized is the same as in the case of the Educational Sector Loan, GODR resources that can be made available to this project will be required for increased operational budgets of the Secretariat of Health.

J. RECOMMENDATION: Authorization of a loan to the GODR in an amount not to exceed \$9,400,000 for a health program emphasizing family planning within the context of a system of maternal-infant care facilities on the following terms and conditions:

1. Interest and Terms of Repayment

a. The Borrower shall repay the loan to A.I.D. in United States Dollars within forty years including a grace period of not to exceed ten years. The Borrower shall pay to A.I.D. in United States Dollars on the disbursed balance of the loan interest of two percent (2%) per annum during the grace period and 2½ % per annum thereafter.

2. General Conditions

a. United States Dollars utilized under the loan to finance local costs shall be made available to the Borrower or its designee through the Special Letter of Credit procedures and shall be used only for procurement in the United States.

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- b. A Borrower procurement of goods and services (except marine insurance) financed by the loan for the Project shall have their source and origin in the United States or in the Dominican Republic.

3. Special Conditions.

- a) The Borrower shall covenant to support this development effort by adequately staffing, operating and maintaining the family planning facilities that will be provided by this loan. (The calculations made of the increased costs that will be incurred by the Secretariat are explained in Section VII B. These expenses are reflected as increases in the general budget of the Secretariat of Health as the facilities will be owned and operated by the Secretariat; however, the increases represent only the amounts necessary for the operation of the family planning facilities.)
- b) A condition precedent to the use of these loan funds shall be the creation of a National Population Council to serve as an advisory arm to the Secretary of Health, to supervise all population matters within official hospitals and to coordinate all family planning programs conducted in facilities other than official hospitals.
- c) Prior to the disbursement of these loan funds, the fourteen rural clinics constructed with SA funds shall have been put into full operation with adequate staff, and each clinic shall have an active family planning program.
- d) The GODR establish adequate warehousing, insurance, and inventory control for receipt and warehousing of equipment and materials prior to the commencement of procurement of such items under the loan.
- e) Construction or remodeling of specific facilities will be authorized only after receipt by USAID of an acceptable staffing pattern and evidence of the establishment of positions with budget allocation for those positions.

PROJECT COMMITTEE:

| | |
|-------------------|-------------------------------|
| Richard P. Ruby | - USAID/DR, CDO |
| Lawrence Hausman | - USAID/DR, Asst. CDO |
| Stanley Applegate | - Chief, Human Resources Div. |
| Samuel Lugo, M.D. | - USAID/Human Resources Div. |
| Daniel Weintraub | - USAID/DR |
| Jonathan Russin | - USAID/DR, Counsel |

June 13, 1968

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II. BORROWER

A. Secretariat Structure

The Borrower will be the GODR acting through the Secretariat of Health and Social Welfare.

The Secretariat was organized in 1927 and reorganized under the 1956 Public Health Code. Subsequent reorganizations within the Secretariat have taken place on a periodic basis.

The Secretariat is directed by a Secretary of State, who is a physician. He is assisted by 2 Sub-Secretaries and is advised by a Technical Council consisting of the Secretariat's division chiefs as well as international advisors from WHO-PAHO. The role of this Technical Council is to assist the Secretary of Health in the planning and implementation of policies related to health matters.

The Sub-Secretary of Social Welfare is in charge of all welfare activities. Health matters come under the jurisdiction of the Sub-Secretary of Health. The Sub-Secretary of Health is responsible for the National Health Services (NHS), which is directed by a public health physician.

The NHS consists of 11 divisions: Hospitals (including all public and private in-patient facilities except those of the Dominican Institute of Social Security), Public Health Centers and Subcenters, Epidemiology, Nursing, Environmental Sanitation, Maternal-Infant Care, Nutrition, Health Education, Statistics, Laboratory, and Pharmacy.

In February, 1968, the GODR established a National Population Council as part of the Secretariat of Health. Presided over by the Secretary of Health, the council has members from the Technical Secretariat of the Presidency, the Dominican Association for Family Welfare, and the Secretariats of Agriculture, Labor, and Education. The everyday operations of the Council are directed by an Executive Secretary. In addition, there is a technical advisory staff to the Council consisting of a sociologist, a demographer, and five physicians. The Executive Secretary as well as the technical advisory staff are paid by the Population Council in New York with Regional AID funds.

The Dominican National Population Council is in charge of all population matters. It is responsible for coordinating both short-term and long-range programs including research, training, education, services, supervision, and evaluation.

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B. History of Health Planning

In 1962, the Secretariat of Health published a ten year Health Plan in accordance with the principles adopted at the Punta del Este Conference of 1961. This plan called for a reorganization of Dominican health services based on a division of the country into health regions. Available medical facilities and personnel were to be distributed in these regions according to population needs. The main health areas upon which the plan focused were maternal and infant health, environmental sanitation, housing, rural health facilities, nutritional education, and the training and recruitment of personnel. From 1962 to 1966 political unrest and the lack of adequate financing delayed concrete implementation of the health plan. In 1967/68, this regional health plan was reviewed by the Secretariat along with a program of maternal and child care, which included family planning as an integral component, and adopted as the 1968-70 Health Services Plan. Funds provided under this proposed loan, as well as increases in GODR budgetary allocations to the Secretariat, will permit priority aspects of the regional plan, including the crucial addition of family planning, to become a reality.

C. Secretariat Characteristics and Capability

The Secretariat of Health employs approximately 7000 people. Many staff physicians are highly trained and qualified, having received specialized training outside of the country. There is, however, a need for additional training, especially in view of the proposed family planning program. For this reason, training of medical and paramedical personnel is an integral component of the proposed loan. Sufficient numbers of trained personnel already exist to implement the program during its first year. The effect of the loan's training programs will be seen in the second year as health facilities and services expand.

An examination of the Secretariat of Health's budget reveals that a large proportion is spent on salaries; operations necessarily suffer. Presently, the ratio of expenditures for personnel (salaries) as opposed to other operational expenditures (materials, gasoline, per diem, maintenance, etc) is about 70:30. There is a need for more operating funds as well as for the additional personnel salaries that will be required with the expansion of health services and facilities. This need is recognized by the Secretariat and increased appropriations for 1968 have already been discussed and approved by the GODR. The Secretariat's budget is analyzed in part VII. B. of this loan paper.

1 - Secretariat of Health Personnel 1968--ANNEX I, Exhibit 1.

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In broad outline the organizational structure of the Secretariat, with its two technical and one non-technical divisions, is a serviceable one and could be made to function well. It is within the three divisions, and in communications and working relationships between them, where the organization breaks down and is rendered cumbersome and inefficient. The internal communications system within and between divisions is burdensome and obviates against smooth, efficient working relationships while weighing down the decision making machinery. A considerable proliferation of departments and units is quite evident in the lower levels of the organizational structure. It is also evident that considerable consolidation of departments and units could be effected, thereby providing greater efficiency in two of the three major divisions. This regrouping could serve to eliminate some of the obvious duplication which presently exists. New administrative units have been added in a helter-skelter fashion resulting in a rather confused and duplicative organizational pattern, especially so in the "Direccion General de Salud". Systematic internal evaluation of the organization, its goals, functions and achievements, is non-existent.

Written job descriptions and personnel qualifications and written operational policies and guidelines exist but are not observed. Uniform recruiting and screening procedures for prospective employees do not exist. There is little delegation of authority, delayed decision-making, lessening of individual initiative, and over separation of decisions from the sources of effective action.

An ancillary benefit to be derived from the proposed loan will be an increase in the capabilities of the Secretariat. The loan provides for studies of the organization and administration of the Secretariat with a view toward correcting many of its deficiencies. These studies will supplement the work of, and in part be implemented by, the several foreign advisors provided by AID grant funds and by other international contributors. These studies include an administrative review of the Secretariat for the purpose of establishing effective organization at both national and local levels, a review of the National Sanitary Code with emphasis to be placed on possible modifications with regard to enforcement provisions, and a study designed to help the Secretariat establish an efficient purchasing and distribution system for all materials, equipment and supplies.

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III. BACKGROUND STATEMENT

A. Present Demographic Situation

The total population of the Dominican Republic is estimated at about four million people with a density of about 174 persons per square mile. Censuses have been taken in 1920 (an "incomplete" census), 1935, 1950, and 1960, with another national census planned for 1970.

One of the main difficulties that faces a demographer who tries to analyze population statistics in Latin America is that of the reliability and accuracy of the data. According to census data, the intercensal growth rate in the Dominican Republic between 1950 and 1960 was 3.6% annually. Other estimates, after correcting for underenumeration, put the growth rate in that period at 3.4% per year. Carmen Miro, in his book "The Population of Twentieth Century Latin America" (1966) indicated that the Dominican Republic has the highest expected percentage of increase in Latin America. /1

The estimates used in the more recent studies are based on registered births and registered deaths. In 1962, the recorded birth and death rates were 33.1 and 6.9 per 1,000 population, respectively. These, however, were based on incomplete figures. The United Nations estimated that birth rate to be between 48 and 54 and the death rate between 16 and 20 per 1,000 population. The recorded mortality rate of infants under 1 year was 102.3 per 1,000 live births, but many who died soon after birth were not included in either birth or death registers. The accuracy of the data is thus limited, since rural people only register births and deaths when they occur in clinics - and only a small percentage of rural people are served by clinics. A study estimated the completeness of birth and death registration at 80% and 65% respectively. There is no reason to believe that the vital statistics registration system has been improved since 1960. /2

Even at the most conservative estimate the population growth rate is one of the highest in Latin America, and it is likely to increase slightly within the next few years. The Secretariat reports that 40.5% of all registered deaths occur in children less than one year and 58.5% occur in children of less than five years old. The majority of these deaths are due to unhygienic conditions, parasites and diarrhea, complicated by malnutrition. Many of the conditions contributing to these diseases are being improved, which will reduce considerably the high death rate at this age.

/1 - See Population Data Sheet" Annex I, Exhibit 2, and Summary of Fertility, Mortality and Population Growth in the Dominican Republic - Annex VI.

/2 - "Live Births and Deaths by Regions" Annex I, Exhibit 3.

Density patterns are irregular, and the overall figure of 174 per square mile can be misleading. Most of the people are concentrated in two regions of the country, one in the north centered around Santiago and the Cibao Valley, the other in the south in Santo Domingo and in the adjacent sugar-raising land along the coast. Both areas have densities in excess of 800 per square mile. The rest of the population is scattered throughout the lowlands in small towns and villages or on the large sugar plantations of the southeast and small farms elsewhere. Few people inhabit the eastern and southwestern extremities, and the highlands are virtually uninhabited at elevations over 1,500 feet. /1

Although basically a rural population - about 70 per cent live in rural areas - migration to the cities has been reaching significant proportions in the 1960's. During the dictatorship, migration was rigidly controlled. In spite of this fact, several cities have more than doubled their population in the decade 1950-60. Since the assassination, migration to the city has increased rapidly. Present estimates are that Santo Domingo has been increasing at an annual rate of 16% since 1961. The newcomers are, for the most part, illiterate rural people with little or no prospect for employment in the urban area. The majority of the migrants move into Santo Domingo from the area immediately surrounding the city. Others come from the fertile but densely settled Cibao Valley where farms have been fragmented to nearly garden size. For a number of reasons, including primitive technology, low wages and limited access to land ownership, the rural economy (at its present level of development) is unable to support the exploding population at more than a subsistence level. Most of the migrants are young adults, and the majority of them are women.

As a consequence of rapid urbanization and relatively little industrialization, unemployment and underemployment have reached serious proportions. Few rural males are able to obtain steady jobs once they reach the city as the unskilled labor force is saturated. At the same time, a rapidly increasing birth rate has resulted in a disproportionate number of young people who place added burdens on the productive work force.

/1 - See "Population-Area-Density Dominican Republic" 1968 Annex I, Exhibit 4.

One of the most significant features of the population is its extremely youthful character. In 1960 about 44.6 per cent of the population was under 15 years of age, 52.5 per cent was between 15 and 65, and 2.9 per cent was over 65. Largely responsible for the large proportion of children and young persons is the rising birth rate. The average family in 1960 included seven persons. The proportion of young adults is much higher in urban areas than in rural. Conversely, children and persons over 65 years of age constitute larger proportions of the rural than the urban population.

B. General Health Conditions in the Dominican Republic

Health conditions in the Dominican Republic during the 1960's have been characterized by a prevalence of infectious and parasitic diseases resulting from unsanitary environmental conditions and inadequate health practices. In addition to gastroenteric and helminthic infections, the most prevalent diseases include respiratory diseases, such as influenza, pneumonia, and bronchitis; tuberculosis of all types; malaria; venereal diseases; early infant and childhood diseases; and nutritional deficiency diseases.

Nearly all of the serious diseases in the country are directly or indirectly related to inadequate and unsanitary living conditions. Environmental sanitation in the better areas of the cities is in strong contrast with conditions in rural areas and the even worse squalor of urban slums. In many areas, the fly and rat population and attendant health hazards are increased by poor control of garbage and sewage disposal and the raising of livestock close to living quarters.

The major causes of death are determined from death certificates, although less than 20 per cent of those who die are attended by physicians, and of these only about 10 per cent are correctly certified. Consequently, about one-third of some 26,000 deaths registered in 1961 were attributed to old age and ill-defined or unknown causes. The greatest single reported cause of deaths (4,107) was gastrointestinal disease, usually the result of unsanitary living conditions and inadequate diet. The other principal causes were diseases of early infancy (1,974), cancers (660), diseases of the heart (626), pneumonia (579), accidents (558), bronchitis (544), tuberculosis (457), malaria (443) and anemias (390). Infant mortality is the most serious health problem facing the country, since over one-third of all deaths occurred among infants less than one year old, and more than 50% of all deaths occurred among children of less than five years of age.

In 1968, although 70 per cent of the urban population had some form of water service, less than 30 per cent had bacteriologically acceptable drinking water. Only five per cent had an adequate quantity of pure water.

The quality and quantity of rural water supplies are even less satisfactory. Over 85 per cent of the rural population have no service at all or have substandard facilities. Nearby rivers are used for bathing, laundering and drinking water as well as for waste disposal and watering animals.

Only approximately 65% of the urban population in the cities of Santo Domingo, Santiago and San Cristobal have sewage disposal facilities. Even these facilities are inadequate since not everyone is properly linked with the general sewage network.

The urban population increased from about 17% in 1930 to slightly over 30% in 1968, resulting in many overcrowded slum areas. The prevalence of substandard housing, amounting to nearly half of the existing units, is an important factor in the poor health situation. Nearly two-thirds of the houses in rural areas and many in the poorer urban sectors are so built as to provide favorable breeding grounds for insects, rodents and other disease carriers.

The diet of the average Dominican is poorly balanced and especially deficient in proteins. The daily average caloric intake for the total population in 1966 was 2,000 to 2,500. Meat consumption is low by Latin American standards, amounting to an overall average of less than 30 pounds a year per capita. Fish is lacking in most diets, except along the coasts. Dairying is limited, and whole milk consumption is estimated at less than 12 gallons yearly per capita, well below the Latin American average.

Dietary deficiency diseases, although not always reported, are widespread. Many deaths, especially among the 1 to 4 age group, can be attributed directly or indirectly to malnutrition. Deaths from anemias and infant diarrhea are common, largely because of unsanitary food handling.

As is unfortunately typical of an underdeveloped nation, preventative medicine occupies a much smaller place in the public health service than does curative medicine. Among most of the campesinos and urban poor, preventative measures and personal hygiene make little sense, especially when many diseases are blamed on bad fortune or are endemic and are therefore treated almost as a fact of life. Rarely is a doctor's care sought unless there is a specific and often serious illness.

Most curative medical care is provided by the Secretariat of State for Health and Welfare. Due to a serious shortage of personnel, facilities and equipment, the services of the Secretariat have tended to focus primarily on what planners consider the country's main health problem: infant and maternal well-being.

According to the most complete survey available, there were 82 government hospitals in 1967, with a total of 8,257 beds. Private hospitals, known locally as "clinicas", numbered 188, with 2,637 beds, bringing the total number of hospital beds to 10,894, or 2.8 per 1,000 population. There were 24 maternity hospitals, 14 of which were privately owned. Specialized hospitals include 2 tuberculosis sanitariums, 1 leprosarium, 1 mental hospital, 2 pediatric hospitals and 1 hospital for orthopedic rehabilitation. The remainder were "general" hospitals. Excluding the specialized institutions, there were about 1.85 government beds for 1,000 population.

Most of the medical care facilities are concentrated in Santo Domingo, including over 50 per cent of the doctors, over one-fourth of the hospitals, 50 per cent of the beds, and nearly all of the trained nurses. Other concentrations of facilities are to be found in Santiago, San Cristobal, La Vega, San Francisco de Macoris, La Romana, Barahona, San Juan de la Maguana, San Pedro de Macoris and Puerto Plata. Many of the smaller health centers in outlying areas operate without the services of a doctor and are thus reduced to serving as first-aid stations and vaccination centers.

In 1962 the Secretariat of Health published a ten-year Health Plan in accordance with the principles adopted at the Punta del Este Conference of 1961. This plan calls for a reorganization of the health services based on a division of the country into health regions. Available medical facilities and personnel would be distributed in these regions according to population needs. The main problems on which the plan focused were environmental sanitation, housing, rural health facilities, the training and recruitment of personnel and nutritional education. Particular attention was paid to maternal and infant health. By early 1966 political disturbances and the lack of adequate financing had delayed concrete implementation of the health plan. In 1967/68 the regional health plan was reviewed along with a program of maternal and child care, which included family planning as one of its basic components, and adopted as the 1968-70 Health Services Plan.

In general, it can be said that medical personnel in the Dominican Republic are insufficient in number, poorly distributed, and inadequately trained, especially in the area of public health. Though many physicians in the Dominican Republic are competent, they are handicapped by a lack of laboratories, medicines and supplies, and especially by a lack of trained nurses. The ratio of graduate nurses to doctors is 1:12. In 1967/68 there were approximately 1,935 physicians in the country (5 doctors per 10,000 population) of which an estimated 65% were located in or close to the city of Santo Domingo (a ratio of 16 doctors per 10,000 population). There are two universities in Santo Domingo that have medical schools, and these facilities graduate an average of 150 physicians a year.

The shortage of qualified technicians is particularly acute in the fields of health education, laboratory services, sanitary engineering and potable water control, hospital administration, and biostatistics.

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C. Climate of Opinion and Present Activities

The current favorable climate of opinion regarding population control activities in the Dominican Republic is largely the result of a carefully planned USAID/DR strategy which has enabled the GODR as well as private organizations to become increasingly more active in this field. Key principles of this strategy include: (a) the provision of full information to the press, as well as high-level GODR, church and political personages, as to the adverse effects of uncontrolled population growth on economic, political, and social development; (b) the provision of opportunities and mechanisms so that the GODR and private groups could receive technical assistance in studying and discussing problems of population pressure as well as possible solutions; (c) the development of a specific, acceptable population control program in the DR that took into account the attitudes, needs, and resources of this nation; and (d) keeping USAID/DR advisory and technical services well in the background so as to encourage the belief that the program was uniquely Dominican in nature.

The attitudes of key groups within the Dominican Republic can be summarized as follows:

1. Government of the Dominican Republic

The GODR position regarding population control is that a major effort must be made immediately to reduce population growth, but only through a comprehensive health program that focuses on the total physical, psychological, and moral well-being of the Dominican family. A program concentrating mainly on limiting births is unacceptable and would engender little or no support.

The present GODR proposal reflects this concern for the health and welfare of the nation. It projects a microdemographic program offering nationwide, comprehensive maternal/infant care services - including family planning - on a free and voluntary basis with a wide choice of contraceptive methods. This comprehensive approach will utilize pre-nuptial, pre-natal, intra-partum, and post-partum care activities and include venereal disease control, cervical cancer detection and treatment, improved nutrition, and gynecological services, including family planning among its major elements. All possible health facilities will be used: urban and rural hospitals, health centers and sub-centers, and rural clinics.

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The GODR's involvement dates back to 1964 at which time the Sub-Secretary of Health attended the Western Hemisphere International Planned Parenthood Federation Population Conference in Puerto Rico. This marked the first time that the GODR was officially represented at a conference in which Latin American governments recognized the seriousness of the population problem.

Early in 1966, USAID/DR began to give increased attention to population activities by exploring possible approaches to family planning with representatives of public and private institutions, political parties and religious groups. To advise the Mission and encourage more GODR participation, outside experts were brought in for short periods. Their function was to study the situation in the Dominican Republic and discuss, with Dominicans, those economic, social, and political problems associated with rapid population growth.

In May 1966, Dr. Clifford Pease, representing the Population Council, visited the Dominican Republic and submitted a report which recommended that family planning activities in the Dominican Republic be done "as part of regular medical services, such as the maternal and child health services of the country." He did not believe that the GODR was interested in a program dealing solely with population control, and he noted that many Dominican government officials as well as physicians showed little real understanding of the effects of population pressure on economic and social development. Dr. Pease also believed that continuing discussions between USAID/DR and the GODR on population problems should concentrate on linking possible solutions with specific USAID/GODR projects already underway in such areas as agriculture, education, and community development. In October 1966, the Dominican Republic was visited by experts from the IPPF. Their recommendations with regard to population growth and family planning indicated evidence of widespread acceptance of a program that focused on the health and welfare of mothers and children - with family planning as a natural aspect of the total program. At the same time, it was their conviction that any program which was concerned solely with birth control would not only meet with little or no support from both the public and private sectors, but might even arouse active opposition.

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Starting in early 1967, the GODR, with close advisory assistance from USAID/DR, began to take specific and significant measures to promote family planning. In January, the GODR, through its newly appointed Secretary of Health, indicated interest in the creation of a pilot population program that would be launched under a comprehensive health approach and later, expanded on a nationwide basis. Shortly thereafter, a special assistant to the Secretary of Health, accompanied by the HRD Chief, who was then acting as the Mission's Population Officer, visited Puerto Rico to observe maternal/infant care programs. In February, the Secretary of Health approved a maternal/infant care program based on a proposal prepared by this special assistant.

In March, following the AID/DR Mission's success in obtaining the services of a full-time public health/population advisor, an important interagency meeting sponsored by IPPF was held in New York City to coordinate external assistance to the GODR's comprehensive family planning activities. Also represented at this meeting were representatives of the GODR, CARE, Pathfinder Fund, Church World Services, and the IPPF, as well as AID/W and USAID/DR.

Mother's Day in the Dominican Republic, May 28, 1967, was highlighted by the announcement of a GODR plan for the creation of a nation-wide network of maternal-infant care clinics with family planning services as an integral feature. The plan was made public by a GODR official on a TV program featuring a panel of eight doctors representing a wide range of political positions. These physicians had just returned from an IPPF conference in Chile and were quite enthusiastic about the proposed program. In addition, the Secretary of Health inaugurated the first family planning clinic at the main Health Center in Santo Domingo. Public reaction was positive and widespread with regard to both of these events.

The GODR is presently staffing this clinic with two physicians. Their salaries, paid out of GODR funds, total about RD\$500 a month. Another government clinic in Santo Domingo is being used part-time by the Dominican Association for Family Welfare, a private group of citizens for family planning activities.

In September, 1967, the GODR sent a top-level delegation to the conference on "Population Policies in Relation to Development in Latin America" held in Caracas. Represented were the Secretariats of Health, Agriculture, Labor, Education, and the Technical Secretariat of the Presidency. In December, 1967, President Balaguer joined 20 other Chiefs of State in signing a UN document declaring family planning as a basic human right. The Dominican Republic and Colombia were the only Latin American nations to sign this Declaration of Human Rights.

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The most significant event in Dominican Republic Population control activities, however, was the creation of the National Population Council in February, 1968. Following the participation of the Dominican delegation at the Caracas Population Conference, the Secretary of Health led a move urging the formation of a national council; President Balaguer agreed and signed an official decree on February 14, 1968 (Decree No. 2091)¹, creating the National Population and Family Council. Presided over by the Secretary of Health, the council has members from the Technical Secretariat of the Presidency, the Dominican Association for Family Welfare, and the Secretariats of Agriculture, Labor, and Education. It will be responsible for coordinating both short-term and long-range programs, covering such elements as research, training, education, services, supervision, and evaluation. A technical advisory staff to the Council consisting of a sociologist, a demographer, and five physicians, has already been appointed. ²

2. Roman Catholic Church

Mainly because of the GODR's health and welfare approach to family planning, the Roman Catholic Church has been sympathetic though officially silent to present family planning activities within the Dominican Republic. It has been reported to USAID/DR that the church will not actively oppose a program that by utilizing a comprehensive, non-coercive MIC approach, as well as a wide choice of methods, is directed toward enriching the quality of Dominican life.

Moreover, the church has permitted clergymen to participate in international conferences dealing with population matters and to join the local Dominican Association for Family Welfare, an affiliate of the IPPF. The Rev. Priamo Tejada, who is also an M.D., served not only as an official Dominican Representative to the Eighth International IPPF Conference but as official representative of the Church in the Dominican Republic. In 1967, he also attended the IPPF meeting in New York which was called to coordinate external assistance to population programs in the DR. Rev. Euribiades Concepcion was sent by the church to CELAP in Chile in 1967 to study demography and population problems. Both clergymen are now advisors on population matters to the church.

¹ - Copy of Decree #2091, Annex I, Exhibit 5.

² - Plan for Population Council, Annex I, Exhibit 6.

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Church officials have also held a series of meetings on the population explosion and family planning, which have generally been favorable to the GODR program. In a recent conference of priests and nuns who teach in the nation's parochial schools, the conference key speaker, Archbishop Polanco Brito, General Administrator of the Catholic Church in the Dominican Republic, spoke about the dangerous implications of the population explosion and the need for a sound program in the GODR.

3. Communication Media

The press, radio and television have almost universally supported population control concepts and practices for use in the Dominican Republic. Editorials in all the leading newspapers have long flagged the population explosion as one of the prime reasons for the lagging economic, political, and social development of the nation and have exhorted the government to provide leadership in family planning programs. Especially singled out for praise has been the GODR's insistence that family planning be done within the context of expanded health programs. When the government formally announced its nationwide maternal-infant care program on Mother's Day (May 28, 1967), the medium chosen was a television panel show, with eight prominent physicians representing various political ideologies participating on the panel. Each of the major newspapers has printed editorials and articles not only emphasizing the need for population control means, but lauding the GODR for reacting to this problem with a positive program designed to safeguard and promote the health and welfare of the nation, not a program whose effect would merely reduce the number of births.

When the government officially opened the first family planning clinic at the Main Health Center in Santo Domingo in May 1967, and a new health center in La Romana in July, press and TV coverage was extensive and favorable.

In 1967, the Dominican press printed 253 articles in favor of family planning as opposed to 4 against the program. The ratio from January to March 1968 was 76 to 10. The reason for the rise in opposition was a reaction to reports that United States Government officials had expressed the opinion that family planning should be required as a precondition to all United States foreign aid programs.

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4. Present Activities

Presently, two family planning centers are in operation, both in the city of Santo Domingo. One is operating in the Santo Domingo Health Center in coordination with a maternal-infant care program, and the other is operated by the Dominican Association for Family Welfare in a GODR health clinic at Los Minas.

Although both centers have limited human and material resources, the results to date have been quite encouraging. The combined attendance at the two centers is about 1,300 patients a month. Statistics for the first four months of 1968 show dramatic increases in the number of new patients actually receiving contraceptives. In the Santo Domingo Health Center the months of March-April show a 36% new patient increase above January-February. Corresponding statistics for the center at Los Minas show a 51% increase. A total of 1,340 women have been provided with contraceptives at both of these centers during the first four months of 1968. The preference of these women for contraceptive materials is as follows: IUD's - 64%, pills - 22%, other methods - 14%.

Both clinics engage in health education activities as well as provide services such as physical examinations, Pap smears, biopsies, and disease control. A Peace Corps Volunteer is working with both centers in attempting to improve their educational programs, administrative organization, and statistical record keeping. Six other Peace Corps Volunteers are working in medical facilities in the six other target areas which are to be reached in the first year of the family planning program.

The gradual evolution of GODR activities in family planning and population control - always with close USAID/DR technical advice and support - has now crystallized into a single acceptable approach that can be summarized as follows: a microdemographic program that emphasizes a strengthening of the health infrastructure that will permit the provision of nationwide, comprehensive maternal/infant care services - including family planning - on a voluntary, non-coercive basis. Included in such a program will be nuptial, prenatal, intra-partum, and post-partum care activities carried out in an urban-rural system of hospitals, health centers and sub-centers, rural clinics, and military and police aid stations. This requires the completion of a regional, coordinated network of health facilities and the remodeling of some base hospitals to transform them from surgical into general hospitals by including OB, Gyn. and pediatric wards, and the construction of adequate outpatient facilities from maternal-infant care clinics.

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The USAID/DR has supported this GODR approach to family planning with the following grant funded programs in FY 67 and FY 68 (in thousands):

| | <u>Total</u> | <u>Personal Services AID</u> | <u>Services Contract</u> | <u>Participants</u> | <u>Commodi- ties</u> | <u>Other Costs</u> |
|----------------------|--------------|----------------------------------|------------------------------|---------------------|--------------------------|------------------------|
| FY 67 (Actual) | 86 | 2 | 73 | - | 7 | 4 |
| FY 68 (Estimated) | 572* | 20 | 86 | 106 | 360 | - |
| Total | 658 | 22 | 159 | 106 | 367 | 4 |

* 226 obligated, 346 to obligate

IV. PROJECT JUSTIFICATION

Gains made in recent years in the Dominican Republic GNP have been largely offset by the high annual population growth rate. The purpose of this program is to reduce that growth rate and thereby to permit the gains in GNP actually being achieved to be realized by Dominicans in the form of increasingly better lives.

A. The Maternal Infant Care Approach

Unfortunately, the process of changing the demographic growth pattern of a country is not as easy as simply disseminating contraceptive commodities and a readily understandable explanation of how to use them. To a very large degree, the success of a population control project depends on changes in the attitude of the individuals involved. Once the desirability of fewer but healthier children has been accepted, a basis has been established for an effective program.

The Dominican Republic has embarked on a program of family planning that is integrated into a program of maternal and child care. This decision was taken in the belief that such a program offered the most advantageous way of coping with both the medical and the attitudinal aspects of the growth rate problem.

It is recognized that women are especially "susceptible: to family planning and birth control programs during and immediately after pregnancy. Especially if they are treated in an adequate health facility, and come to believe that the new child has a good chance of surviving his first months, available experience and studies indicate that significant results can be achieved.

Although no knowledge or attitude surveys have been undertaken in the Dominican Republic, studies in other developing Latin American countries have clearly demonstrated six major sets of findings (Family Planning and Population Programs, Bernard Berelson, University of Chicago Press, 1966):

1. On the whole, married couples in the developing countries want fewer children than they will have under present fertility conditions--enough fewer to make a demographic difference if actuality were the equivalent of desire (See Table No. 1). It has been estimated that if couples could do what they say they would like to do, the growth rate in a typical developing country would decline by one point.

2. A substantial number of people in the developing countries want no more children (See Table No. 2). The main reason for their attitude is the economic welfare of the family including the provision of educational and occupational opportunities for the children.
3. Whenever asked, substantial proportions of married couples approved of family planning in principle, expressed interest in learning to control their own fertility, said they would do something if they had the appropriate means. They approved of government programs along those lines. In addition, an overwhelming majority of women strongly disapproved of induced abortions but, under the pressure of circumstances, many have had them.
4. The level of information regarding reproduction, fertility control and contraceptive methods is generally low. In some countries, fewer than 10% of the women have any knowledge regarding the physiology of reproduction. While more people know that fertility control is possible, large proportions do not know of any contraceptive method.
5. The practice of family planning ranges from very low to moderately low, a major determinant being the number of children the parents already have.
6. Husbands and wives have essentially the same attitudes. Although men tended to want more children than women, the differences were slight.

New ideas are more easily accepted when they are coupled with older, already accepted ones. In this way, potential opposition is kept to a minimum and a maximum of public and private support is engendered. This is one of the major reasons for the micro-demographic approach; that is, for including family planning as an integral component of the maternal-infant care program. Such Programs have been in operation for a number of years in the Dominican Republic and have widespread support. Indeed, the Secretariat of Health views maternal-infant care as one of its principal functions.

Under the maternal-infant care program adopted by the GODR as its microdemographic approach to family planning, services will be provided in the following stages:

1. Prenuptial Care

Provision of facilities for premarital blood testing, mainly for the early detection of syphilis so as to reduce congenital cases (studies show that 10 to 15% of pregnant Dominican women have syphilis).

2. Prenatal Care

Provision of facilities so as to increase the percentage of women receiving prenatal clinical services, thus reducing maternal morbidity as well as neo-natal morbidity and mortality. These services will include physical examination, disease control, and dietary education as well as nutritional supplementation.

3. Intra-Partum and Post-Partum Care

Provision of facilities so as to increase the number of women returning after delivery for pelvic examinations, cervical cancer tests, and family planning services, as well as the correction of any other condition resulting from the previous pregnancy, such as anemia and cervicitis.

In spite of their limited resources, Dominican health clinics are generally well patronized and the concern of Dominican mothers for their children is clearly evident. This concern and the consequent attendance of health facilities will be increased as the health subcenters and rural clinics expand their services and begin engaging in health education activities. Since a considerable proportion of maternal mortality is the result of induced abortions, it is to be expected that mothers will further avail themselves of the family planning services offered by these health subcenters and clinics. Furthermore, the psychological climate of a maternal-infant care clinic is infinitely better since no woman need feel ashamed nor embarrassed merely by her presence in such a health facility.

An additional reason argues strongly for integrating family planning into a MIC program. It has been proven statistically that contraception which begins a year after delivery is less productive of results than contraception commenced in the post-partum period before the time of the first ovulation. This is due to what has been termed a "pregnancy potential." Assuming that contraception is not being used and a 5% incidence of infertility after any delivery, 50% of women will conceive in the first three months after giving birth. Another way of putting this is that for any one cycle in the first three months after delivery, a woman's chances of becoming pregnant are three out of ten. Four-fifths of this pregnancy potential is dissipated by the end of the year so that in the twelfth month after delivery the chance of becoming pregnant for that cycle is only .06 out of ten. Early treatment will therefore be far more effective in preventing conception.

The period before and after delivery offers unique opportunities to reach women in a systematic fashion. With an improvement in maternity facilities, it is to be expected that more and more women will deliver under medical supervision. Thus, they will be under the influence of a doctor or a nurse for several months. In a maternity clinic, with a trusted authority at hand, the psychological setting could scarcely be improved upon for the dissemination of family planning information and advice. Even if the woman does not heed the advice at that time, the concept will have been explained.

With the termination of the construction of the new health facilities as well as the training of adequate numbers of medical and paramedical personnel, the program will be able to operate at a considerably reduced financial input. In addition, the program's capability to treat new patients will be more than adequate as the number of women who must be treated begin to level off in the fifth year. It is assumed that the GODR will continue to operate the program after FY 1972.

An important component of the MIC approach will be a maternal-infant care feeding program to correct malnutrition among expectant mothers and young children. To meet this problem, the health maternity subcenters and rural clinics will be utilized as food distribution centers. Mothers with pre-school children (0-4 years of age) as well as pregnant women will qualify as recipients of this food. It is estimated that 13,153,788 pounds of food will be distributed to 405,981 recipients in the seven initial target areas, during the first year of the program. The value of this food is estimated at RD\$3,127,969, based on 2.7 lbs. of food per recipient per month and an average cost of 0.2378 cents per pound. See Annex I, Exhibit 7, for a breakdown of the PL 480 contribution by commodity.

TABLE No. 1 *
ACTUAL AND "IDEAL" FAMILY SIZE

| <u>COUNTRY</u> | <u>ACTUAL FAMILY SIZE</u> | <u>"IDEAL" FAMILY SIZE</u> |
|--------------------|---------------------------|----------------------------|
| COLOMBIA (urban) | 4.8 | 3.6 |
| VENEZUELA (urban) | 4.3 | 3.5 |
| MEXICO (urban) | 5.0 | 4.2 |
| PANAMA (urban) | 3.8 | 3.5 |
| BRAZIL (urban) | 3.3 | 2.7 |
| COSTA RICA (urban) | 4.3 | 3.6 |

* Family Planning and Population Programs, Bernard Berelson,
University of Chicago Press, 1966.

TABLE No. 2

APPROXIMATE PERCENTAGES WANTING NO MORE CHILDREN

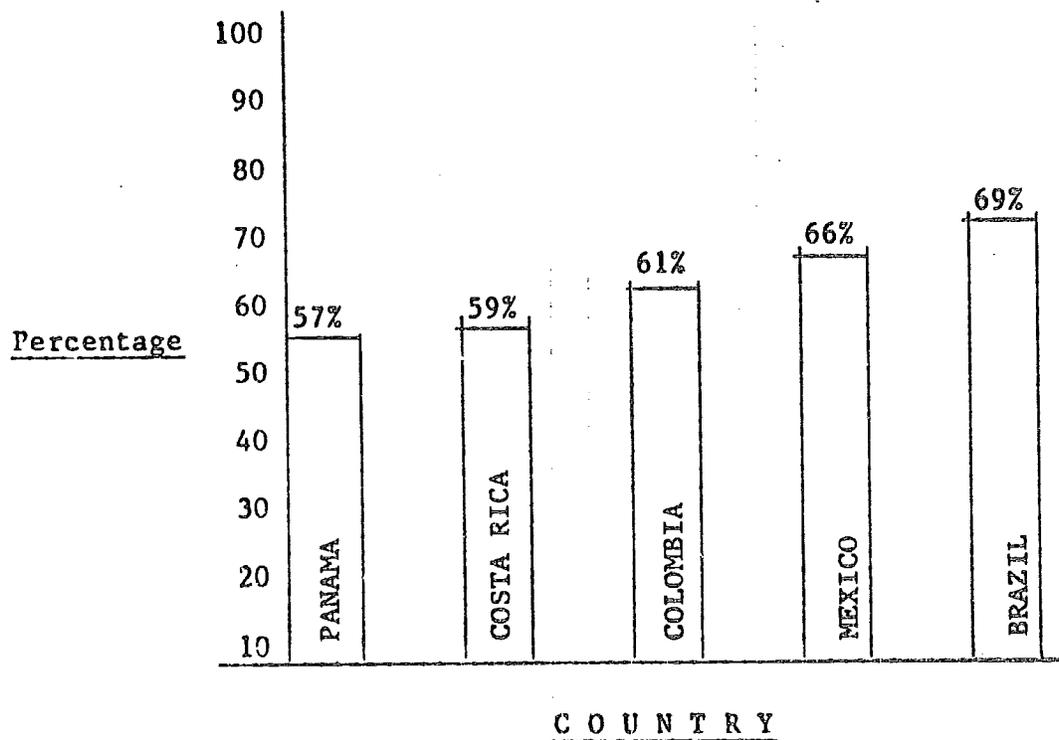


TABLE No. 3 *

PERCENTAGE NOT WANTING MORE CHILDREN BY NUMBER OF CHILDREN

| <u>COUNTRY</u> | <u>NUMBER OF CHILDREN</u> | | | | | |
|----------------|---------------------------|----|----|----|----|--------------|
| | 0 | 1 | 2 | 3 | 4 | 5 Or more |
| BRAZIL | 21 | 53 | 85 | 95 | 93 | 93 |
| COLOMBIA | 15 | 45 | 55 | 67 | 79 | 93 |
| COSTA RICA | 20 | 45 | 60 | 67 | 78 | 86 |
| MEXICO | 16 | 30 | 48 | 64 | 76 | 86 |
| PANAMA | 11 | 35 | 51 | 70 | 86 | 94 |

* Family Planning and Population Programs, Bernard Berelson, University of Chicago Press, 1966.

B. Expected Results of Program

The population of the Dominican Republic is presently estimated at 4 million people, the annual growth rate being 3.4%. The program's goals are illustrated in the following chart:

CHART No. 1

| Year No. | A | B | C | D | E | | F | H | I | J |
|-------------|--|---|--|---|-----------------|--------------------|--|--|----------------|---|
| | Total # of women that must be under treatment | # of new women that must be treated | # of women that will be successfully controlled | No. of women that program is capable of treating | B I R T H S | | Births to be prevented in following year | Crude Birth rate per 1,000 people | Growth Rate | |
| | | | | | With Program | Without Program | | | | |
| 1(FY69) | 24,591 | 24,591 | 18,176 | 27,000 | 192,000 | 192,000 | -- | 48.0 | 3.40 | |
| 2(FY70) | 65,762 | 52,130 | 48,664 | 80,970 | 194,392 | 198,392 | 4,000 | 47.0 | 3.33 | |
| 3(FY71) | 135,588 | 109,314 | 107,166 | 148,438 | 194,455 | 205,152 | 10,699 | 45.5 | 3.20 | |
| 4(FY72) | 223,421 | 143,046 | 165,332 | 171,800 | 189,669 | 211,724 | 22,055 | 43.0 | 2.99 | |
| 5(FY73) | Non Applicable | Non Applicable | Non Applicable | Non Applicable | 181,712 | 218,054 | 36,342 | 40.0 | 2.71 | |

The FY 1970 program goal is to reduce the national growth rate from 3.40% to 3.33% by lowering the birth rate from 48 to 47 births per thousand people. To achieve this, 4000 births must be prevented.

During FY 1969 the program will be directed at seven target areas which have a female population of 277,073 between the ages of 15 and 44. These women, under normal circumstances, will deliver 60,956 live children in FY 1970. A four thousand live birth reduction would involve the successful control of 6.56% or 18,176 of these women.

Based on present experience as well as studies from other developing countries, it is estimated that 70% of the women enrolled in the program will request IUD's and that the remaining 30% will request pills. With respect to IUD's, we estimate a 30% discontinuance factor over a period of a year. The discontinuance factor with respect to pills will be about 15%. Thus, the number of women that the program must actually treat in FY 1969, 24,591, is greater than the number that must actually be controlled. Similar calculations have produced the remaining data in Columns A and C.

It is estimated that after having remained with the program for a one-year period, 25% of the successfully controlled women will drop out in the following year. 75% will continue and the total number of women that must be treated in any one year will therefore be reduced by these successful carryovers from the preceding years. The number of new women that must be treated in any one year is illustrated in Column B. Column I reflects the decrease in the annual growth rate that will occur if the crude birth rate drops according to Column H. A drop in the crude death rate has also been taken into consideration. Columns E and F depict the total number of live births that will occur with and without the family planning program.

During the first year of the program, it has been estimated that one doctor, working a five-hour day, a five-day week, and a fifty week year, will be able to treat an average of 3,000 new patients. This figure will decline to 2330, 1982 and 1800 new patients in succeeding years. This is because a physician's time will increasingly be spent on seeing old patients in the latter years of the program.

CHART No. 2

| Year # | New Patients* | Old Patients* | Physician Years | Total physician capability for new patients |
|-----------|----------------------|---------------------|-----------------|---|
| 1 (FY 69) | 3000 (2500 hours) | - | 9 | 27000 |
| 2 (FY 70) | 2330 (2221 hours) | 1665 (279 hours) | 29 | 80,970 |
| 3 (FY 71) | 1982 (2076 hours) | 2542 (424 hours) | 57 | 148,438 |
| 4 (FY 72) | 1800 (2000 hours) | 3007 (500 hours) | 74 | 171,800 |
| 5 (FY 73) | Non applicable | Non applicable | Non applicable | Non applicable |

*It is estimated that a physician will spent a total of 25 minutes with every new patiente during a one year period and a total of 10 minutes every succeeding year.

As can be seen by a comparison of columns A and C in Chart No. 1, the program's capacity exceeds the number of new patients that must be treated in any one year.

TABLE No. 1

Target Areas - for FY-69

| MUNICIPALITY | POPULATION | WOMEN (15-44) | DISTRIBUTION | NO. OF EXPECTED BIRTHS | SUCCESSFUL PATIENTS FIRST YEAR |
|-------------------|------------|------------------|--------------|------------------------------|--------------------------------------|
| Distrito Nacional | 789,798 | 161,908 | 58.44 | 35,619.9 | 10,622 |
| Barahona | 45,933 | 9,416 | 3.39 | 2,071.6 | 616 |
| San F. de Macorís | 136,540 | 27,991 | 10.11 | 6,157.9 | 1,838 |
| La Romana | 43,192 | 8,854 | 3.19 | 1,947.9 | 580 |
| Puerto Plata | 73,428 | 15,053 | 5.43 | 3,311.6 | 987 |
| San P. de Macorís | 46,331 | 9,498 | 3.43 | 2,089.5 | 623 |
| Santiago | 216,356 | 44,353 | 16.01 | 9,757.6 | 2,910 |
| TOTAL | 1,351,578 | 277,073 | 100.00 | 60,956.0 | 18,176 |

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TABLE NO. 2

POPULATION IN THE SEVEN ACTION AREAS IN 1960 AND 1968, INTERCENSAL GROWTH RATE
AND RURAL POPULATION IN 1968

| MUNICIPALITIES | POPULATION IN 1960 | GROWTH RATE (1950/60) | POPULATION IN 1968 | RURAL POPULATION IN 1968 |
|-------------------|-----------------------|--------------------------|-----------------------|-----------------------------|
| Distrito Nacional | 464,970 | 6.86% | 789,798 | 136,154 |
| Barahona | 37,490 | 2.57 | 45,933 | 19,659 |
| S.F. Macorís | 103,010 | 3.58 | 136,540 | 95,551 |
| La Romana | 28,660 | 3.50 | 43,192 | 6,450 |
| Puerto Plata | 61,850 | 2.16 | 73,428 | 51,303 |
| S.P. Macorís | 41,800 | 1.30 | 46,331 | 22,831 |
| Santiago | 172,960 | 2.83 | 216,356 | 97,017 |
| TOTAL | 910,740 | 4.50 | 1,351,578 | 428,965 |

TABLE No. 3
PERCENTAGE URBAN POPULATION IN 1960 AND 1968 FOR THE
SEVEN ACTION AREAS

| MUNICIPALITY | 1960 | 1968 |
|-------------------|------|------|
| National District | 79% | 83% |
| Barahona | 54 | 57 |
| S.F. Macorís | 26 | 30 |
| La Romana | 77 | 85 |
| Puerto Plata | 30 | 30 |
| S.P. Macorís | 52 | 51 |
| Santiago | 49 | 55 |
| TOTAL | 62% | 64% |

TABLE NO. 4

| Program Period | Year | Crude Death Rate 1000/ People | Crude Birth Rate 1000/ People | National Rate of Natural Increase % | Dominican Population | | Births | | Births to be Prevented |
|-------------------|---------|-------------------------------------|-------------------------------------|--|----------------------|--|--------------------|-----------------|------------------------------|
| | | | | | With Program | Without Pro- gram Con- stant RNI | Without Program | With Program | |
| 1 | 1968/69 | 14.0 | 48.0 | 3.40 | 4,136,000 | 4,136,000 | 192,000 | 192,000 | - |
| 2 | 1969/70 | 13.7 | 47.0 | 3.33 | 4,273,729 | 4,277,000 | 198,392 | 194,392 | 4,000 |
| 3 | 1970/71 | 13.4 | 45.5 | 3.20 | 4,410,916 | 4,421,000 | 205,152 | 194,455 | 10,697 |
| 4 | 1971/72 | 13.1 | 43.0 | 2.99 | 4,542,802 | 4,572,000 | 211,724 | 189,669 | 22,055 |
| 5 | 1972/73 | 12.8 | 40.0 | 2.71 | 4,666,367 | 4,727,000 | 218,054 | 181,712 | 36,342 |

TABLE No. 5

Percentage of women not eligible for immediate contraception based on experience in other countries:

| | <u>Approximate Percentages</u> |
|-------------------------------------|--------------------------------|
| a) Pregnant and lactating | 20 to 30% |
| b) Primary and Secondary sterility | 5 to 15% |
| c) Already practicing contraception | 5 to 10% |
| d) Others | <u>5% -</u> |
| Total | 35 to 55% |

TABLE No. 6

Projection of total number of women between 15 and 44 years of age in the seven target regions:

| <u>Year</u> | <u>Number of Women (15-44 years old)</u> |
|-------------|--|
| 1968 | 277,073 |
| 1969 | 289,541 |
| 1970 | 302,570 |
| 1971 | 316,186 |
| 1972 | 330,414 |

During the first 15 years of the program, the reduction of fertility will not affect the number of women between 15 and 44 years old. It will, however, reduce the maternal mortality due to a lower number of deliveries.

V. PROJECT DESCRIPTION

In February, 1968, the Secretary of Health adopted the 1968-70 Regional Health Services Plan, featuring an expanded program of maternal and child care clinics and including family planning facilities as an integral component. This Health Service Plan was based in large measure on an older health plan (1962-71)¹, previously discussed in Section II, that had recommended a future regionalization of the nation's medical facilities, with special emphasis on maternal and infant care services. The Secretary felt the latter proposal could be gradually and successfully implemented through the new 1968-70 Regional Health Services Plan, and thereby offer family planning activities to the general public through a nationwide urban-rural network of MIC clinics, on a voluntary, non-coercive basis.

In its initial year, the family planning program is being directed toward seven target areas of high population concentration. The USAID/DR has already assisted this effort by providing grant funds for the training of doctors and the purchase of contraceptives and related medicines. Two maternal-infant care/family planning centers are already in operation in Santo Domingo, and arrangements to staff and equip the six other centers should be completed by July 1968. In the succeeding years, MIC/family planning operations will be expanded as additional medical facilities are constructed or re-modeled.

The loan proposal will assist the Secretariat of Health in putting priority portions of the 1968-70 Health Services Plan into operation by providing financial assistance for an expansion in the number of medical facilities devoted to maternal-infant care and family planning. The loan proposal will not, however, provide funds for programs not directly related to maternal-infant care and family planning. The loan proposal will not, however, provide funds for programs not directly related to maternal-infant care and/or family planning, such as rural sanitation or social welfare projects. The following loan components are planned:

¹ Five regional administrative headquarters were contemplated, to supervise 31 health areas (consisting of the nation's 26 provinces plus 5 "area" size offices within the National District). A main hospital was proposed for each provincial capital to provide integrated preventive and curative medical services. To date this Regional Health Plan has not been implemented.

| | |
|---|---------------------|
| <u>Construction</u> (including new construction, and remodeling) of 132 medical facilities | \$ 5,207,500 |
| <u>Equipment</u> : general hospital equipment and vehicles properly to equip the above facilities | 2,500,000 |
| <u>Education and Training</u> of 3085 medical and para-medical personnel | 1,033,350 |
| <u>Technical Assistance</u> - providing maintenance and nursing education advisors | 395,000 |
| <u>Studies</u> of administrative reorganization of health services | 100,000 |
| <u>Mass Media program</u> ; i.e., preparation and distribution of materials to develop and maintain positive attitude towards family planning | 118,000 |
| | <u>\$ 9,353,850</u> |

A. Construction

To assist in effectively implementing the Regional Health Services Plan, with special emphasis on maternal-infant care/family planning aspects, \$5,207,500 in loan funds will be used to construct or remodel the following medical facilities: 1

1. Hospitals

There are presently 33 essentially "surgical" hospitals in the country, providing very limited medical assistance in certain fields. Fifteen of the most important of these, located in the most densely settled areas, have been selected to be converted into "general" hospitals which provide a more comprehensive range of medical services. These 15 will be remodeled--maternity areas will be enlarged; obstetric, gynecology, and pediatric wards, as well as MIC/family planning clinics will be added; and basic necessities will be assured.

One small hospital will also be constructed in the provincial capital of Cotui. Once completed, each health area in the country will be serviced by a general hospital, offering both preventative and curative services, that will also act as a nucleus for all health facilities in that area. The total cost for this portion of the program is \$3,611,100.

1 - "Existing and Programmed Buildings and Beds" - Annex I, Exhibit 8. Distribution of Hospitalization Centers, Annex I, Exhibit 9.

These area hospitals will carry out the following functions:

- | | |
|--------------------------------|--|
| <p>a. Health Promotion:</p> | <p>Family Planning Infant Care Prenatal Care Complementary Feeding Hospitalization of Pregnant Women and Children Sanitary Education</p> |
| <p>b. Health Protection:</p> | <p>Communicable Diseases Control Immunizations Environmental Sanitation ;and Food Control</p> |
| <p>c. Health Recuperation:</p> | <p>Out-patient Medical Attention In-patient Medical Attention Emergency</p> |

2. Health Maternity Sub-centers

These facilities are generally located in towns and larger villages (approximately 2500-3000 population in the immediate vicinity) that are too small to require a general hospital and too large to be served by a rural clinic. The sub-centers will have a resident staff of two doctors and several nurses, and will provide most of the less technical maternal-infant care services of a general hospital (delivery room, eight-bed maternity ward), as well as an area for family planning activities. The more serious illnesses in the region will be referred to the area hospital.

Under the loan 15 health sub-centers will be constructed and an additional 12 will be remodeled, for a total cost of \$670,800.

3. Health Centers

Health centers are existing medical facilities that offer only preventative health services. Those patients requiring curative treatment are referred to appropriate facilities. In view of the modern approach toward integrated medical units, the loan will not provide funds for new construction of this type. Instead, two existing health centers (Puerto Plata and Santiago) will be remodeled, similarly equipped, and will offer the same MIC/family planning services as the health sub-centers.

4. Rural Clinics

An important purpose of the Medical Services Plan is increasing medical services in the rural areas, since an estimated 85% of all medical facilities are located in urban areas. The rural clinics will be located in small villages and will be serviced by a resident nurse and a visiting medical team (physician and graduate nurse). The visiting medical team will be able to provide basic maternal care and family planning services, and will also refer patients to larger facilities for special treatment. The full-time auxiliary nurse can provide some emergency care and also disseminate family planning and health education information.

At present there are 19 rural clinics, 14 of which were built in 1967 with funds from the \$40 million Emergency Loan. Under the proposed loan an additional 89 rural clinics will be constructed, at a cost of \$925,600.

The following is a list of facilities by region, type, and cost, that will be constructed or remodeled with funds from the proposed loan:

Health Region No. 1: Santo Domingo, San Cristobal, and Peravia

| | |
|--|------------|
| 1. Remodelling of the existing hospital Dr. Moscoso Puello with the addition of an annex for out-patient clinic | \$ 451,255 |
| 2. Remodelling of the existing hospital Dr. Luis E. Aybar with the addition of an annex for out-patient clinic | 436,723 |
| 3. Remodelling of the existing hospital Padre Billini | 305,942 |
| 4. Annex for Maternity to the Juan Pablo Pina Hospital in San Cristobal | 153,920 |
| 5. Remodelling and enlargement of Childrens Hospital, maternity hospital and health center | 72,800 |
| 6. Construction of a health subcenter in Yamasa, San Cristobal Province, with 35 beds | 33,280 |
| 7. Construction of 8 rural clinics in: La Victoria, Villa Mella, Los Alcañizos, Yaguata, Valdesia, Rancho Arriba, Villa Guerra, and El Limonal | 83,200 |

1,537,121

Health Region No. 2: Santiago, Puerto Plata, Valverde, Santiago, Rodriguez, Monte Cristi, and Dajabon

| | |
|--|---------|
| 1. Remodelling of the existing J.M. Cabral Hospital in Santiago with the addition of a wing for Obstetrics | 551,200 |
| 2. Remodeling of the existing hospital in Monte Cristi | 129,407 |
| 3. Remodeling of the existing hospital in Dajabon | 52,718 |
| 4. Construction of 6 health subcenters that eventually can be used as Maternity Centers in Gaspar Hernandez, Villa Vasquez, Guayubin, Pepillo Salcedo, and Altamira, Av. Duarte (Santiago) | 199,680 |
| 5. Remodeling health subcenter in Luperon and Imbert | 41,500 |
| 6. Enlargement of wing of Puerto Plata Health Center | 10,400 |
| 7. Construction of 29 rural clinics in Villa Bisono, Janico, Licey al Media, Villa Gonzalez, Punal, Pedro Garcia, Hatillo de San Lorenzo, Sabana Iglesia, La Isabela, Jaibon, Laguna Salada, Jicome Arriba, Amina, Guatapanal, Cayetano Germosen, Jose Contreras, Canca La Reina, San Victor, Los Almacigos, Los Quemados, Gurabo, Naranjito, Castanuelas, Las Matas de Santa Cruz, Villalobos, Hatillo Palma, Partido, Capotillo, and Esperanza | 301,600 |

Health Region No. 3: Duarte, La Vega, Sanchez Ramirez, Salcedo, Trinidad Sanchez and Samana

| | |
|---|---------|
| 1. Remodeling of the existing hospital San Vicente de Paul in San Francisco de Macoris | 178,880 |
| 2. Remodeling of the existing hospital in Nagua | 137,280 |
| 3. Construction of area hospital in Cotui | 121,753 |
| 4. Construction of 3 health subcenters that eventually can be used as Obstetrics Centers in Maimon, Cevicos, and Fantino | 99,840 |
| 5. Remodeling of 4 health subcenters in Villa Rivas, Pimentel, Castillo and Villa Tapia | 62,400 |
| 6. Construction of 24 rural clinics in Colon, Las Guaranas, Las Malenas, La Jaya, Ceyba de los Pajaros, Agua Santa de Yuma, Hostos, Burende, Rio Verde, Piedra Blanca, Barranca, Las Capullas, Rincon, Jayabo Afuera, Santa Ana, Boba Arriba de Tenares, El Pozo, San Jose de Patrona, Las Lagunas, Las Matas, Hatillo, Las Garitas, Juana Vicenta, and Baoba del Pinal | 249,600 |

**Health Region No. 4: Barahona, Pedernales, Independencia,
Bahoruco, Azua, San Juan de la Maguana,
and Estrelleta**

| | |
|---|----------------|
| 1. Enlargement of the Jaime Mota Hospital in Barahona | 238,784 |
| 2. Remodeling of the existing hospital in Azua | 235,810 |
| 3. Remodeling of the existing hospital in San Juan de la Maguana (Santome Hospital and Health Center) | 242,195 |
| 4. Completion of a wing of Las Matas de Farfan hospital to be used as health center | 187,200 |
| 5. Construction of four health sub-centers that eventually can be used as Obstetric Centers in Tamayo, Duverge, El Cercado, and Hondo Valle | 133,120 |
| 6. Remodeling of 3 health subcenters in Padre de las Casas, Banica, and La Descubierta | 46,800 |
| 7. Construction of 14 rural clinics in Mercia, El Jobo, Postrer Rio, Pueblo Viejo, Estebania, Las Yayas, Peralta, Sabana Alta, Bohechio, Vallejuelo, Carrera de Yegua, Juan de Herrera, Pedro Santana, and El Llano | <u>145,600</u> |
| | 1,229,509 |

**Health Region No. 5: San Pedro de Macoris, La Romana,
El Seybo, and La Altagracia**

| | |
|--|----------------|
| 1. Remodeling of the existing hospital in El Seybo | 115,232 |
| 2. Construction of a health subcenter in Miches | 33,280 |
| 3. Remodeling of the health subcenter in Hato Mayor | 10,400 |
| 4. Construction of 14 rural clinics in Soco, San Geronimo-El Puerto, Batey Dona Ana, Los Montones, Consuelo, Pedro Sanchez, Vicentillo, Las Canitas, El Cuey, Don Lopez, Gaymate, El Chavon, El Salado, and Boca del Yuma. | <u>145,600</u> |
| | 304,512 |

Projects by Types and Costs

| | 1 | 2 | Regions 3 | 4 | 5 | TOTAL |
|--|-----------|-----------|--------------|-----------|---------|-----------|
| Remodeling and Enlargement of Hospitals (15) | 1,420,641 | 733,325 | 316,160 | 903,989 | 115,232 | 3,489,347 |
| Construction of Hospitals (1) | - | - | 121,753 | - | - | 121,753 |
| Remodeling of Health Maternity Subcenters (12) | - | 52,000 | 62,400 | 46,800 | 10,400 | 171,600 |
| Construction of Health Maternity Subcenters (15) | 33,280 | 199,680 | 99,840 | 133,120 | 33,280 | 499,200 |
| Construction of Rural Clinics (89) | 83,200 | 301,600 | 249,600 | 145,600 | 145,600 | 925,600 |
| Total | 1,537,121 | 1,286,605 | 849,753 | 1,229,509 | 304,512 | 5,207,500 |

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B. Equipment and Commodities

Under the loan, \$2.5 million will be made available for the purchase of equipment. The list of equipment, by general category, is attached as Annex , Exhibit , and is summarized as follows: surgical and examining instruments; 1300 beds; operating room and delivery room equipment; electrical and mechanical equipment (generators, autoclaves, X-ray); laboratory and blood bank equipment; and vehicles. \$2,500,000

The process of purchasing contraceptives with loan funds unavoidably makes public A.I.D.'s association with this program. This would be counter to the basic strategy of the USAID program in the Dominican Republic to minimize our participation. For this reason, contraceptives will be provided as needed with grant funds which allow for more discretion as to source of financing. Fortunately, USAID has already purchased, with grant funds sufficient contraceptives of various kinds to cover the needs for the entire first year and a half of the program.

C. Health Manpower and Training

The Secretariat of Health has the following personnel: Additional Requirements:

| | | |
|--------------------------|------|-----|
| 1. Physicians (MD) | 661 | 215 |
| 2. Dentists (DD) | 62 | 20 |
| 3. Graduate Nurses (RN) | 146 | 108 |
| 4. Auxiliary Nurses (AN) | 408 | 297 |
| 5. Practical Nurses (PN) | 1065 | 455 |
| 6. Trained Midwives | 106 | 900 |
| 7. Health Educators | 24 | 30 |
| 8. Clerk Statisticians | 25 | 20 |
| 9. Others | 4734 | 974 |

The 661 MD's employed by the Secretariat represent 50.8% of the practicing physicians in the Dominican Republic. Three hundred and thirty-two or 50.2% of the Secretariat physicians are located in the First Health Region which consists of Santo Domingo, San Cristobal, and Peravia Provinces. In addition 22 physicians work in the central offices of the Secretariat of Health. The remaining 307 Secretariat physicians work in various health facilities throughout the country.

Under the loan, a total of 215 additional physicians will be required, 145 for staffing the new and expanded hospitals; 50 for the 25 health subcenters; and 20 travelling MD's for the 89 rural clinics. This need will be filled through the creation of new MD positions in the Secretariat of Health, drawing on the pool of privately practicing physicians, and the recruitment of medical school graduates. Through loan funded participant training programs in Puerto Rico and on-the-job training programs, the technical quality of the selected physicians will be improved.

The health facilities to be built under the loan will require an additional 108 graduate nurses: 63 for hospitals; 25 for health subcenters; and 20 travelling RN's for the rural clinics. Of the 146 RN's presently employed by the Secretariat of Health, 47% (70) work in the First Health Region, and an additional 20% (29) work in the Secretariat. To recruit the additional RN's required, the Secretariat will raise its salary levels to compete with private clinics, and train 12 additional RN's (obstetrics) in Puerto Rico. In addition, some of the present RN's will be shifted to areas where they are more critically needed.

There are no problems anticipated in obtaining the additional 297 auxiliary nurses: 272 for hospitals and 25 for sub-centers. The present AN's are girls who have completed a formal eighth grade education and have received some limited, specialized training in nursing. These nurses are now produced in the two nursing schools in Santo Domingo and Puerto Plata (200 graduates per year), as well as from the auxiliary nursing programs of the Comprehensive High Schools. By 1970 the new comprehensive Secondary Schools will graduate 200 auxiliary nurses per year with a full twelve-year high school education specializing in nursing education. Some of these graduates will go on to post-high school graduate nurse training. Others will take posts in hospitals, health sub-centers and clinics gradually replacing less well trained personnel.

Practical nurses have little or no nursing training and no problem is foreseen in acquiring the 455 required, 316 for hospitals; 50 for the health sub-centers; and 89 for the rural clinics. In the future it is hoped that through additional in-service training the position of PN can be abolished, and the more intelligent of these girls can go to the comprehensive secondary schools to become AN's.

Positions for para-medical and technical personnel required under the loan, 32 lab technicians; 20 pharmacists; 20 X-ray technicians; and 115 other personnel (sanitation officers, lab assistants, etc.) will be created in the Secretariat. University graduates and private clinic staff will be recruited to fill those positions, and no difficulties are foreseen in obtaining sufficient personnel.

Since such a large number of rural births occur with the assistance of mid-wives, this loan proposal will provide elementary medical and sanitary training as well as a basic health kit to 900 mid-wives.

The training programs to be sponsored under the loan will cost \$1,033,350, and will include US and Puerto Rican training for the more specialized skills (\$318,000), and in-country and on-the-job training for the majority of operating personnel, i.e., doctors, nurses, health educators, midwives, etc. (\$715,350). The training programs are divided as follows:

IN COUNTRY TRAINING

PHYSICIANS

| | Location | Participants Jan. 69 | participants Jan. 70 | Participants Jan. 71 | Total Participants | Total Cost |
|---|------------|-------------------------|-------------------------|-------------------------|-----------------------|------------------|
| A. OBS Residence One year For GP/1 yr. 200/month 2400/yr. | Mat. Hosp. | 10 | 10 | 10 | 30 | \$ 72,000 |
| B. Ped. Res. One Year For G.P. 200/month 2400/yr. | Ped. Hosp. | 10 | 10 | 10 | 30 | 72,000 |
| TOTAL | | | | | | <u>\$144,000</u> |

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IN COUNTRY TRAINING

NURSES

| | Location | Participants Jan. 69 | Participants Jan. 70 | Participants Jan. 71 | Total Participants | Total Cost |
|---|----------|-------------------------|-------------------------|-------------------------|-----------------------|-------------------|
| 1. Bachelor in Nursing | | | | | | |
| 3 yr. course for RN 3000/part/3 yr. | UCMM | 4 | 4 | 4 | 12 | \$ 36,000 |
| 2. Junior College Nursing Diploma | | | | | | |
| 2 yr. course for H.S. Graduates 2000/part/2 yr. | UCMM | 10 | 10 | 10 | 30 | 60,000 |
| | UASD | 10 | 10 | 10 | 30 | 60,000 |
| 3. Auxilary Nursing Program | | | | | | |
| 6-month internship comprehensive high school 360/part/6 mos. | | 100 | 100 | 100 | 300 | \$ 108,000 |
| | | 100 | 100 | 100 | 300 | 108,000 |
| TOTAL | | | | | | <u>\$ 372,000</u> |

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IN SERVICE TRAINING
(ON THE JOB TRAINING)

FAMILY PLANNING

| | Participants 1969 | Participants 1970 | Participants 1971 | Total Participants | Total Cost |
|--|----------------------|----------------------|----------------------|-----------------------|---------------|
| <u>1. Physicians</u> | | | | | |
| 5 courses annually 30 day duration x \$5/per diem 10 MD/course \$150/MD | 50 | 50 | 50 | 150 | \$22,500 |
| <u>2. Registered Nurses</u> | | | | | |
| 5 courses annually 30 day x \$5 per diem 5 RN = 150/RN | 25 | 25 | 25 | 75 | 11,250 |
| <u>3. Auxiliary Nurses</u> | | | | | |
| 5 annual courses 30 day duration \$3 per diem 20 AN = 90/AN | 100 | 100 | 100 | 300 | 27,000 |

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IN SERVICE TRAINING
(ON-THE-JOB-TRAINING)

PUBLIC HEALTH TRAINING

| | Participants 1969 | Participants 1970 | Participants 1971 | Total Participants | Total Cost |
|--|----------------------|----------------------|----------------------|-----------------------|---------------|
| <u>1. Sanitation Officer</u> | | | | | |
| 5 courses annually 30 days; \$2/day 30 persons | 150 | 150 | 150 | 450 | \$27,000 |
| <u>2. Health Education Technicians</u> | | | | | |
| 1 course annually 60 days \$500/ day 10 persons | 10 | 10 | 10 | 30 | 9,000 |
| <u>3. X-Ray Technicians</u> | | | | | |
| 3 courses annually 30 days duration 10 technicians | 30 | 30 | 30 | 90 | 8,100 |
| <u>4. Administration of Health Programs</u> | | | | | |
| 5 courses annually 15 days duration 20 persons | 100 | 100 | 100 | 300 | 22,500 |
| <u>5. Midwives</u> | | | | | |
| 30 Midwives/yr. \$30/midwife | 300 | 300 | 300 | 900 | 27,000 |

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US and Puerto Rico Training

| <u>Participants/ Year</u> | <u>Training</u> | <u>Duration</u> | <u>Cost/ Person</u> | <u>Starting Date</u> | <u>Total Cost</u> | | |
|-------------------------------|--|-----------------|-------------------------|--------------------------|--------------------|----------------|----------------|
| | | | | | <u>FY 69</u> | <u>FY 70</u> | <u>FY 71</u> |
| 20 | Maternal Health and Family Planning | 30 days | \$1,000 | May 68 | US\$20,000 | 20,000 | 20,000 |
| 20 | Study Trips | 15 " | 500 | May 68 | 10,000 | 10,000 | 10,000 |
| 6 | Cytology School | 1 yr | 5,000 | Feb 68 | 30,000 | 30,000 | 30,000 |
| 2 | Master Public Health (M.D.) | 1 yr | 5,000 | Aug 68 | 10,000 | 10,000 | 10,000 |
| 3 | Master Public Health Education | 1 yr | 5,000 | Aug 68 | 15,000 | 15,000 | 15,000 |
| 1 | Master Demography (Certificate) | 1 yr | 5,000 | Aug 68 | 5,000 | 5,000 | 5,000 |
| 4 | OB Nursing (RN) | 6 mos | 2,500 | July 68 | 10,000 | 10,000 | 10,000 |
| 2 | Margaret Sanger Research Bureau | 6 mos | 3,000 | July 68 | <u>6,000</u> | <u>6,000</u> | <u>6,000</u> |
| TOTAL | | | | | <u>US\$106,000</u> | <u>106,000</u> | <u>106,000</u> |

TRAINING BUDGET

| | | |
|------------------------------------|------------------|------------|
| U. S. and P. R. Training | | \$ 318,000 |
| In Country Training | | 715,350 |
| I. Nurses | (372,000) | |
| II. Post Graduate Medical Training | (144,000) | |
| III. In Service Training | | |
| A. Family Planning | (60,750) | |
| B. Public Health | (93,600) | |
| | <u>(670,350)</u> | |
| IV. Contract Services | | |
| A. Lecture Fees | (45,000) | |

\$1,033,350

III. IN-SERVICE TRAINING

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A. Family Planning Training (60,750)

1. Physicians
5 courses annually--Duration 1 month
10 physicians, \$1,500 per course (Per diem \$5.00)
Cost 7,500 per year x 3 years=22,500
2. Registered Nurses
5 courses annually - Duration 1 month
5 Nurses
Cost: 11,250/3 yrs (Per Diem \$5.00)
3. Auxiliary Nurses
5 courses annually - Duration 30 days
20 auxiliary nurses
Cost: 27,000 (per diem \$3.00)

B. Public Health Training (93,600)

1. Sanitation Officer Training
5 courses annually - 30 day duration
30 persons
Cost: 9,000 x 3 yrs = 27,000
2. Health Education Technicians

Courses 1/year -- duration 2 mos.
10 persons
Cost: \$3,000 x 3 = 9,000 (Per diem \$5.00)
3. X-Ray Technicians
3 courses annually - 30 day duration
10 technicians
Cost: 2,700 x 3 yrs - \$8,100
4. Administration of Health Programs

Courses 5/yr. - 2 weeks duration
20 (15 M.D.'s, 5 RN)
Cost: \$7,500 x 3 = \$22,500 (Per diem \$5.00)
5. Training for Midwives
300 midwives per year
\$30 per midwife
Cost: 9,000 per year x 3 yrs. = 27,000

IV. CONTRACT SERVICES FOR TRAINING

A. Lecture Fees

To pay hourly rates to Dominican professors who do not work for the Secretariat
\$15/credit hour
1,000 hrs./yr = \$15,000 x 3 = \$45,000

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D. Technical Assistance Description and Estimated Cost

1. Nursing

The two existing graduate nurse training schools, in Santo Domingo and Santiago, will shortly be faced with the situation of having to provide an increasing number of well-qualified RN's to staff the new and expanded medical facilities to be constructed under the loan. The services of two nursing education advisors have been requested to assist the schools in selecting and revising the curriculum, in improving the quality of instruction, in coordinating the placement of RN's with hospitals, and in supervising the in-service training programs for graduate nurses. The services of the two advisors have been requested for a period of three years.

Nursing Education Advisors 6 man-years - - - \$120,000

2. Maintenance

The present quality of maintenance throughout most of the hospitals in the Dominican Republic is generally poor. Normal maintenance is erratically performed and preventive maintenance is practically unheard of. To correct this situation, the Maintenance Division of the Secretariat of Health has prepared an action plan for all medical facilities. The short-term services of a maintenance engineering advisor have been requested to assist in implementing this plan. The advisor will assist the Chief Maintenance Engineer and the proposed Regional Maintenance Officers in establishing standard practices and procedures as well as a priority list of maintenance requirements. It is suggested that his services be made available for a six-month period.

Maintenance Engineering Advisor 6 months - - - \$15,000

3. Administration

Technical assistance will be provided through the use of short-term consultants on administrative organization and operation of the Secretariat, the regional centers and the individual hospital and clinics. Consultants will also be provided for reorganization of the health statistical services, and costs, financing and budget development.

Three-man years - - - - - \$120,000

4. Research

Technical assistance will be provided through short-term consultants to assist in carrying out the studies provided for under the loan.

2 man-years - - - - - \$80,000

5. Training

Technical assistance will be provided to assist in the in-country training courses of medical and para-medical personnel.

Two man-years - - - - - \$60,000

TOTAL \$395,000

E. Special Studies

Under the loan, \$100,000 will be provided for four special studies to be made concerning the following activities of the Secretariat of Health:

1. A continuous evaluation of the program in terms of the established goals (Table 1).
2. An organizational study of the Secretariat. This study will include an evaluation of the existing lines of authority and communication between subdivisions; a survey and determination of the effective use of personnel (working hours, administrative responsibilities, efficiency, etc.); and an evaluation and plan of action for standardizing technical norms, personnel practices, accounting and auditing.
3. An evaluation of the National Sanitary Code, which governs international communicable disease programs and sanitary inspection laws. The purpose is to suggest revisions for updating the code, as well as recommending a system of enforcement and penalties for violators of the sanitary inspection laws.
4. Recommendations for a centralized or regionalized purchasing and distribution system for all medicines, equipment, and supplies. It has been estimated that a 20-30% savings in costs of these materials could be effected through bulk purchasing procedures, presently done on an individual medical facility basis. Distribution and inventory controls will also be studied to determine the feasibility of a regional warehousing system.

F. Mass Media

Publicity is an essential factor in the establishment of any family planning program. Under the provisions of the loan, the GODR will produce a variety of mass media designed to encourage support and participation in the program by both men and women of all levels and classes of Dominican society. The selective use of mass media will enable the program to reach the largest potential audience. A total of \$118,000 is requested to finance the following media programs:

1. Press

The USAID Mission, in cooperation with the United Nations Development Program Mission and other interested international agencies, will continue to supply material and information to the local press and to encourage its publication.

The majority of the articles and editorials, however, would not appeal to those without a high level of formal education. In order to reach a broader audience through the press, the GODR will sponsor the insertion of a daily "comic" strip, which will present, in dramatic story form, the need for family planning. Cost of preparing and publishing a comic strip - \$7,500.

2. Comic Books

The GODR will contract for the production of a series of comic books dealing with various aspects of the maternal-infant care program. One of these booklets is being distributed and a second is in production. Under the loan, the GODR will sponsor four additional titles, at least one of which will be published without words. Total cost for four titles (500,000 copies each) - \$57,000.

3. Posters

Posters depicting graphically the benefits of different aspects of the program will be produced and distributed for posting in hospitals, clinics, public offices, etc. Cost of 6 posters at \$5,000 apiece - \$30,000.

4. Radio

Radio is probably the most popular medium in the Dominican Republic. There are 350,000 radios in homes. Radio broadcasting literally covers the country.

Since radio does not require literacy, it is an almost ideal medium for the semi-literate and illiterate. The radio "novela" or "soap opera" is particularly popular with this group. One "radio novela" dealing with family planning and produced in Costa Rica has been broadcast over a Roman Catholic station here a number of times with great success.

Under the loan, the GODR will contract for the production of a radio novela series which would be presented five days a week on prime radio time. Commercial stations have already agreed to donate the time. Cost for a 13-week program - \$23,000.

VI. Engineering Analysis.

A. General Description of the Project

The construction aspects of this program are divided into five parts: (1) Rehabilitation and enlargement of 15 existing hospitals located throughout the five health regions; (2) construction of one hospital; (3) construction of 15 sub health centers; (4) remodeling of 12 existing sub health centers; and (5) construction of 89 rural clinics.

A map showing the location of each facility to be constructed or rehabilitated, by health region, is attached in Annex 2.

The total cost of construction, including materials and engineering, is estimated at \$5,207,500, and is explained in detail in Annex II (Detailed Engineering and Construction Analysis). Of this, a total of \$1,041,500 or 20% will go towards US dollar expenses, while the balance of \$4,166,000 or 80% will be for local peso costs.

The construction costs of the various projects have been broken down as follows:

1. Rehabilitation and enlargement of existing hospitals - to provide expanded maternal and infant care and out-patient areas as well as rehabilitate the basic facilities (surgery, emergency, water and sewage). Total cost for 15 hospitals - \$3,489,347.

2. Construction of one small (35 bed) hospital in Health Region III to serve as provincial base hospital - \$121,753

3. Construction of 15 sub health centers - \$33,280 per facility. They will include two 4-bed wards and two emergency beds. Total cost - \$465,920.

4. Remodeling of 12 existing sub health centers - to convert existing buildings into facilities comparable to 3, above. Total cost - \$204,880.

5. Construction of 89 rural clinics - \$10,400 per facility. Total cost \$925,600.

To the extent possible, these cost estimates are based on the recent experience of a number of similar projects under construction or already completed. For that reason it is felt that the estimates are reasonably accurate.

B. Engineering Plan

The Secretariat of Public Health, with the cooperation of USAID/Engineering, selected several private Dominican architects to prepare preliminary plans for each individual project. The projects were carefully studied because of the individual requirements and different characteristics of each of the facilities. USAID/Engineering and Public Health, working together with the private architects, have arrived in each individual case at the best possible solution for the rehabilitation of the hospitals, including the construction of the necessary additional space for new services or expansion of existing services.

In the rehabilitation of the existing hospitals, the architects have generally planned to use the existing buildings for nursing, surgery area, and services; and to use the new buildings for out-patient services, and administration.

In all designs, the interior circulation (food, personnel, visitors), ventilation, light orientation, size of the wards, isolation of the surgery area, accessibility of emergency area, and location of the administrative and out-patient areas has been carefully studied.

The costs for the rehabilitation of each of the hospitals are felt to be quite reasonable, taking into consideration the deplorable conditions of many of the present facilities. In all but two instances (hospitals having poor soil conditions and insufficient utility area that will require additional site work) the unit price will be \$90.00 per square meter.

With regard to rural clinics, recent experience in constructing 14 clinics with Supporting Assistance funds has indicated that the \$10,400 cost per clinic is a reasonable estimate.

C. Engineering Plan for Implementation of the Project

It is proposed that private Dominican architects will prepare the final plans, specifications and bid documents, with the assistance and supervision of USAID/Engineering. Each project will be advertised for bidding by Public Works, in accordance with the Dominican construction law. The supervision of each project will be handled by the individual architect and assisted by Public Works.

The physical construction will be accomplished by construction contractors who will be prequalified by Public Works and USAID/Engineering. These contractors will obtain the work through competitive bidding in accordance with GODR and AID regulations. Each major health project will be constructed and bid as an individual project, unless otherwise approved by AID. The health center and rural clinics will be submitted for bid in packages of 2 or 3 health centers and 8 or 9 rural clinics in specific regional areas.

The construction of these health facilities will start approximately four months after satisfaction of the conditions precedent. The bulk of the loan disbursements for construction will occur during 1969-70.

D. Maintenance

Hospital maintenance in the Dominican Republic is the responsibility of the Secretariat of Public Health. The present condition of maintenance is very poor, however, due to the lack of transportation, materials, and capable personnel.

The Secretariat of Public Health in coordination with USAID/Engineering has prepared an action plan to provide maintenance for all medical facilities in the Dominican Republic. The different phases of the plan are:

- Normal maintenance
- Preventive maintenance
- Special maintenance
- Initial special maintenance

At the present time the Secretariat of Public Health has initiated a program of special maintenance aimed at correcting the most obvious maintenance problem areas. This is only a temporary measure, however, and in the future the Maintenance Division of the Secretariat of Public Health will do periodical inspections of medical facilities to discover points of weakness before failures occur and to assure that facilities are kept in efficient, operating conditions. In addition, under the new maintenance organization, a Regional Maintenance Officer will be assigned to each one of the Health Regions, who will supervise all building and utility maintenance and repair in his respective region.

Regional shops will facilitate the work of the specialized trades (carpentry, electrical work, plumbing, air-conditioning and refrigeration). Also, mobile repair units, operating out of the regional hospitals, will visit each facility, to perform inspections, preventive maintenance care and minor repairs.

Loan funds will be set aside to provide the Secretariat of Health with 10 pick-up trucks and equipment trailers to be used as regional mobile repair units and 2 sedans for inspection trips by central maintenance engineers. In addition, each Regional maintenance center will be provided with office space and equipment.

VII. FINANCIAL AND BULGETARY ANALYSIS

A. Cost Summary

The cost of each component part of this loan proposal was itemized at the end of the project description for that particular segment. The cost calculations supporting the figures for training, studies, and technical assistance are based on actual USAID experience. The cost calculations for the construction aspect of this program are described in Chapter VI--Engineering Analysis and further detailed in ANNEX II. (The A&E work and preliminary cost estimates already finished is the joint product of the USAID Engineering Division and several Dominican A&E firms retained, with grant funds, to do the actual engineering--almost custom work--on each part of the construction component.) Exhibit 10 , ANNEX I, contains an itemized breakdown of the equipment to be financed with these loan funds. The cost calculations supporting proposed expenditures for mass media are indicated in the Project Description section.

The total cost of this program is summarized in the following table:

| | <u>Dollar Costs</u> | <u>Local Costs</u> | <u>Total</u> |
|------------------------|---------------------|--------------------|--------------------|
| Construction | \$1,041,500 | \$4,166,000 | \$5,207,500 |
| Equipment | 2,250,000 | 250,000 | 2,500,000 |
| Education and Training | 318,000 | 715,350 | 1,033,350 |
| Technical Assistance | 395,000 | - | 395,000 |
| Studies | 100,000 | - | 100,000 |
| Mass Media | - | 118,000 | 118,000 |
| TOTAL | <u>\$4,104,500</u> | <u>\$5,249,350</u> | <u>\$9,353,850</u> |

As specified in Section III C, USAID/DR has allocated \$658,000 of grant funds to family planning. Approximately \$730,000 of the pesos generated under the recent \$30 million SA/PL 480 pesos will be allocated to health sector projects. Discussions with the Secretary of Health during the first three months of 1968 produced agreement on the allocation of these pesos and on the necessity of increasing the 1968 Secretariat of Health budget by \$296,215 in order to provide necessary funds for additional salaries, per diem and gasoline. The projects to be funded with the SA/PL 480 pesos are as follows:

| | |
|--|------------------|
| A&M Services--for remodeling and expansion of health facilities | \$100,000 |
| Construction of 15 rural clinics (\$150,000) and 7 sub-centers (\$210,000) and a building for the IV fluids plant (\$30,000) | \$390,000 |
| Repair and expansion of day care centers and orphanages | \$200,000 |
| Construction of 15 Police Clinics in Santiago pilot area | <u>\$ 40,000</u> |
| | <u>\$730,000</u> |

B. Budget Analysis

In January, the Dominican Republic Congress appropriated \$15,515,697 for the Secretariat of Health during CY 1968. The amount budgeted for CY 1967 was higher (\$17,089,364) although actual allocations to and expenditures by the Secretariat for 1967 were approximately \$14.8 million. Total annual expenditures by the Secretariat of Health have ranged generally from \$12-15 million in the years 1962-1967. Disbursements in 1965 were lower than this range in 1965 and actually exceeded \$15 million in 1966.

As previously mentioned, discussions already held have produced agreement on a \$296,215 increase above the 1968 Dominican Republic Congressional appropriation. The following table shows in detail the 1968 budget, with this increase, and the corresponding 1967 expenditures:

SECRETARIAT OF STATE FOR HEALTH AND SOCIAL ASSISTANCE
PROPOSED USAID BUDGET FOR 1968

| | Personal Services | Non-Personal Services | Materials & Supplies | Machinery & Equipment | Capital Transfers | Current Transfers | Lump Sum Allotments | TOTAL |
|------------------------------|----------------------|--------------------------|-------------------------|--------------------------|----------------------|----------------------|------------------------|-------------------|
| 1. General Administration | 389,360 | 40,770 | 110,000 | 5,650 | | 77,875 | | 623,655 |
| 2. General Health Services | 3,725,500 | 61,500 | 48,300 | 5,000 | | | 1,139,028 | 4,979,328 |
| 3. Basic Services | 468,450 | 7,000 | 27,000 | 15,180 | | 77,560 | 27,000 | 622,190 |
| 4. Health Attention | 752,880 | 6,000 | 60,400 | 20,875 | | 76,400 | 1,675,773 | 2,592,328 |
| 5. Health Promotion | 675,760 | 29,100 | 53,200 | 3,000 | | | 294,336 | 1,055,396 |
| 6. Health Recuperation | 2,088,570 | 7,630 | 4,400 | 4,400 | | 3,600 | 776,160 | 2,884,760 |
| 7. General Welfare Services | 50,160 | 5,000 | 1,400 | 1,000 | | 250,000 | | 307,560 |
| 8. Child Welfare | 304,320 | 3,000 | 2,000 | 1,000 | | | 360,720 | 671,040 |
| 9. Financing to Institutions | | | | | 550,000 | 1,342,460 | | 1,892,460 |
| TOTALS | 8,655,000 | 160,000 | 334,700 | 58,105 | 550,000 | 1,927,895 | 4,273,017 | 15,926,717 |
| Total Expenditures for 1967 | 7,534,600 | 82,200 | 1,334,100 | 11,200 | 296,300 | 1,535,000 | 3,960,700 | 14,779,700 |
| Differances | ◊1,120,400 | ◊77,800 | -1,029,400 | ◊44,905 | ◊253,700 | ◊292,895 | ◊312,317 | ◊1,047,017 |

Several of the budget categories will be increased significantly over 1967 levels. The shift of emphasis (roughly \$1 million transferred) from materials and supplies allocations to salaries represents the initial planning effort towards this loan program, as loan funding is planned for equipment and materials related to the purposes of the loan program. The purposes and actual component parts (including cost estimates) of this loan program have been extensively coordinated with Secretariat officials but thus far no budgetary discussions have been held regarding 1969-71 levels.

This loan proposal is not an over-all sectoral effort. It will touch many of the health facilities operated by the GODR and it will implement many of the provisions of the general health planning of the Secretariat but its focus and emphasis is limited to the maternal-infant-care and family planning aspects of total Secretariat operations. No assessment has been made of the over-all health services needed within the Dominican Republic either in terms of physical facilities, personnel or of budgetary requirements. Construction, training and other expenditures to be financed with this loan are related only to the purpose of reducing the Dominican population growth rate.

The budgetary needs of the Secretariat of Health for the period 1969-1971 have been estimated in terms of new levels required to support this loan program. It is estimated that significant increases will be necessary just to carry out this program. The following table indicates the USAID's estimate that roughly a 10% increase will be needed for 1969, i.e. \$1.5 million, and probably a like amount again in 1970 and 1971:

SECRETARIAT OF HEALTH BUDGET PROJECTIONS 1969 - 1971

| | 1968 Appropriation | SA Exerc. 1968 Additions | 1968 new Appropriation | Additional per year 1969 - 71 | 1969 | 1970 | 1971 |
|--|-----------------------|--------------------------------|------------------------------|-------------------------------------|-------------------|-------------------|-------------------|
| 01 Personal Services (Salaries) | 8,518,500 | 136,500 | 8,655,000 | 700,000 | 9,355,000 | 10,055,000 | 10,755,000 |
| 02 Non Pers. Services (Per Diem & Gas.) | 133,480 | 24,520 | 158,000 | 100,000 | 258,000 | 358,000 | 458,000 |
| 03 Mat. and Supplies | 154,700 | 150,000 | 305,000 | 300,000 | 605,000 | 905,000 | 1,205,000 |
| 04 Mach. and Equip. | 56,105 | -15,105 | 41,000 | | | | |
| 06 Construction | - | - | | | | | |
| 07 Current Transfers | 1,827,895 | - | - | - | 1,827,895 | 1,827,895 | 1,827,895 |
| 08 Capital Transfers | 550,000 | - | - | - | 550,000 | 550,000 | 550,000 |
| 11 Global Assignments (Operational Subsidy) | 4,273,017 | - | - | 400,000 | 4,673,000 | 5,073,000 | 5,473,000 |
| Total Internal Resources | 15,515,697 | 296,215 | 15,826,717 | 1,500,000 | 17,326,717 | 18,826,717 | 20,326,717 |
| | - | - | | | | | |

No budgetary allocations for machinery and equipment or for construction are planned during the implementation period of this loan as loan funds will cover all such activities. The GODR increases will be used within the other budget categories to support the new maternal-infant care facilities. Increases as shown above amount to 10% from 1968 to 1969 decreasing slightly to 8% from 1970 to 1971, whereas current estimates indicate that GODR revenues should be increasing by about 5% annually in the same period.

GODR support for this loan program, in accordance with the table shown above, would constitute an allocation of \$9.0 million of new funds to this program above the revised 1968 budget level of \$15.8 million during the planned three-year implementation period:

| (in Millions \$s) | <u>1969</u> <u>Increase</u> | <u>1970</u> <u>Increase</u> | <u>1971</u> <u>Increase</u> |
|---------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 1968 Appropriation (as revised) | \$15.8 | | |
| 1969 Target | \$17.3 | 1.5 | |
| 1970 Target | \$18.8 | 1.5 | 1.5 |
| 1971 Target | \$20.3 | 1.5 | 1.5 |
| | <u>4.5</u> | <u>3.0</u> | <u>1.5</u> |
| TOTAL..... | | | <u>\$9.0</u> |

As noted, the budgetary increases of the Health Secretariat are essentially to meet the recurring costs of this program, costs which will continue after the 1971 completion date for construction and training and which will continue to be borne by the GODR. The projected decrease in the Dominican Republic population growth rate is estimated (Section IV B) through the year 1971 in this paper. The facilities and personnel made operative as a result of this program will continue to function well beyond the year 1971 and could bring about further reductions in the population growth rate although projections beyond that date are too problematical to be of value.

C. Capacity and Prospects for Repayment

The foreign debt amortization schedule for the Dominican Republic is as follows:

FOREIGN DEBT AMORTIZATION TABLE 1966 - 1980

(millions of dollars)

| Year | Amortization and Interest Payments ^{1/} | Estimated Exports ^{2/} | Ratio of Payments to Estimated Exports |
|------|--|---------------------------------|--|
| 1967 | 18.3 | 156.6 | 11.7 |
| 1968 | 25.3 | 152.8 | 16.6 |
| 1969 | 36.3 | 168.3 | 21.6 |
| 1970 | 16.6 | 175.0 | 9.5 |
| 1971 | 13.5 | 182.0 | 7.4 |
| 1972 | 8.5 | 189.2 | 4.5 |
| 1973 | 8.3 | 196.8 | 4.2 |
| 1974 | 8.2 | 204.7 | 4.0 |
| 1975 | 8.1 | 212.9 | 3.8 |
| 1976 | 7.4 | 221.4 | 3.3 |
| 1977 | 7.6 | 230.3 | 3.3 |
| 1978 | 9.1 | 239.5 | 3.8 |
| 1979 | 9.2 | 249.1 | 3.7 |
| 1980 | 9.1 | 259.0 | 3.5 |

1/ - Based on reported external debts of the Dominican Republic as of June 30, 1967, and the assumption that interest payments will average 2 per cent of the unpaid balance at the end of the year. Basic estimates have been adjusted to reflect the rescheduling of IMF payments and to include the amortization of the recent \$6.6 million IMF loan as well as the \$10 million loan to CEA, the outstanding debt of Banco de Reservas, repayment of the \$40 million A.I.D. package and the community Development loan. As the latter two loans will be repaid over forty years, the impact of their repayment will begin to be felt in 1978.

2/ - Based on Central Bank and Embassy estimates.

3/ - Now felt by Mission to be too conservative.

SOURCES: Banco Central and Embassy.

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As is readily seen, the burden after 1971 is relatively light. Thus, assuming that this loan is made on the statutory minimum terms with a 10-year grace period, the added impact of this borrowing should not present any particular difficulties. Mission experience to date with loan repayments has not been unsatisfactory.

Thus, it is reasonable to conclude that the GODR has the capacity to repay this loan. On the other hand, the indirect nature of the loan's contribution to economic development, the fact that its impact will in large part be long range, and the precedent of other A.I.D. loans to the Dominican public sector all counsel for concessional terms.

D. Impact on U. S. Economy

As detailed in preceding sections of this loan paper, about 42% of the funds of this loan will be used for direct U.S. procurement of technical services and equipment. The financing of local currency costs will all be effected through the Special Letter of Credit procedure which should have incorporated and have functioning a positive list by the time disbursements actually commence. The program to be financed hereunder is essentially the development of Dominican human resources which can only have a beneficial effect on the U.S. economy.

VIII. Implementation Plan

A. Monitoring

The standard capital development implementation procedures will be used by the USAID Project Committee in carrying out the various components of this loan. A.I.D. approval will be required for all plans and specifications, contracts and contractors, and the normal A.I.D. processes for procurement, including consideration of U.S. Government excess property, will be followed.

The USAID officials that will be directly involved in the implementation of the loan--Engineering Office and Health Office--are in contact with their counterparts in the Secretariat of Health, and will coordinate their respective aspects of the program. USAID internal staff monitoring will be the responsibility of the Capital Development Office.

B. Timing and Scheduling

It is hoped that the Loan Agreement will be signed and that all conditions precedent to the initial disbursement of loan funds will be satisfied by October, 1968.

Implementation of this program has been planned through the year 1971, to operate concurrently with the 1968-72 Health Services Plan of the Secretariat of Health. The latter plan will provide a new impetus to the country's single largest area of medical concern--the maternal and infant care program.

The proposed loan components have been phased to assure that the construction and training aspects will be properly coordinated and that the transition from constructing and equipping to proper staffing of medical facilities will be smoothly accomplished. The detailed time schedules for the various parts of this loan program are contained in Annex I , Exhibit 13 .

C. Negotiating Strategy

Under the 1966 \$40 million Supporting Assistance Loan, funds were provided to construct 14 rural clinics in two separate regions. These clinics are to be serviced by traveling teams of doctors and nurses, making periodic visits to each clinic, but operating out of a regional health center. Although sufficient operating funds (travel

per diem) were budgeted, they have not been forthcoming and the clinics are presently operating on a very limited basis. Prior to the authorization of the use of these loan funds, the fourteen rural clinics constructed with SA funds shall have been put into full operation with adequate staff, and each clinic shall have an active family planning program.

A formal review of the Secretariat's of Health implementation of the program as well as a look ahead to its projected goals will be undertaken annually in conjunction with the preparation of the health budget. Continued disbursements of these loan funds will depend on satisfactory performance. Informal reviews and discussions of problem areas and public response to the program will be undertaken on a much more frequent basis, probably monthly.

The following commitments will be sought from the GODR as conditions to this loan:

1. Conditions Precedent (Specific)

a. That, prior to commencement of construction of the 86 new rural clinics, the fourteen rural clinics constructed with SA funds have been put into full operation with adequate staff, and that each clinic has an active family planning program.

b. That the GODR establish adequate warehousing, insurance, and inventory control for receipt and warehousing of equipment and materials prior to the commencement of procurement of such items under the Loan.

c. That construction or remodeling of specific facilities will be authorized only after receipt by USAID of an acceptable staffing pattern and evidence of the establishment of positions with budget allocation for those positions.

2. Covenants

a. The Borrower shall covenant to support this effort through increased budget allocations to the Secretariat of Health sufficient to accomplish the purposes of this program. The USAID proposes to use targets of \$15.8 million in 1968, \$17.3 million in 1969, \$18.8 million in 1970 and \$20.3 million in 1971.

List of Exhibits

June 13, 1968

1. Personnel-Secretariat of Health (1968 Budget)
2. Population Data Sheet
3. Live Births and Deaths (Recorded) by area
4. Population and Density - 1968
5. Balaguer decree
6. Plan for a National Population Program - Nat'l Pop. Council
7. PL480 contribution by commodity
8. Existing and Programmed Buildings and Bed Capacity
9. Distribution of Hospitalization Centers - total beds
10. Equipment (to be combined) - by medical facility by category
11. Estimated costs for Expansion Facilities (Salary & Operation)
12. Present Expenses of 15 hospitals to be remodelled (salary & operations)
13. Health Service Implementation Plan

SECRETARIAT OF STATE FOR HEALTH AND SOCIAL ASSISTANCE
PERSONNEL INCLUDED IN THE BUDGET FOR 1968

| REGION | AREA | Geographic Limits | Physicians | % | Dentists | % | Reg. Nurses | % | Aux. Nurses | % | Pract. Nurses | % | Trained Midwives | % | Other |
|--------|------|--------------------------------------|------------|--------|----------|--------|-------------|--------|-------------|--------|---------------|--------|------------------|--------|-------|
| | | TOTAL COUNTRY | 661 | (100%) | 62 | (100%) | 146 | (100%) | 408 | (100%) | 1,065 | (100%) | 106 | (100%) | 4,734 |
| FIRST | | TOTAL REGION I | 332 | (50%) | 16 | (25%) | 70 | (48%) | 196 | (48%) | 487 | (45.6) | 27 | (25.5) | |
| | 1 | Oriente EN & Monte Plata Bayaguama | 32 | | 2 | | 8 | | 36 | | 40 | | 5 | | |
| | 2 | Monte Uno EN Villa Altagracia Yamasá | 96 | | 4 | | 19 | | 48 | | 164 | | 3 | | |
| | 3 | Monte Das EN | 35 | | 1 | | 4 | | 17 | | 36 | | - | | |
| | 4 | Sociedad EN | 116 | | 7 | | 24 | | 69 | | 176 | | 14 | | |
| | 5 | San Cristóbal (Part of Province) | 34 | | 1 | | 14 | | 24 | | 39 | | - | | |
| | 6 | Paravia (Province) | 17 | | 1 | | 1 | | 14 | | 33 | | 5 | | |
| | | TOTAL REGION II | 136 | (20%) | 9 | (15%) | 23 | (16%) | 85 | (21%) | 261 | (24.5) | 26 | (24.5) | |
| | 1 | Santiago | 64 | | 3 | | 11 | | 60 | | 126 | | 4 | | |
| | 2 | Monte Plata | 26 | | 2 | | 7 | | 17 | | 49 | | 4 | | |
| | 3 | Valverde | 4 | | - | | 1 | | 11 | | 4 | | 3 | | |
| | 4 | Esmeraldas | 14 | | 2 | | - | | 4 | | 26 | | 4 | | |
| | 5 | Monte Cristi | 6 | | - | | 1 | | 4 | | 14 | | 3 | | |
| | 6 | Monte Cristi | 13 | | 1 | | 2 | | 5 | | 27 | | 4 | | |
| | 7 | Dajabón | 7 | | 1 | | 1 | | 4 | | 16 | | 4 | | |
| | | TOTAL REGION III | 86 | (13%) | 3 | (5%) | 8 | (5%) | 40 | (10%) | 163 | (15.3) | 20 | (19%) | |
| THIRD | 1 | Diarte | 21 | | - | | 1 | | 11 | | 39 | | 4 | | |
| | 2 | La Vega | 31 | | 2 | | 4 | | 12 | | 65 | | 8 | | |
| | 3 | Mba. Trinidad Sanchez | 7 | | - | | - | | 4 | | 11 | | 2 | | |
| | 4 | Salcedo | 16 | | 1 | | 2 | | 6 | | 28 | | 4 | | |
| | 5 | Sanchez Ramirez | 1 | | - | | - | | 1 | | - | | - | | |
| | 6 | Samaná | 10 | | - | | 1 | | 6 | | 20 | | 2 | | |

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Exhibit 1, Page 1 of 2

| REGION | AREA | Geographic Limits | Physi- cians | % | Dentists | % | Regi- Nurses | % | Aux. Nurses | % | Pract. Nurses | % | Trained Midwives | % | Other |
|--------|------|--|-----------------|-------|----------|--------|-----------------|--------|----------------|--------|------------------|--------|---------------------|-------|-------|
| FOURTH | | TOTAL REGION IV | 48 | (7%) | 3 | (5%) | 4 | (3%) | 34 | (8%) | 83 | (7.8%) | 20 | (19%) | |
| | 1 | Barahona-Pedernales | 11 | | - | | 4 | | 13 | | 15 | | 4 | | |
| | 2 | Independencia - Barruco | 3 | | - | | - | | 8 | | 6 | | 2 | | |
| | 3 | Arua | 8 | | 2 | | - | | 4 | | 16 | | 5 | | |
| | 4 | San Juan | 15 | | 1 | | - | | 5 | | 34 | | 4 | | |
| | 5 | Estrellita | 6 | | - | | - | | 4 | | 12 | | 5 | | |
| FIFTH | | TOTAL REGION V | 37 | (6%) | 4 | (7%) | 13 | (9%) | 40 | (10%) | 48 | (4.5%) | 13 | (12%) | |
| | 1 | San Pedro de Macoris | 13 | | 1 | | 3 | | 13 | | 9 | | 2 | | |
| | 2 | El Seybo | 13 | | 1 | | 5 | | 10 | | 22 | | 7 | | |
| | 3 | La Romana | 5 | | 1 | | 3 | | 5 | | 5 | | 1 | | |
| | 4 | Higüey | 6 | | 1 | | 2 | | 12 | | 12 | | 3 | | |
| | | Personnel Secretariat of Public Health | 22 | (3%) | 27 | (43%) | 28 | (19%) | 13 | (3%) | 23 | (2.1%) | - | | |

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Exhibit 1, Page 2 of 2

LIVE BIRTHS AND DEATHS BY REGIONS AND HEALTH AREAS - ACCORDING TO MEDICAL ASSISTANCE AND MEDICAL CERTIFICATION

| REGION | AREA | GEOGRAPHIC LIMITS | LIVE BIRTHS | | | | DEATHS a) | | | |
|--------|------|-------------------------------------|-------------|--------------------|---------|-------------------------------|-----------|-----------------------|---------|-------------------------------|
| | | | TOTAL | MEDICAL ASSISTANCE | | | TOTAL | MEDICAL CERTIFICATION | | |
| | | | | With | Without | Percentage Without Assistance | | With | Without | Percentage With Certification |
| | | TOTAL FOR COUNTRY | 126,267 | 34,694 | 91,563 | 72.53 | 26,726 | 6,608 | 20,119 | 75.27 |
| I | | TOTAL REGION I | 31,890 | 16,594 | 15,296 | 47.85 | 11,691 | 4,675 | 7,016 | 60.00 |
| | 1 | Oriente EN & Monte Plata-Bayaguama | b) | b) | b) | b) | b) | b) | b) | b) |
| | 2 | Norte Uno EN & V. Altamira-Yamoa | 21,869 | 12,757 | 9,112 | 41.66 | 9,969 | 4,262 | 5,706 | 57.2 |
| | 3 | Norte Dos EN | | | | | | | | |
| | 4 | Ocidental EN | | | | | | | | |
| | 5 | San Cristóbal (Partion of Province) | 6,902 | 2,602 | 4,300 | 62.20 | 936 | 212 | 724 | 77.4 |
| | 6 | Paraván | 3,119 | 1,233 | 1,884 | 60.20 | 787 | 201 | 586 | 74.5 |
| II | | TOTAL REGION II | 34,284 | 6,259 | 28,025 | 81.70 | 5,356 | 640 | 4,716 | 88.1 |
| | 1 | Santiago | 14,361 | 3,181 | 11,200 | 77.68 | 2,543 | 203 | 2,340 | 92.02 |
| | 2 | Puerto Plata | 6,362 | 533 | 5,829 | 91.62 | 834 | 180 | 654 | 78.41 |
| | 3 | Valverde | 2,782 | 503 | 2,279 | 81.92 | 435 | 51 | 384 | 88.28 |
| | 4 | Española | 5,508 | 381 | 5,127 | 93.09 | 928 | 103 | 825 | 88.90 |
| | 5 | Santiago Rodríguez | 1,984 | 458 | 1,526 | 76.92 | 238 | 36 | 202 | 84.87 |
| | 6 | Monte Cristi | 1,858 | 426 | 1,430 | 76.94 | 227 | 41 | 186 | 81.94 |
| | 7 | Dajabón | 1,409 | 775 | 634 | 45.00 | 151 | 26 | 125 | 82.78 |
| III | | TOTAL REGION III | 33,567 | 6,701 | 26,866 | 80.03 | 4,874 | 454 | 4,418 | 90.64 |
| | 1 | Duarte | 7,617 | 2,733 | 4,884 | 61.05 | 1,498 | 146 | 1,352 | 90.25 |
| | 2 | La Vega | 11,683 | 2,789 | 8,894 | 76.13 | 1,555 | 170 | 1,385 | 89.07 |
| | 3 | María Trinidad Sánchez | 2,003 | 91 | 1,912 | 96.64 | 452 | 52 | 400 | 88.50 |
| | 4 | Salcedo | 3,928 | 34 | 3,894 | 99.13 | 481 | 37 | 444 | 92.31 |
| | 5 | Sánchez Ramírez | 5,741 | 305 | 5,436 | 94.69 | 555 | 17 | 538 | 96.94 |
| | 6 | Samaná | 2,325 | 749 | 1,576 | 67.78 | 333 | 34 | 299 | 89.79 |

a) Place of Registry

b) Includes areas 1, 2, 3, and 4

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| REGION | AREA | GEOGRAPHIC LIMITS | LIVE BIRTHS | | | | DEATHS a) | | | |
|--------|------|-------------------------|--------------------|-------|---------|-------------------------------------|-----------------------|------|---------|-------------------------------------|
| | | | MEDICAL ASSISTANCE | | | Percentage Without Assistance | MEDICAL CERTIFICATION | | | Percentage With Certification |
| | | | TOTAL | With | Without | | TOTAL | With | Without | |
| IV | | TOTAL REGION IV | 15,003 | 1,935 | 13,068 | 87.76 | 2,694 | 497 | 2,197 | 81.57 |
| | 1 | Burahoma - Poderiales | 4,274 | 585 | 3,689 | 86.30 | 657 | 154 | 503 | 76.56 |
| | 2 | Independencia - Saetuco | 4,479 | 208 | 4,271 | 95.46 | 753 | 84 | 669 | 88.98 |
| | 3 | Asun | 1,195 | 219 | 976 | 81.67 | 481 | 119 | 362 | 75.26 |
| | 4 | San Juan | 3,928 | 223 | 3,705 | 94.32 | 627 | 107 | 520 | 82.99 |
| | 5 | Estrellota, La | 1,927 | 703 | 1,227 | 63.67 | 176 | 33 | 143 | 81.29 |
| V | | TOTAL REGION V | 10,723 | 3,195 | 7,528 | 70.18 | 2,111 | 340 | 1,771 | 83.89 |
| | 1 | San Pedro de Macoris | 3,294 | 482 | 2,812 | 85.37 | 571 | 204 | 367 | 64.27 |
| | 2 | El Seibo | 3,446 | 628 | 2,817 | 81.75 | 633 | 64 | 569 | 89.89 |
| | 3 | La Romana | 2,357 | 1,629 | 528 | 22.38 | 527 | 61 | 466 | 88.43 |
| | 4 | La Altagracia | 1,626 | 255 | 1,371 | 84.32 | 380 | 11 | 369 | 97.11 |

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POPULATION - AREA DENSITY - BY HEALTH AREAS AND REGIONS - DOMINICAN REPUBLIC - 1968

| REGION | AREA | GEOGRAPHIC LIMITS | POPULATION a) | AREA | DENSITY |
|--------|------|------------------------------------|------------------|-----------|---------|
| | | TOTAL FOR THE COUNTRY | 4,029,420 | 48,442.23 | 83.1 |
| I | | TOTAL REGION I | 1,242,700 | 6,841.97 | 181.6 |
| | 1 | Oriente ND and Monte Plata-Bayag. | 186,000 | b) | b) |
| | 2 | North One ND, V. Altagracia-Yamasá | 162,400 | 4,301.30 | 214.4 |
| | 3 | North Two ND | 385,000 | | |
| | 4 | Occidente ND | 180,000 | | |
| | 5 | San Cristóbal (Part of Province) | 197,700 | 918.79 | 215.2 |
| | 6 | Peravia (Province) | 131,600 | 1,621.88 | 81.1 |
| II | | TOTAL REGION II | 953,020 | 10,470.91 | 91.0 |
| | 1 | Santiago | 349,000 | 3,121.93 | 111.7 |
| | 2 | Puerto Plata | 190,000 | 1,880.94 | 101.0 |
| | 3 | Valverde | 92,100 | 569.56 | 161.7 |
| | 4 | Españillat | 141,120 | 999.58 | 141.1 |
| | 5 | Santiago Rodríguez | 48,100 | 1,020.22 | 47.1 |
| | 6 | Monte Cristi | 73,600 | 1,989.04 | 37.0 |
| | 7 | Dajabón | 59,100 | 889.64 | 66.4 |
| III | | TOTAL REGION III | 916,200 | 8,675.73 | 105.6 |
| | 1 | Duarte | 208,100 | 1,292.37 | 161.0 |
| | 2 | La Vega | 290,000 | 3,377.09 | 85.8 |
| | 3 | María Trinidad Sánchez | 129,000 | 1,310.27 | 98.4 |
| | 4 | Salcedo | 92,600 | 533.00 | 173.7 |
| | 5 | Sánchez Ramírez | 138,000 | 1,174.33 | 117.5 |
| | 6 | Samaná | 58,500 | 988.67 | 59.2 |
| IV | | TOTAL REGION IV | 565,900 | 14,555.18 | 38.9 |
| | 1 | Barahona-Pedernales | 118,100 | 3,538.47 | 33.5 |
| | 2 | Independencia-Bahoruco | 98,700 | 3,237.56 | 30.5 |
| | 3 | Azua | 99,000 | 2,430.11 | 40.7 |
| | 4 | San Juan | 197,000 | 3,561.07 | 55.3 |
| | 5 | Estrella | 53,100 | 1,787.97 | 29.6 |
| V | | TOTAL REGION V | 351,600 | 7,898.44 | 44.5 |
| | 1 | San Pedro de Macorís | 74,100 | 1,165.78 | 63.5 |
| | 2 | El Seybo | 143,000 | 2,989.47 | 47.8 |
| | 3 | La Romana | 48,500 | 657.78 | 73.7 |
| | 4 | La Altagracia | 86,000 | 3,085.41 | 27.8 |

a) Estimated as of July 1, 1968

b) Includes Areas 1, 2, 3, and 4

J O A Q U I N B A L A G U E R
President of the Dominican Republic

NUMBER: 2091

CONSIDERING the relevancy of the static and dynamic aspects of demography, and their relationships to the phenomenon that regulate the socio-economic development and progress of a nation; and

CONSIDERING that for the planning and execution of a country's integral development policies and programs, the study, knowledge, magnitude, and directional tendencies of demographic change are imperative in order to evaluate its most significant variables and consequences so as to promote development through effective use of technical, economic, and human resources; and

CONSIDERING that underdeveloped nations have a high population growth rate, widespread incidence of disease, high illiteracy, high mortality, inadequate housing, malnutrition, low per-capita income and almost total lack of the necessary resources to accelerate desired socio-economic change, factors that together with the existing imbalance between population and production notably affect the norms of potential economic growth; and

CONSIDERING that population policies must be preceded by an objective scientific study before being applied to any nation since population problems act as a common denominator affecting all social classes and therefore making it advisable to join public and private resources in one united effort to create an adequate operational organization to fulfill the proposed goals;

UNDER Article 4, Clause 15, of Law No. 1399, April 17, 1967, and Articles 173 and 174 of the Public Health Code, Law No. 4471, of June 3, 1956; and

Exercising the rights conferred by Article 55 of the Constitution of the Republic, I do declare the following

D E C R E E:

Art. 1.- The National Population and Family Council, hereby established as a dependency of the Secretariat of Public Health and Social Welfare, has as its principal objective the study, investigation, analysis and dissemination of all matters relating to the country's population growth, mobility and future projections of the same. Said Council will perform these activities through an Executive Board attached to the Secretariat of Health and Social Welfare and will be formed as detailed below.

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Art. 2.- The National Population and Family Council constitutes the highest authority with regard to family and population planning and will consist of the following members: The Secretary of Health and Social Welfare who will preside; a Representative from the Technical Secretariat of the Presidency; a Representative from the Secretariat of Education and Fine Arts; a Representative from the Secretary of Agriculture; a Representative from the Secretariat of Labor; a Representative from the Dominican Association for Family Welfare; and an Executive Secretary.

Art. 3.- The National Population and Family Council may be advised by a Technical Committee and may hold joint meetings if considered necessary.

Art. 4.- The National Population and Family Council may delegate authority to the Executive Secretary with regard to the signing of financial agreements with cooperating agencies or organizations, private or public, national or international, which have been asked to participate in the programs to be financed.

Clause.- Funds provided by national or international organizations for such programs shall be administered by the National Population and Family Council which may delegate the authority under its responsibility to the Executive Secretary of said Council for the administration of any of its programs with the condition that a monthly statement of expenditures and benefits obtained be presented.

Art. 5.- The Executive Secretary of the National Population and Family Council shall supervise the tasks of the professional staff as indicated below, and the technical operations of this division according to planning principals established by the National Population and Family Council. The Executive Secretary will be designated by the President of the Council with the approval of its members.

Art. 6.- The representatives of the various Secretariats shall be designated by the Ministers of the respective aforementioned Secretariats; the Representative of the Dominican Association for Family Welfare shall be designated by said organization with the approval of the majority of the members of the National Population and Family Council.

Art. 7.- The positions of the members of the National Population and Family Council shall be honorary. The only exception will be the Executive Secretary who will receive compensation and shall remain in office as long as at least two thirds of the National Population and Family Council agree that he is performing his duties well, and properly and conscientiously executing programs.

- 3 -

Art. 8.- The National Population and Family Council, through its Executive Secretary, will perform as its principal tasks, planning, studies, investigations, and technical advice and assistance with regard to maternal infant programs, and all other related programs, which in the opinion of the Secretary of Health, need technical assistance and supervision, thus integrating the Executive Secretary's duties with the technical divisions of the Secretariat of Health. In this way, the Executive Secretary will have available the services of a multi-professional staff, such staff being necessary for the execution of the programs previously agreed upon by the National Population and Family Council.

Art. 9.- The professional staff will be salaried and will be contracted by the National Population and Family Council for as long as is necessary and established by agreements with the agencies or organizations providing economic assistance to finance the activities to be carried out by the Executive Secretary under the authorization and responsibility of the National Population and Family Council.

Art. 10.- The National Population and Family Council will be governed by rules approved by the Executive Chief of State, that will define the duties and functions of the National Population and Family Council as well as those of the Executive Secretary, as office chief and director of programs to be carried out by authorization of said Council, as well as the salaries and activities of necessary personnel.

Art. 11.- The National Population and Family Council as well as the Executive Secretary and their dependencies, shall have its offices in the Secretariat of Health. Furthermore, the National Population and Family Council shall hold its meetings in said Secretariat and shall meet at least once a month.

Art. 12.- The National Population and Family Council will establish, upon deeming it convenient, Consultative Committees that will act as a liaison between the government planning system and the private sector. Said Committees shall have advisory responsibilities and shall be formed by persons representing public, private, national, and/or international institutions having direct relationships with economic, social, and religious problems. To this effect, the President of the National Population and Family Council shall select these individuals from among those knowledgeable in the different aspects of socio-economic-religious problems, the creative capacity of said Committees not to be limited by the President of the National Population and Family Council.

Art. 13.- The National Population and Family Council shall have free postal and telegraphic privileges.

APPROVED AND SIGNED in Santo Domingo de Guzmán, National District, Capital of the Dominican Republic, February 14, 1968, year 124 of the Independence and 105 of the Restoration.

Joaquín Balaguer

SECRETARIAT OF STATE FOR HEALTH AND SOCIAL ASSISTANCE
NATIONAL POPULATION COUNCIL
DOMINICAN REPUBLIC

PLAN FOR A NATIONAL POPULATION PROGRAM

The National Population Council proposes two programs:

I. Immediate Short-range Program

II. Long-range Program

I. Immediate Short-range Program

This will consist of the expansion of family planning services to six provincial capitals as follows:

1. Santiago
2. San Francisco de Macorís
3. Puerto Plata
4. Barahona
5. San Pedro de Macorís
6. La Romana

This immediate program is proposed on the basis of trained and services facilities available in the provincial capitals. This goal is expected to be achieved during 1968 because the expansion of the program will be based upon the results obtained through the program development and consolidation process, which will enable the Secretary of Health to start other clinics before the end of this year.

Moreover, in conjunction with the Dominican Family Planning Association, a training program for doctors and paramedical personnel is under study, and is expected to start as soon as the private association receive the IPPF grant. This program consists in outlining a basic course at a professional level, and the arrangement with hospitals, centers and sub-centers to establish intensive in-service training courses. The main program for training will be carried out in a model clinic by the private association.

II. Long-range Program

Introduction

The National Population Council proposes a microdemographic approach to the solution of the population problem of the Dominican Republic, which consists in providing nationwide urban-rural family planning services in comprehensive maternal infant care clinics at government health facilities.

These government health facilities consist of a coordinated network of:

Regional Integrated Hospitals
Provincial Health Centers
Municipal Health Subcenters, and
Rural Health Clinics

The Maternal Infant Care program that will be carried out at all levels of this network consists of the following phases:

1. Prenuptial: Serology and VD control
2. Prenatal care
3. Intra-partum Services
4. Post-partum Services including cytology and family planning

The family planning services will be offered especially to post-partum patients.

Goals

1. To reduce present birth rate, 48/1000 to 40/1000 in 4 years and 28/1000 in 10 years.
2. To reduce population growth rate from 3.4% to 2.7% by 1972.
3. During 10 years insert 1.5 million IUD's and register 1.0 million women in other methods for a total of 2.5 million.

Methods

The family planning methods will be offered on a voluntary free choice, non-coercive basis. The following methods will be offered: Oral tablets, rhythm, IUD, vaginal foam, prophylactic. (Sterilization and abortion are not considered family planning methods).

Training

Medical and paramedical personnel will be trained preferably by in-country programs. Some leaders will receive third-country training.

The in-country training should start with a National Training Center, preferably at the Maternity Hospital, if possible with Medical School affiliation, but later should have regional in-service training programs.

Educational Programs

Will be directed to all sectors and levels of the population, including both sexes. A woman physician with many years of experience in the Health Education field, will be in charge of the training and educational programs.

All educational materials will be specially prepared or adapted for the Dominican Republic.

Incentive Program

Salary subsidies are proposed for medical and paramedical personnel working in this field in order to:

1. Improve stability of health personnel
2. Compensate for low salaries
3. Compensate for the additional overload of patients

Evaluation Program

An on-going system will be used to evaluate the administration, the methods the attitudes and the impact of the program.

Financing

The National Population Council will request financial assistance from international agencies, both private and governmental, such as:

1. Governmental
 - a. United Nations and its specialized agencies:
UNICEF, UNESCO, WHO, etc.
 - b. USAID
 - c. Sweden
 - d. England

2. Private
 - a. Population Council
 - b. Ford Foundation
 - c. IPPF
 - d. Rockefeller Foundation
 - e. Pathfinder Fund
 - f. Church World Service
 - g. CARE
 - h. Milbank Fund
 - i. Guggenheim Foundation
Etc.

| City | Population | Women (15-44) | Children (0-4) | Total Recipients | Rate (4.37) Monthly | Cormeal (000 Pounds) Per Year | Rate (1.4) Monthly | Wheat Flour (000 Pounds) Per Year |
|----------------------|------------------|------------------|-------------------|------------------|------------------------|-------------------------------------|-----------------------|---|
| Distrito Nacional | 789,798 | 80,997 | 158,000 | 238,997 | 1,027,687 | 12,332 | 238,997 | 2,868 |
| Barrahona | 45,938 | 4,706 | 9,200 | 13,908 | 59,804 | 718 | 13,908 | 167 |
| San Pedro de Macoris | 136,540 | 13,996 | 27,400 | 41,396 | 178,003 | 2,136 | 41,396 | 497 |
| La Romana | 43,192 | 4,428 | 8,600 | 13,028 | 56,020 | 672 | 13,028 | 156 |
| Puerto Plata | 79,428 | 7,526 | 14,800 | 22,326 | 96,002 | 1,152 | 22,326 | 268 |
| San Pedro de Macoris | 46,331 | 4,749 | 5,400 | 10,149 | 43,641 | 524 | 10,149 | 122 |
| Santiago | 216,356 | 22,177 | 44,000 | 66,177 | 284,561 | 3,415 | 66,177 | 794 |
| TOTAL | 1,951,578 | 138,579 | 267,400 | 405,981 | 1,745,718 | 20,949 | 405,981 | 4,872 |

CSC Value FY-69
 Milk = .2378
 Cormeal = .0362
 W. Flour = .0420

| City | Total Recipients | BULGUR (000 Pounds) | | R. OATS (000 Pounds) | | MILK (000 Pounds) | | VEG. OIL (000 Pounds) | |
|----------------------|------------------|---------------------|---------------|----------------------|--------------|---------------------|---------------|-----------------------|--------------|
| | | Rate (3¢) Monthly | Per Year | Rate (1¢) Monthly | Per Year | Rate (2.7¢) Monthly | Per Year | Rate (2¢) Monthly | Per Year |
| Distrito Nacional | 238,997 | 716,991 | 8,604 | 238,997 | 2,868 | 645,292 | 7,743 | 477,994 | 5,736 |
| Barahona | 13,908 | 41,724 | 501 | 13,908 | 167 | 37,552 | 451 | 27,816 | 334 |
| San P. de Macoris | 41,896 | 124,168 | 1,490 | 41,396 | 497 | 111,769 | 1,341 | 82,792 | 993 |
| La Romana | 13,028 | 39,034 | 469 | 13,028 | 156 | 35,176 | 422 | 26,056 | 313 |
| Puerto Plata | 22,326 | 66,978 | 804 | 22,326 | 268 | 60,280 | 723 | 44,652 | 536 |
| San Pedro de Macoris | 10,149 | 30,447 | 365 | 10,149 | 122 | 27,402 | 329 | 20,298 | 248 |
| Santiago | 66,177 | 198,531 | 2,382 | 66,177 | 794 | 178,678 | 2,144 | 132,354 | 1,588 |
| TOTAL | 405,981 | 1,217,943 | 14,615 | 405,981 | 4,872 | 1,096,149 | 13,153 | 811,962 | 9,743 |

CCC Value - FY 69

Milk = .2370

Bulgar = .0409

Veg. Oil = .1500

R. Oats = .0668

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EXISTING AND PROGRAMED BUILDINGS AND BEDS OF THE SECRETARIAT OF HEALTH - BY REGIONS AND HEALTH AREAS - DOMINICAN REPUBLIC - 1968

| | | | EXISTING BUILDINGS | | | | | PROGRAMED BUILDINGS | | | | | | |
|--------|------|-------------------------------------|--------------------|--------------------|--------------------|-------------|------|---------------------|--------|-----------|-------------------|-------------|-----|-------------------|
| REGION | AREA | GEOGRAPHIC LIMITS | HOSPITALS | | No. HEALTH CENTERS | SUB-CENTERS | | No. RURAL CLINICS | OTHERS | HOSPITALS | | SUB-CENTERS | | No. RURAL CLINICS |
| | | | No. | Beds | | No. | Beds | | No. | Beds | No. | Beds | | |
| | | TOTAL FOR THE COUNTRY | 93 ^o | 4,114 ^o | 5 | 24 | 218 | 19 | 149 | 5 | 979 | 30 | 271 | 86 |
| I | | TOTAL REGION I | 9 | 1,796 | 1 | 7 | 52 | 4 | 25 | 1 | 500 | 2 | 16 | 9 |
| | 1 | Oriente RD and Monte Plata-Bayag. | 1 | 180 | | 3 | 32 | | | | 120 _{a)} | 2 | 16 | 1 |
| | 2 | North One RD, V. Altagrafia-Yamae' | 1 | 150 | | 2 | 20 | | 9 | 1 | 160 | | | 3 |
| | 3 | North Two RD | 1 | 150 | | | | | | | 150 _{a)} | | | |
| | 4 | Ocidental RD | 3 | 863 | 1 | | | | | | | | | |
| | 5 | San Cristóbal (Partien of Province) | 1 | 303 | | 2 | | 3 | 11 | | 50 _{a)} | | | 1 |
| | 6 | Pesavia (Province) | 2 | 150 | | | | 1 | 5 | | | | | 4 |
| II | | TOTAL REGION II | 8 | 1,007 | 2 | 6 | 48 | 8 | 44 | 2 | 167 | 10 | 80 | 25 |
| | 1 | Santiago | 2 | 497 | 1 | 1 | 12 | 1 | 11 | | 100 _{a)} | 4 | 30 | 6 |
| | 2 | Puerto Plata | 1 | 181 | 1 | 2 | 10 | 7 | 6 | | | 1 | 10 | 1 |
| | 3 | Valverde | 1 | 23 | | | | | 4 | 1 | 27 | 1 | 10 | 5 |
| | 4 | Español | 1 | 150 | | | | | 5 | | | 1 | 10 | 4 |
| | 5 | Santiago Rodríguez | 1 | 44 | | 1 | 10 | | 4 | | | | | 3 |
| | 6 | Monte Cristi | 1 | 105 | | | | | 8 | | | 3 | 30 | 4 |
| | 7 | Enjebón | 1 | 67 | | 2 | 16 | | 6 | 1 | 30 | | | 2 |
| III | | TOTAL REGION III | 7 | 601 | | 2 | 26 | 1 | 27 | 1 | 60 | 10 | 80 | 23 |
| | 1 | Duarte | 1 | 233 | | | | 1 | 5 | | | 3 | 33 | 7 |
| | 2 | La Vega | 2 | 274 | | 1 | 16 | | 5 | | | 1 | 10 | 3 |
| | 3 | María Trinidad Sánchez | 1 | 44 | | 1 | 10 | | 5 | | 10 _{a)} | 2 | 20 | 2 |
| | 4 | Salcedo | 1 | 150 | | | | | 4 | | | 2 | | 3 |
| | 5 | Sánchez Ramírez | | | | | | | 4 | 1 | 50 | 2 | 20 | 3 |
| | 6 | Samana | 2 | 100 | | | | | 4 | | | | | 2 |

| REGION | AREA | GEOGRAPHIC LIMITS | 1968-1970 | | | | | | | | | | | |
|--------|------|-----------------------|--------------------|------|--------------------|-------------|------|----------------------|-----------|------|------------------|------|-------------------|----|
| | | | EXISTING BUILDINGS | | | | | PROGRAMMED BUILDINGS | | | | | | |
| | | | HOSPITALS | | No. HEALTH CENTERS | SUB-CENTERS | | No. RURAL CLINICS | HOSPITALS | | SUB-CENTERS | | No. RURAL CLINICS | |
| | | | No. | Beds | | No. | Beds | | No. | Beds | No. | Beds | | |
| IV | | TOTAL REGION IV | 5 | 368 | | 6 | 50 | 6 | | 37 | 142 | 7 | 70 | 14 |
| | 1 | Barahona-Pedernales | 1 | 57 | | 2 | 20 | 6 | | 10 | 39 ^{a)} | | | 1 |
| | 2 | Independencia-Sacruco | 1 | 36 | | 1 | 6 | | | 10 | 50 ^{oo} | 3 | 30 | 2 |
| | 3 | Ayua | 1 | 66 | | 1 | 12 | | | 5 | 44 ^{a)} | | | 4 |
| | 4 | San Juan | 1 | 165 | | | | | | 6 | 45 ^{a)} | 2 | 20 | 5 |
| | 5 | Estrellita | 1 | 44 | | 2 | 12 | | | 6 | 20 ^{a)} | 2 | 20 | 2 |
| V | | TOTAL REGION V | 4 | 142 | 2 | 3 | 42 | | 16 | 1 | 120 | 1 | 15 | 15 |
| | 1 | San Pedro de Macoris | 1 | 12 | 1 | 1 | 10 | | 3 | 1 | 100 | | | 5 |
| | 2 | El Seybo | 2 | 80 | | 2 | 32 | | 8 | | 70 ^{a)} | 1 | 15 | 5 |
| | 3 | La Romana | | | 1 | | | | 2 | | | | | 2 |
| | 4 | Higüey | 1 | 50 | | | | | 0 | | | | | 3 |

^c Does not include buildings nor beds for chronic patients.

^{oo} GADR Noyts.

^{a)} Expansion of beds capacity.

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DISTRIBUTION OF HOSPITALIZATION CENTERS - HOSPITAL BEDS IN THE REPUBLIC
OFFICIAL AND PRIVATE HOSPITAL BEDS PER 1,000 PERSONS

| PROVINCE | Hospitalization Centers | | | | Hospital Beds | | | | Beds per 1,000 persons | Official beds per 1,000 persons |
|-------------------|-------------------------|--------------------|------------|------------|-------------------|--------------------|--------------|---------------|------------------------------|---------------------------------------|
| | Sec. of Health | Social Security | Private | Total | Sec. of Health | Social Security | Private | Total | | |
| National D. | 10 | 3 | 78 | 91 | 3,337 | 456 | 988 | 4,781 | 9 | 6.12 |
| Altagracia | 1 | - | 3 | 4 | 10 | - | 16 | 26 | 0.32 | 0.12 |
| La Romana | - | 1 | 6 | 7 | - | 242 | 63 | 304 | 3.41 | - |
| Arca | 2 | - | 2 | 4 | 78 | - | 16 | 94 | 2.06 | 1.71 |
| Baoruco | - | - | 2 | 2 | - | - | 8 | 8 | 0.12 | - |
| Barahona | 1 | 1 | 10 | 12 | 57 | 46 | 88 | 191 | 2.01 | 0.60 |
| San Juan | 1 | - | 7 | 8 | 165 | - | 43 | 208 | 1.59 | 0.93 |
| Baranto | 1 | - | 16 | 17 | 181 | - | 132 | 313 | 1.63 | 0.94 |
| Española | 1 | - | 4 | 5 | 150 | - | 45 | 195 | 1.35 | 1.03 |
| Independencia | 2 | - | 1 | 3 | 29 | - | 2 | 31 | 0.95 | 0.89 |
| Ma. T. Sánchez | 1 | 1 | 2 | 4 | 30 | 22 | 9 | 61 | 0.60 | 0.29 |
| Bayamo | 3 | - | 1 | 4 | 93 | - | 7 | 90 | 1.85 | 1.71 |
| Monte Cristi | 1 | - | 3 | 4 | 105 | - | 24 | 129 | 1.83 | 1.49 |
| Pedernales | 1 | 1 | - | 2 | 20 | 38 | - | 58 | 5.65 | 1.94 |
| Puerto Plata | 1 | 1 | 8 | 10 | 250 | 20 | 85 | 355 | 2.37 | 1.67 |
| Salcedo | 1 | - | 4 | 5 | 150 | - | 26 | 176 | 2.03 | 1.73 |
| Sagua | 2 | - | - | 2 | 98 | - | - | 98 | 1.85 | 1.85 |
| San P. de Macorís | 1 | 1 | 2 | 4 | 12 | 12 | 736 | 760 | 8.96 | 0.14 |
| Elías Piña | 3 | - | - | 3 | 66 | - | - | 66 | 1.28 | 1.28 |
| Sánchez Ramírez | - | 1 | 2 | 3 | - | 39 | 20 | 59 | 0.53 | - |
| Santiago | 2 | 1 | 17 | 20 | 503 | 239 | 184 | 926 | 2.70 | 1.47 |
| Sant. Rodríguez | 1 | - | 2 | 3 | 46 | - | 9 | 55 | 1.14 | 0.96 |
| Saybo | 4 | - | 3 | 7 | 132 | - | 14 | 146 | 1.06 | 0.96 |
| San Cristóbal | 7 | 3 | 6 | 16 | 567 | 218 | 74 | 859 | 2.90 | 1.91 |
| Peravia | 2 | - | 4 | 6 | 150 | - | 25 | 175 | 1.38 | 1.18 |
| Valverde | 1 | 1 | 1 | 3 | 23 | 46 | 12 | 81 | 1.15 | 0.32 |
| La Vega | 3 | 1 | 8 | 12 | 290 | 36 | 56 | 382 | 1.34 | 1.02 |
| TOTAL | 53 | 16 | 192 | 261 | 6,532 | 1,414 | 2,681 | 10,627 | 3.01 | 1.85 |

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Cost of Hospital Equipment

| General Categories of Hospital Equipment | Cost Per Unit | Number of Units | Total Cost |
|--|---------------|-----------------|---------------|
| Instruments (Gyn. Surgical Etc.) | 5,000 | 20 | 100,000 |
| Laboratory & Blood Bank | 5,000 | 20 | 100,000 |
| Out Patient Ob-Gyn. Examining Room | 1,000 | 300 | 300,000 |
| X-Ray Equipment | 20,000 | 15 | 300,000 |
| Delivery Room | 6,000 | 40 | 240,000 |
| Operating Room | 10,000 | 20 | 200,000 |
| Sterilizer Room | 9,000 | 12 | 108,000 |
| Beds (1300) | 300 | 1,300 | 390,000 |
| Electrical Power Plants | 10,000 | 10 | 100,000 |
| Kitchen | 10,000 | 20 | 200,000 |
| Water Pumps | 1,000 | 35 | 35,000 |
| Laundry | 15,000 | 20 | 300,000 |
| (Vehicles | | 48 | 110,000 |
| (Maintenance Equipment | | | <u>17,000</u> |
| | | | 2,500,000 |

| <u>Hospitals</u> | <u>No. of Beds</u> | <u>Cost of Additional Equipment</u> |
|---|--------------------|-------------------------------------|
| Moscoso Puello | 150 | \$ 300,000 |
| L. Aybar | 150 | 300,000 |
| Padre Billini | 103 | 200,000 |
| Juan P. Pina | 91 | 180,000 |
| Yamasá | 35 | 50,000 |
| Cotuí | 35 | 50,000 |
| Santiago de Caballeros | 100 | 200,000 |
| S. F. Macoris | 44 | 100,000 |
| Nagua | 38 | 50,000 |
| Barahona | 50 | 100,000 |
| Azua | 50 | 100,000 |
| San Juan de Maguana | 60 | 120,000 |
| Matas de Farfán | 50 | 100,000 |
| Seybo | 26 | 50,000 |
| Dajabón | 25 | 50,000 |
| Monte Cristi | 50 | 100,000 |
| Maternity | | 50,000 |
| SUB-TOTAL | | <u>\$2,075,000</u> |
| 25 Maternity-SubCenters at \$3.500 each | | 90,000 |
| 89 Rural Clinics at \$1,500 each | | 135,000 |
| SUB TOTAL | | <u>\$225,000</u> |
| Vehicles | | \$100,000 |
| Emergency power plants and water pumps | | 100,000 |
| SUB TOTAL | | <u>\$200,000</u> |
| GRAND TOTAL | | <u>\$2,500,000</u> |

Estimated GODR Costs for Additional Operations and Salaries
 for Completed Facilities

| <u>HOSPITAL</u> | <u>ADDITIONAL BEDS</u> | <u>ADDITIONAL SUBSIDY PER MONTH</u> | <u>ADDITIONAL SALARIES PER MONTH</u> |
|-------------------------------------|----------------------------|---|--|
| Moscoso Puello | 150 | 11,000 | 20,000 |
| Luis Aybar | 150 | 12,000 | 25,000 |
| Padre Billini | 103 | 4,000 | 10,000 |
| Juan Pablo Pina | 91 | 2,500 | 5,000 |
| Yamasá | 35 | 700 | 5,000 |
| Cotui | 35 | 1,000 | 5,000 |
| Santiago | 100 | 6,000 | 7,000 |
| San Francisco de Macorís | 44 | 2,500 | 5,000 |
| Nagua | 38 | 2,000 | 1,000 |
| Barahona | 50 | 1,700 | 4,500 |
| Azua | 50 | 2,000 | 4,300 |
| San Juan de la Maguana | 60 | 3,700 | 5,250 |
| Matas de Farfán | 50 | 1,500 | 4,500 |
| El Seybo | 26 | 1,200 | 4,500 |
| Dajabón | 25 | 1,500 | 1,900 |
| Monte Cristy | <u>50</u> | <u>1,700</u> | <u>2,000</u> |
| | 1,057 | 55,000 | 110,000 |
| | | Per year... <u>660,000</u> | <u>1,320,000</u> |
| 25 Health Maternity Sub- Centers | 250 | Per month... 20,000 | 33,000 |
| | | Per year... <u>240,000</u> | <u>396,000</u> |
| 89 Rural Clinics | - | Per month... 15,000 | 30,000 |
| | | Per year... <u>180,000</u> | <u>360,000</u> |

Present Costs (Personnel & Operations) of Hospital

| NOMBRE | Beds | to be Remodelled | | | Average Daily Cost Per Bed |
|--|------|--------------------|--------------------|----------|----------------------------------|
| | | Monthly Subsidy | Personnel Costs | Total | |
| Hosp. Padre Bellini | 163 | \$ 6,000 | \$15,805 | \$21,805 | \$4.46 |
| " Luis Aybar | 148 | 6,000 | 14,930 | 20,930 | 4.71 |
| " Moscoso Puello | 150 | 7,000 | 19,145 | 26,145 | 5.80 |
| " Dario Contreras | 180 | 7,000 | 16,735 | 23,735 | 4.39 |
| " Robert Reid (Childrens Hospital) | 350 | 9,000 | 28,280 | 37,280 | 3.55 |
| " Psiquiatrico P. Billini | 700 | 6,000 | 11,010 | 17,010 | .81 |
| Mater. Ntra. Sra. Altagracia | 350 | 8,400 | 25,490 | 33,890 | 3.23 |
| San. R. de la Cruz Lora | 800 | 30,000 | 32,015 | 62,015 | 2.58 |
| " Infantil Sto. Socorro | 136 | 4,000 | 8,570 | 12,570 | 3.08 |
| Hosp. Simon Striddles(Azua) | 63 | 2,000 | 5,725 | 7,725 | 4.08 |
| Mater. Dr. A. Cabral | 15 | 330 | 1,045 | 1,375 | 3.06 |
| Hosp. Jaime Mota | 57 | 2,225 | 7,740 | 9,965 | 5.83 |
| Hosp. Matias Mella(Dajabon) | 62 | 1,440 | 5,050 | 6,490 | 3.49 |
| Mater. Loma Cabrera | 15 | 240 | 1,305 | 1,545 | 3.43 |
| " Restauracion | 6 | 240 | 695 | 935 | 5.18 |
| Hosp. S. Vicente Paul(S.F.de M.) | 181 | 5,400 | 13,175 | 18,575 | 3.42 |
| Hosp. Rosa Duarte | 50 | 1,550 | 4,185 | 5,735 | 3.82 |
| Mater. Hondo Valle | 6 | 108 | 815 | 923 | 5.13 |
| " Benica | 10 | 216 | 620 | 836 | 2.78 |
| Hosp. Toribio Bensosme | 150 | 4,500 | 10,780 | 15,280 | 3.38 |
| Hosp. Gral. Melenciano | 23 | 660 | 2,950 | 3,610 | 5.23 |
| Mater. Duverge | 6 | 750 | 1,030 | 1,780 | 9.92 |
| Hosp. Nagua | 30 | 1,000 | 8,945 | 9,945 | 11.05 |
| Hosp. P. Fantino(Monte Cristi) | 105 | 2,300 | 8,390 | 10,690 | 3.38 |
| Hosp. Ricardo Limardo | 250 | 6,000 | 14,920 | 20,920 | 2.76 |
| Hosp. J. Pablo Pina (San Cristobal) | 303 | 9,400 | 25,315 | 34,715 | 3.82 |
| Mater. Yamasa | 17 | 270 | 270 | 540 | 1.05 |
| Mater Beyaguana | 20 | 750 | 1,590 | 2,340 | 3.90 |

- 2 -

| NOMBRE | Beds | Monthly Sibsidy | Personnel Costs | 2 & 3 Total | Average Daily Cost Per Bed |
|---------------------------------------|--------------|--------------------|--------------------|----------------|----------------------------------|
| Mater. Monte Plata | 20 | \$ 750 | \$ 2,275 | \$ 3,025 | \$5.04 |
| Mater. Villa Altagracia | 20 | 750 | 1,695 | 2,445 | 4.07 |
| Colonia Leprosos | 181 | 4,000 | 3,330 | 7,330 | 1.35 |
| Hosp. Santome (San Juan) | 165 | 4,200 | 12,750 | 16,950 | 3.42 |
| Hosp. Stgo. Rodriguez | 46 | 1,250 | 4,995 | 6,245 | 4.49 |
| " Jose Ma. Cabral(Santiago) | 303 | 9,000 | 22,775 | 31,775 | 3.49 |
| " Arturo Grullon | 200 | 7,000 | 18,050 | 25,050 | 4.17 |
| Hosp. Pascasio Toribio | 150 | 5,625 | 12,835 | 18,460 | 4.09 |
| Hosp. Leopoldo Pou | 48 | 1,200 | 4,575 | 5,775 | 4.01 |
| " Alberto Gautreaux | 50 | 1,400 | 3,695 | 5,095 | 3.39 |
| Hosp. Teofilo Hernandez (El Seybo) | 67 | 1,800 | 5,505 | 7,305 | 3.63 |
| Mater. Hato Mayor | 20 | 750 | 1,185 | 1,935 | 3.23 |
| Mater. Miches | 15 | 300 | 300 | 600 | 1.33 |
| H. Elupina Cordero | 30 | 810 | 4,490 | 5,300 | 5.88 |
| H. Dr. Alejo Martinez | 12 | 385 | 1,845 | 2,230 | 6.19 |
| H. Morillo King | 150 | 5,625 | 18,085 | 23,710 | 5.23 |
| H. Marchena | 120 | 3,600 | 8,945 | 12,545 | 3.48 |
| Mater. Jarabacoa | 20 | 750 | 2,085 | 2,835 | 4.91 |
| Hosp. Luis Bogaert | 23 | 1,000 | 4,215 | 5,215 | 7.55 |
| H. Ntra. Sra. Altagracia | 50 | 1,115 | 6,115 | 7,230 | 4.82 |
| Ntra. Sta. de Regla | 100 | 3,500 | 9,405 | 12,905 | 4.30 |
| Hosp. San Jose | 50 | 1,350 | 5,555 | 6,905 | 4.60 |
| Mater. Pedernales | ----- | ----- | 195 | 195 | ----- |
| | <u>6,586</u> | <u>184,939</u> | <u>448,110</u> | <u>633,049</u> | |

SCHEDULE
 HEALTH SERVICES PLAN (BY REGION AND AREA)
 CALENDAR YEARS (1967-1972)

- Key: 1. Preparation of Documents and Letting of Construction Contracts.
 2. Construction and Equipping of Facilities.
 3. Staffing and Implementation of Program.
 4. Annual Evaluation.

| HEALTH REGION | CY 1967 | CY 1968 | CY 1969 | CY 1970 | CY 1971 | CY 1972 |
|--|---------|---------|---------|---------|---------|---------|
| I | | | | | | |
| San Cristobal | | 1 | 2 | 3 | 4 | |
| National District (Eastern Area) | 1 2 | 3 | 4 | | | |
| National District (Northern Area) | | 1 | 2 | 3 | 4 | |
| National District (North West Area) | | | 1 2 | | 3 | 4 |
| Peravia | | | 1 2 | 3 | 4 | |
| National District (Southwestern Area) | | | | 1 2 | 3 | 4 |
| II | | | | | | |
| Puerto Plata | | 1 | 2 3 | 4 | | |
| Santiago | | 1 | 2 | 3 | 4 | |
| Valverde | | 1 2 | 3 | 4 | | |
| Espailat | | | 1 2 | 3 | 4 | |
| Monte Cristy | | | | 1 2 | 3 | 4 |
| Dajabón | | | | 1 2 | 3 | 4 |
| Santiago Rodriguez | | | | 1 2 3 | 4 | |

| HEALTH REGION | CY 1967 | CY 1968 | CY 1969 | CY 1970 | CY 1971 | CY 1972 |
|------------------------|---------|---------|---------|---------|---------|---------|
| III | | | | | | |
| Duarte | | 1 | 2 | 3 | 4 | |
| La Vega | | | 1 2 | 3 | 4 | |
| Salcedo | | | 1 2 | 3 | 4 | |
| Ma. Trinidad Sanchez | | | 1 2 | 3 | 4 | |
| Sanchez Ramirez | | | 1 2 | 3 | 4 | |
| Samaná | | | 1 2 3 | 4 | | |
| IV | | | | | | |
| Barahona-Pedernales | | 1 | 2 | 3 | 4 | |
| San Juan de la Maguana | | 1 | 2 | 3 | 4 | |
| Bahoruco-Independencia | | 1 | 2 3 | 4 | | |
| Estrelleta | | 1 | 2 3 | 4 | | |
| Azua | | 1 | 2 | 3 | 4 | |
| V | | | | | | |
| San Pedro de Macóris | | | | 1 2 3 | 4 | |
| El Seybo | | | | 1 2 | 3 | 4 |
| La Romana | | | | 1 2 3 | 4 | |
| Higüey | | | | 1 2 3 | 4 | |

June 13, 1968

Detailed Engineering and Construction Analysis

A. Description of the Project

The proposed project contemplates the following:

Rehabilitation of 15 existing hospitals

Construction of 1 new hospital

Construction of 15 health maternal sub-centers

Remodeling of 12 health maternal sub-centers

Construction of 89 rural clinics

1. Hospitals

In planning the hospital rehabilitation, basic consideration was given to the services to be supplied the community by the facility, particularly those for maternal and infant care. The new facilities will provide an additional 1,057 hospital beds, 85% of which will be used for maternal and infant care.

In order to construct an economical, functional, and efficient plant, the overall hospital design will require a good deal of work on the existing facility, as well as the addition of new service areas.

In the hospital facilities to be rehabilitated, the administrators were questioned and the building plans were carefully analyzed and studied, by the architects and USAID/Engineering to obtain the best solution in each case.

The general plan for the rehabilitation of the hospitals was to provide the basic functional units according to the objectives of this program, and in accordance with the population of each town. As a result of the urgent need for improvement of these facilities, the new design of the out-patient clinics (examination room, pediatrics, obstetrics, laboratory, radiology, etc.) were studied in special detail.

Generally, consideration for the patient governed the primary design, by means of assuring protection from contamination in controlled circulation, short traffic routes to reduce time and effort for all personnel, separation of dissimilar activities to minimize mixing of different types of operations, and grouping of similar functions. Secondly, it was required to segregate

exterior traffic by means of separate entrances for visitors, out-patients, emergency patients, service and supply, and hospital staff.

Special consideration was given to improvement of the utilities, both internal and external, because of the sad state of maintenance existing in the former and the recognized inadequacy of the latter. For all the hospitals, the sanitary and waste disposal services have been studied, and additional capacity will be installed according to the requirements and the soil conditions of each hospital.

Each hospital will be provided with an adequate water supply, emergency power and an appropriate electrical system.

The detailed plans for each project are attached, and include the individual engineering report, cost estimates, and preliminary drawings.

Generally, the basic services provided in each hospital are the following:

a. Out-Patient Clinic

| | |
|-------------------|---------------------------|
| Waiting room | Emergency |
| Examination rooms | Admittance and Statistics |
| Radiology | Toilets |
| Pharmacy | |

b. Obstetrics and Pediatrics

| | |
|-------------------|-----------------|
| Examination rooms | Family planning |
| Seruntherapy room | Milk dispensary |
| | Toilets |

c. Administration

| |
|-------------------|
| Director's office |
| Staff |

d. Nursing Area

Janitor closet

Toilets

Nurses' Station

Private rooms

e. Surgical Suites

Patient preparation room

Operating rooms

Recovery

Sterile storage

Clean linen

f. Services

Laundry

Kitchen

Pantry

Soiled linen

Clean linen

Cleanup

Soiled linen

Locker room

Toilets

Sterilizer room

Morgue

Maintenance

2. Health Maternal Sub-centers

In the design of the health maternal sub-center, the size of the communities and the services to be provided were given primary consideration. Each health sub-center has 8 maternity beds, and the basic services of an out-patient clinic. These services are examination, health control and education, and milk dispensing. Serious medical cases will be referred to the provincial hospitals for treatment.

The health sub-centers will follow a standard design, except for the health sub-center that will be built in Santiago. The typical health sub-center will cost \$33,280, and will provide:

a. External services

Waiting room

Emergency

Examination room

Statistics and Records

Public Health Offices

Milk Dispensary

Toilets

b. Nursing Area

Wards

Nurses' bedrooms

Delivery Room

Toilets

c. Services

Kitchen

Laundry

3. Rural Clinics

The rural clinics will be constructed in less populated areas and will be serviced by a small permanent staff and a traveling medical team. A basic model has been selected for all rural clinics that will include the same facilities as a health sub-center, but without the 8 bed maternity ward.

The following facilities will be provided:

Waiting room

Public Health

Examination room

Emergency

Milk dispensary

Nurses' bedrooms

Infirmary

Toilet

B. Project Construction Procedures

Preliminary plans and cost estimates were prepared by selected private Dominican architects and reviewed and revised by USAID/Engineering Division. The background of the architects selected by AID and Public Health is excellent, many having considerable education abroad and practical experience. They have introduced many revisions and improvements in the Facility designs as a result of the study of similar projects built in the Dominican Republic and other countries, especially the United States.

The cost estimates were initially determined by the architect for each project, and then reviewed by USAID/Engineering. They were developed with regard to the particular problems involved in each hospital, and unit prices were developed accordingly.

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The cost estimates for the rehabilitation of the hospitals and construction of the health centers and rural clinics are as realistic as possible, given the preliminary status of the projects. They are in accordance with the unit construction costs in the Dominican Republic, and are based on the maximum use of local materials.

The following will probably be the source for construction materials:

Dominican Republic

- | | |
|-------------------------------|---|
| 1. Cement | 7. Hardwood lumber for doors |
| 2. Concrete blocks | 8. Sand, gravel |
| 3. Plastic pipes | 9. Paint |
| 4. Electrical wires | 10. Cement tiles |
| 5. Terrazzo tiles | 11. Clay or cement asbestos sewage pipes |
| 6. Aluminum and glass windows | 12. Lumber |

United States

- | | |
|--|-------------------------------|
| 1. Plumbing fixtures | 7. Accoustical ceilings |
| 2. Mechanical equipment (elevators, air conditioning, boilers, emergency power plant, water pump) | 8. Reinforcing steel |
| 3. Miscellaneous electrical fixtures | 9. Plywood for doors |
| 4. Miscellaneous hardware | 10. Special glasses for doors |
| 5. Glazed tile | 11. Asphalt felt roofing |
| 6. Vinyl tile | |

Skilled labor is generally available and of satisfactory quality in the Dominican Republic so as not to present any problems with respect to a construction labor force. It should be noted that unemployment rates are very high and that these projects will provide temporary employment to over 2,000 workers, many of whom are living in economically depressed areas.

The transportation of materials from Santo Domingo to the construction site do not represent problems because Santo Domingo is connected with fair to excellent roads to all towns of the Dominican Republic. Special care was taken in the selection of the rural clinics sites to avoid transportation difficulties, and those sites not accessible by all-weather roads were deleted.

With respect to qualified construction firms, there are presently numerous contractors that have been pre-qualified by both Public Works and USAID/ENG, that have sufficient equipment and experience on projects of similar size and complexity to ably handle these construction contracts.

C. Special Design Criteria

1. Hospitals

The design criteria for the rehabilitation of existing hospitals was submitted to the individual Dominican architects by USAID/ENG, in accordance with the requirements of the program. Provision for the present and future necessities of each hospital, including the referral services to be handled for the outlying network of sub-centers and rural clinics, has been considered essential.

Although many architects have worked on the preparation of these projects, all had the same orientation regarding the requirements for the program. AID/Engineering has coordinated their activities to assure a common objective throughout the program, and has visited each of the hospitals to personally determine the major requirements and design features.

Special attention has been given to the rehabilitation of the present hospitals, which, because of their unique conditions, presented numerous problems requiring both design ingenuity and planning ability.

Special care has been given towards assuring that the basic utilities at each larger Facility will be adequate, and in the case of electricity and water, operable in an emergency. The following

were considered minimum criteria for all hospitals: ,

- a. A proper waste disposal system (septic tanks, cesspools, and/or sewage pipes);
- b. A cistern and water pump to assure a continuous nominal water supply;
- c. Availability of nominal electrical power, as well as emergency generators to supply electricity to critical areas (surgery, delivery, emergency).

All the new additions will be built adjacent to existing hospitals. In all the cases the size of the ground occupied by the hospital is quite ample for these additions, except in the case of the Nagua Hospital where it will be necessary to purchase land.

Special design appears necessary for 4 hospitals where foundational work will be required (San Juan, San Cristobal, El Seybo and Santiago). For the other sites, no special problems are expected. This will be confirmed by adequate soil studies prior to final design.

2. Sub-centers and Rural Clinics

No special foundation work will be required at either the health centers or the rural clinic sites, because all the sites selected are free of special foundational problems.

3. General Design Criteria

The Dominican Republic construction code, which is essentially based on United States ACI standards, will be applicable to all construction projects under this program. In exceptional instances certain higher U.S. standards will be specified. The design of the buildings, therefore, will meet all the essential requirements of strength, safety, etc., provided for in U.S. building codes and standards, and as such will be acceptable to USAID/ENG.

All the materials to be used in these buildings will be selected on the basis of quality, so as to make the structures as permanent as possible.

4. General Construction Materials

The following materials are available in the Dominican Republic, and no problems are anticipated regarding their availability.

List of Design Materials

| <u>Item</u> | <u>Materials</u> |
|-----------------------------|--|
| Foundations | Reinforced concrete |
| Columns and beams | Reinforced concrete |
| Roof Slab | Reinforced Concrete |
| Floors | Terrazzo, cement, and ceramic tile |
| Exterior and interior walls | Concrete block, bricks, glazed tile |
| Windows | Aluminium and glass jalousies |
| Doors | Plywood panel, oak, ebony panel or glass |
| Paint | Latex-acrylic |
| Electrical | Will conform to US and DR codes |
| Lighting | Fluorescent fixtures |
| Plumbing | Will conform to US and DR codes |
| Walkways | Gravel, asphalt, concrete |
| <u>Water supply</u> | |
| Source | From the local water supply |
| Storage | Reinforced concrete cistern with electric pump |
| Distribution system | Galvanized steel pipes |
| <u>Sanitary system</u> | |
| Collection | Cast iron pipes, clay pipes |
| Treatment | Septic tanks or existing sewage system in the town |

D. Construction and Implementation Plan

The project will be administered for the GODR by the Secretariat of Public Health. Private Dominican A&E firms will, however, have the direct responsibility for implementation of construction, including supervision and inspection. The USAID/Engineering Division will provide the A&E firms with guidance and review in the preparation of final plans, specifications, and cost estimates, in addition to approving the latter.

The competitive bidding procedures will be prepared and implemented by both the private A&E firms and the Secretariat of Health, with USAID/ENG assistance. The Secretariat of Health shall employ additional personnel to coordinate this program. Both Public Health and Public Works will prepare the list of prequalified construction firms for competitive bidding, with the approval of USAID/ENG, and Public Works shall supervise the bidding procedures.

The basic supervision and inspection of the construction projects will be performed by the A&E firms, with Public Works providing the nominal inspection required under Dominican law. USAID/Engineering shall provide coordination and technical assistance to the A&E firms and Public Health, throughout both the design and construction phases, by means of frequent site visits.

A 30-month construction timetable is anticipated to complete all physical work. Bidding will be phased over a period of one year, after all plans are completed. Given the complexity of much of the hospital work, each project will be advertised individually. The sub-health centers may be grouped in packages of up to three and the rural clinics in packages of up to 8 or 10 to be advertised for construction.

The rehabilitation of the hospitals will be advertised first because of their priority and longer construction periods, and therefore, it is anticipated that the bidding will be open as soon as the final plans are completed.

A period of four months is estimated for the completion of the contract documents for all the projects. This period will precede the implementation of the Loan Agreement, since funds for the completion of final plans and specs are being provided under the PL 480 and SA package.

Competitive bidding for the construction will be accomplished in accordance with AID requirements and Dominican laws. It is expected that implementation of the project will continue for 30 months after the satisfying of conditions precedent in the Loan Agreement.

| <u>Activity Schedule</u> | <u>Portion of 30 Month Program</u> |
|---|------------------------------------|
| 1. <u>Prior to Implementation of Loan Agreement</u> | |
| Completion of final plans and specifications | 1st thru 4th month |
| 2. <u>After Implementation of Loan Agreement</u> | |
| a. Bid and award each health project | 2nd thru 5th month |
| bb. Supervision of construction | 3rd thru 30th |
| c. Project construction | 3rd thru 28th |
| d. Final acceptance and disbursement | 28th thru 30th |
| 3. <u>Procurement/Disbursement Schedule</u> | |
| a. Project construction | 2nd thru 30th |

PROJECT: Rehabilitation of Dr. Moscoso Puello Hospital in Santo Domingo

1. Scope of Work:

The project consists of the rehabilitation of the existing building and construction of a new structure to provide adequate facilities for an out-patient clinic and health center. In addition, the building rehabilitation will provide 150 additional beds to the existing 150 beds to serve approximately 175,000 inhabitants.

The work will be divided into two parts: first, construction of a new annex (3,130 m²) for the out-patient clinic, and second, rehabilitation of the existing building to provide the necessary services for maternity, surgery, etc.

2. Site Inspection:

The Dr. Moscoso Puello Hospital is located in the northern part of the city of Santo Domingo. The soil conditions and drainage are excellent because of the limestone and coral in the area.

3. Present Facilities:

The hospital is a reinforced concrete structure of four floors with walls of concrete blocks. The present condition of the structure is excellent, and is well maintained.

Minor sanitary installation problems exist, which will be corrected during the rehabilitation. It will also be necessary to provide a new system of waste disposal, with appropriate septic tank and filtering well. Additional water will be supplied by increasing the capacity of the present cistern. An emergency power unit will also be provided.

4. Proposed New Facilities:

a) Rehabilitation:

It will be necessary to enlarge the hospital to provide the necessary space for the new services- emergency area, out-patient clinic, obstetrics and pediatric area, health center and new administration area. The out-patient facilities will be concentrated in the new building, and the existing building will be used for wards and surgery area.

b) Existing building:

The existing building has been altered to provide the necessary space

150 more beds as well as better surgery and X-ray suites. Also, a new ward for obstetrics has been provided, with the necessary delivery rooms. The kitchen and laundrh areas will be rehabilitated to give more adequate service to the hospital.

c) Annex:

The new building annex will have one floor, thus eliminating the vertical circulation problem. It will include the following:

- | | |
|-------------------------------|-----------------------|
| a) Admittance and Information | f) Multi-purpose room |
| b) Emergency | g) Health Center |
| c) Put-patient Clinic | h) Cafeteria |
| d) Administration | i) Pharmacy |
| e) Blood Bank | |

With the annex the hospital will be enlarged by 3,267.00 m2 making a total of 8,964.22 m2.

5. Component Costs:

a. Annex of Out-patient Clinic:

| | |
|---------------------------------|---------------|
| (1) Site preparation | \$ 8,500.00 |
| (2) Reinforced concrete | 95,000.00 |
| (3) Blocks walls and partitions | 20,000.00 |
| (4) Masonry | 60,000.00 |
| (5) Doors and windows | 25,000.00 |
| (6) Roofing | 16,000.00 |
| (7) Paint | 15,000.00 |
| (8) Sanitary Installation | 12,000.00 |
| (9) Electric Installation | 20,000.00 |
| (10) Final works | 11,000.00 |
| (11) Inspection | 11,300.00 |
| | <hr/> |
| | \$ 293,800.00 |

Total area: 3,130, or \$90.25 per square meter.

b. Remodeling of Existing Building:

| | |
|--|-------------|
| (1) Block wall (demolition and construction) | \$ 5,500.00 |
| (2) Masonry | 23,300.00 |
| (3) Paint | 10,000.00 |
| (4) Doors and windows | 12,500.00 |
| (5) Reinforce concrete | 12,200.00 |

| | | | |
|------|---|----|------------|
| (6) | Sanitary Installation | \$ | 10,000.00 |
| (7) | Electric Installation | | 8,000.00 |
| (8) | Remodeling of kitchen | | 2,000.00 |
| (9) | Ceiling and vinyl floor for surgery suite | | 3,900.00 |
| (10) | Final works | | 10,000.00 |
| (11) | Mechanical equipment | | 39,000.00 |
| (12) | Access streets | | 10,000.00 |
| (13) | Cistern and pump | | 5,000.00 |
| (14) | Inspection | | 6,056.00 |
| | | | <hr/> |
| | | \$ | 157,456.00 |

PROJECT: Rehabilitation of Dr. Luis E. Aybar Hospital in Santo Domingo to be converted into a general hospital

1. Scope of Work: Rehabilitation of existing building to provide additional space for a total of 300 beds and their related facilities and construction of new facilities for adequate maternal and infant care, out-patient clinic, etc., to serve approximately 150,000 people.

2. Site: Northeast part of Santo Domingo. Sufficient space on grounds for proposed additions. Area is level with the exception of a small rise in the area for the annex for maternal and infant care.

3. Present Facilities: Hospital building old but condition is acceptable due to the excellent administration and maintenance.

Main problems observed in sanitary system and size of kitchen.

4. Proposed Rehabilitation of Existing Building: The existing building will be altered to provide more space for beds, enlarge the kitchen and the area for food storage, provide dining facilities for doctors and nurses, enlarge the pantry in the second floor, provide glass partitions in the wards, change the location of the actual surgery suite to the north part of the building, thus providing rooms for surgery, recovery, sterilization and lockers, and remodel the actual X-Ray area in accordance with the specifications required for this type facility.

Proposed New Facilities: The new constructions will provide space for the out-patient clinic, maternal and infant care, family planning, blood bank, emergency, training, administration, storage, pharmacy, statistics, obstetrics and pediatrics.

5. Cost Estimates for the Integration of Dr. Luis E. Aybar Hospital

a. Remodeling of Existing Building

| | |
|---------------------------|--------------|
| (1) Site preparation | \$2,330 |
| (2) Block walls | 3,725 |
| (3) Reinforced concrete | 4,110 |
| (4) Masonry | 12,750 |
| (5) Doors and windows | 7,450 |
| (6) Paint | 4,250 |
| (7) Electrical system | 5,000 |
| (8) Sanitary installation | 9,111 |
| (9) Final clean up | <u>2,000</u> |

\$50,726

b. Pediatric, Obstetrics and Out-patient Clinic: Buildings

| | |
|--|---------------|
| (1) Site preparation | \$25,300 |
| (2) Block walls | 35,400 |
| (3) Reinforced concrete | 102,000 |
| (4) Masonry | 58,500 |
| (5) Roof finishing | 13,000 |
| (6) Doors and windows | 40,000 |
| (7) Paint | 15,000 |
| (8) Electrical system (emergency power) | 14,000 |
| (9) Sanitary installation | 19,000 |
| (10) Final clean-up | 4,000 |
| (11) Mechanical equipment (elevator, airconditioning, etc.) | <u>43,000</u> |

Total \$369,200

Total of square meter of new annexes 4,000

Cost per square meter 90.20

Total of a. + b. = \$419,926 + 4% inspection costs = \$436,723

PROJECT: Remodeling and Annex for Integration of the Health Services of Padre Billini Hospital in Santo Domingo

1. Scope of Work

Rehabilitation of the existing building and construction of new structures that will provide adequate facilities for maternal and infant care, as well as an out-patient MIC clinic. In addition, the rehabilitation of the existing hospital building will provide additional space for a total of 280 beds and related facilities, to serve a minimum population of approximately 150,000.

2. Site Inspection

The Padre Billini Hospital is located in the old downtown area of Santo Domingo. Two nearby houses that belong to the government will be demolished to allow for construction of the annex.

3. Present Condition

The building used for the hospital is an old structure, built in 1920.

The main deficiencies observed in the hospital were an inadequate sanitary system, kitchen, laundry, surgery area, and out-patient clinic.

The sanitary facilities in all the wards are in very bad condition; almost all the fixtures are destroyed or missing and water is available only on the lower floor.

The kitchen lacks the minimum facilities required for a hospital of this size, and the preparation of food is done under poor hygienic conditions, without sufficient ventilation, lighting or refrigeration.

All the laundry is done by hand, under unsanitary conditions.

The surgery area lacks the minimum requirements for sterilization.

4. Present Facilities

The hospital has 147 beds and offers the services of an out-patient clinic, nursing and surgery areas. Out-patient clinic services are provided in a very crowded area, lacking proper space for waiting and examining rooms.

5. Proposed New Facilities

Although the old building is structurally sound, its flow plan and electrical and mechanical systems are antiquated. It is intended to relocate all the specialized services and facilities into the new annex, and have the existing building remain as a 280 bed infirmary.

The annex will be used for:

Basement

- a. Kitchen
- b. Laundry
- c. Emergency
- d. Morgue

First Floor

- a. Blood Bank
- b. Out-patient clinic
- c. Administration
- d. Pharmacy
- e. Laboratories

Second Floor

- a. Multi-purpose room
- b. Nurses' dormitories
- c. Director's office
- d. Staff dining room

Third Floor

- a. Surgery suite

The annex will have a total area of 2,763.40 m².

In the remodeling of the existing building a new sanitary system will be provided and all the obsolete windows and doors will be changed.

The hospital, with the new addition, will be able to offer services to a population of 150,000 inhabitants.

6. Cost Estimates

a. Remodeling of Existing Building

| | |
|--|--------------|
| (1) Removal, conditioning and installation of doors and windows | \$32,000 |
| (2) Installations of sanitary system (including repairing of floors) | 15,000 |
| (3) Suspended ceiling (first floor only) | 8,000 |
| (4) Changes in electrical system | 3,100 |
| (5) Masonry and other works | 5,000 |
| (6) Painting | 10,000 |
| (7) Inspection | <u>2,925</u> |

TOTAL COST

\$76,025

Cost per square meter - \$15.85

b. Annex

| | |
|---|-----------|
| (1) Demolition and transportation of materials | \$ 4,000 |
| (2) Excavation and R/C footings | 6,900 |
| (3) Structural concrete | 80,000 |
| (4) Concrete blocks | 14,000 |
| (5) Floor tiles | 15,000 |
| (6) Doors and windows | 16,000 |
| (7) Waterproofing | 6,000 |
| (8) Plaster | 10,000 |
| (9) Stairs, finishing | 2,400 |
| (10) Suspended ceiling | 6,072 |
| (11) Electric installation (including A/C for Operating Rooms and Autopsy area only) | 23,200 |
| (12) Sanitary Installations | 15,600 |
| (13) Painting | 6,900 |
| (14) Elevator | 15,000 |
| (15) Inspection | 8,843 |
| TOTAL COST | \$229,915 |

Cost per square meter - \$ 80.00

Total Estimated Cost of Remodeling and Annex \$305,940

PROJECT: Remodeling and Annex for Integration of the Health Services of Padre Billini Hospital in Santo Domingo

1. Scope of Work

Rehabilitation of the existing building and construction of new structures that will provide adequate facilities for maternal and infant care, as well as an out-patient MIC clinic. In addition, the rehabilitation of the existing hospital building will provide additional space for a total of 280 beds and related facilities, to serve a minimum population of approximately 150,000.

2. Site Inspection

The Padre Billini Hospital is located in the old downtown area of Santo Domingo. Two nearby houses that belong to the government will be demolished to allow for construction of the annex.

3. Present Condition

The building used for the hospital is an old structure, built in 1920.

The main deficiencies observed in the hospital were an inadequate sanitary system, kitchen, laundry, surgery area, and out-patient clinic.

The sanitary facilities in all the wards are in very bad condition; almost all the fixtures are destroyed or missing and water is available only on the lower floor.

The kitchen lacks the minimum facilities required for a hospital of this size, and the preparation of food is done under poor hygienic conditions, without sufficient ventilation, lighting or refrigeration.

All the laundry is done by hand, under unsanitary conditions.

The surgery area lacks the minimum requirements for sterilization.

4. Present Facilities

The hospital has 147 beds and offers the services of an out-patient clinic; nursing and surgery areas. Out-patient clinic services are provided in a very crowded area, lacking proper space for waiting and examining rooms.

PROJECT: Annex for Obstetrics and Pediatrics to Juan Pablo Pina
Hospital in San Cristobal, Dominican Republic

1. Scope of Work: Construction of adequate facilities for maternal and infant care and provision of space for a total of 394 beds and repair of the kitchen and laundry equipment and the floors of the out-patient clinic area, to serve a population of 46,000.
2. Site: The only site available for the annex has some foundation problems. There are numerous sewage pipes located in that area and it will be necessary to relocate lines and also make a large backfill in some areas of the new building.
3. Existing Building: The building is in good condition due to the excellent maintenance. The only problems observed in the hospital were the kitchen and some sunken areas of the out-patient clinic floor.
4. Proposed New Additions: The annex will be a two-floor building with an area of 1,063.42m² to be used as follows:
 - a. Ground floor - Pediatrics
 - (1) Wards with 31 beds for boys
 - (2) Wards with 24 beds for girls
 - (3) Formula room
 - (4) Isolation room
 - b. Upper floor - Obstetrics
 - (1) Wards with 36 beds for women
 - (2) Two delivery rooms
 - (3) Labor rooms
 - (4) Scrub-up rooms
 - (5) Nursing
 - (6) Sterilization

5. Cost Estimates for the Annex:

| | |
|--------------------------|--------------|
| a. Site preparation | \$35,000 |
| b. Reinforced concrete | 30,000 |
| c. Masonry | 35,000 |
| d. Doors and windows | 6,000 |
| e. Paint | 2,000 |
| f. Roofing | 4,000 |
| g. Sanitary installation | 10,000 |
| h. Electric " | 6,000 |
| i. Mechanical " | <u>4,000</u> |
| | \$132,000 |

Cost Estimates for Work to be Performed
in the Existing Building:

| | |
|---|--------------|
| a. Kitchen | 10,000 |
| b. Repair of floor in out-patient clinic | <u>6,000</u> |
| | \$16,000 |

TOTAL COST \$148,000 + 4% inspection cost = \$153,920

TOTAL AREA OF NEW ANNEX 1,064 m2

COST PER SQUARE METER \$124.06

PROJECT: Remodeling of the Jose Maria Cabral Hospital in Santiago

1. Scope of Work:

The Jose Maria Cabral Hospital is located in the city of Santiago, the second most important city of the Dominican Republic, and serves an area of 370,000 inhabitants. Rehabilitation of the existing building, and construction of a new structure that will provide adequate facilities for maternal and infant care, with a total of 100 beds, doctor's residence and laundry, plus modernization of an out-patient clinic, nursing, administrative, surgery, and laboratory facilities. The construction is divided into two parts: The first will be the construction of a three-story annex, doctor's residence, and laundry; and the second will be the repair and remodeling of the existing building, which has deteriorated badly.

2. Site Inspection:

The property is generally level, except in the north-west zone. Here it descends progressively until reaching a level of approximately 2.50 m below the ground-floor level of the building. The building occupies about 25% of the total land. However, the unplanned development of the facilities precludes their ready expansion.

3. Present Facilities:

The actual distribution of the different units within the hospital is chaotic, and is characterized by a lack of centralization. The food distribution is difficult and complicated. Patients to be transported between floors are carried bodily, due to the lack of an elevator. Sanitary services are inadequate or broken, and patients, hospital personnel and the general public all make use of the same washrooms. Ventilation is generally poor, and the space per bed is extremely limited.

4. Objectives for the Rehabilitation

a. To diminish the number of beds of the present building and devote the space thus obtained to the services required.

b. To centralize the out-patient department.

c. To relocate the different medical units and services taking into account the inter-relation of functions, the interior circulation and easy access from outside. This requires serious structural changes.

- d. To reorganize and improve the surgical unit.
- e. To reorganize the ward areas for a better distribution of beds and sanitary services.
- f. To construct a maternity annex
- g. To construct a residence for resident physicians

5. Component Costs

a. Remodeling of existing building:

| | |
|---------------------------------|----------|
| (1) Site preparation | \$ 5,200 |
| (2) Floors | 10,800 |
| (3) Sanitary system | 20,000 |
| (4) Electric system | 14,000 |
| (5) Kitchen repair | 4,500 |
| (6) Reinforced concrete | 23,500 |
| (7) Doors and windows | 16,000 |
| (8) Masonry | 20,800 |
| (9) Paint | 28,000 |
| (10) Roofing | 12,200 |
| (11) Mechanical Installation | 25,000 |
| (12) Inspection and supervision | 7,200 |

187,200

Cost per square meter: ^28.00

b. Construction of a New Annex:

| | |
|--|----------|
| (1) Covered passageways | \$ 9,000 |
| (2) Laundry | 8,000 |
| (3) Water supply with cistern of 50,000 gallons | 10,000 |
| (4) Access streets | 9,000 |
| (5) Doctor's residence | 24,000 |
| (6) Inspection | 2,400 |

\$ 62,400

Cost per square meter : \$ 80.00

c. Obstetrics and Pediatrics Annex:

| | |
|---------------------------|---------------|
| (1) Site preparation | \$ 8,000 |
| (2) Reinforced concrete | 60,000 |
| (3) Block Walls | 50,000 |
| (4) Masonry | 45,000 |
| (5) Floors | 18,000 |
| (6) Doors and windows | 30,000 |
| (7) Sanitary installation | 35,000 |
| (8) Electric installation | 18,000 |
| (9) Paint | 14,000 |
| (10) Final works | 12,000 |
| (11) Inspection | <u>11,600</u> |

General Total Cost: \$301,600

Cost per square meter: \$ 91.00

PROJECT: Remodeling and Annex for the "Padre Fantino" Hospital
in Monte Cristi, Dominican Republic

1. Scope of Work: Rehabilitation of the existing building and construction of a new wing to provide adequate facilities for maternal and infant care, an enlarged and isolated area for contagious disease control, additional space for a total of 100 beds, and their minimum surgical and related facilities. This facility will serve approximately 80,000 inhabitants.

2. Site: The site is relatively flat, is bordered by streets, and presents no above-surface problem. The soil condition appears to be good. The present drainage system is totally ineffective because of serious drainage problems caused by the high water table in the whole area. Problems related to waste water disposal are very frequent.

3. Existing Building: The present hospital is a two story building, and has a capacity of 50 beds. The structure is in fair condition despite the general poor maintenance.

Leakages through the floor slab indicate very poor condition of the plumbing installations. There is a lack of lavatories in the wards. A cistern and water pump are needed to solve the daily shortage of water. Many of the doors and windows have become inoperative.

4. Proposed Plan for the Hospital Rehabilitation

Old Building Rehabilitation:

a. New contagious Disease Wing to accommodate 6 patients, with a separate sanitary installation.

b. Remodeling of First Floor: Two lavatories; nurses' quarters; enlargement of the kitchen; and conversion of the old labor room into a surgical dressing room.

c. Remodeling of the Second Floor: Three lavatories and remodeling of a ward into a nurses' quarters.

Annex: To be located south of the existing hospital, and have direct access to the street. Services to be provided in the annex are: MIC and birth control, pediatrics, emergency, odontology, and administration.

Department of Pediatrics - 1. Waiting room. 2. Intravenous clinic.
3. Children's examination clinic. 4. Children's wards (24 beds).
5. Nurses' station. 6. Storage

Maternity and Birth Control Clinic: 1. Waiting room. 2. Examination room. 3. OBs: 1 doctors' dressing room, 2 sterilization rooms, and 3 operating rooms. 4. Recovery wards (maternity): 18 beds, toilets.
5. Infant ward of 10 cribs. 6. Nurse station.

Private rooms: Doctors' quarters of 2 beds: Toilets, closets;
Nurses' quarters of 3 beds: Toilets closet; Public toilets: One per floor.

5. Cost Estimates:

Annex:

| | |
|----------------------------|---------|
| a. Site preparation | \$5,330 |
| b. Reinforced concrete | 40,000 |
| c. Masonry | 24,000 |
| d. Windows and doors | 8,000 |
| e. Paint | 3,000 |
| f. Electrical installation | 7,000 |
| g. Sanitary installation | 5,000 |
| h. Roofing | 1,700 |
| i. Water supply | 1,300 |
| j. Access street | 4,000 |

\$99,330

Total area - 1 200 m² - Cost per m² = \$82.75

Remodeling of Existing Building

| | |
|--|----------|
| a. Door and windows | \$ 8,300 |
| b. Paint | 4,000 |
| c. Sanitary system | 5,000 |
| d. Water supply | 1,000 |
| e. Alterations for the kitchen, lockers, nurse rooms, toilets, etc | 6,700 |

\$25,100

Total cost - 99,330 + 25,100 = \$124,430 + 4% Inspection = \$129,407

PROJECT: Rehabilitation and Enlargement for the Ramón Matías Mella Hospital, Dajabón, Dominican Republic

1. Scope of Work:

Rehabilitation of the existing building and construction of new structures that will provide adequate facilities for maternal and infant care, and space for 20 additional beds to serve a population of 50,000.

2. Site Inspection:

The town of Dajabón, on the northern border with Haiti, 326 Kms. from Santo Domingo, access by plane or road. The terrain is flat, presenting no above ground complications. The soil seems adequate.

3. Present Facilities:

The present hospital is a reinforced concrete one story building with 30 bed capacity, including maternal and infant wards.

No structural defects were visible, except for the west wing. The floors have sunk completely in a few of the rooms of the west wing; the roof and beams present cracks due to displacement of the foundations. Shortages of water are reported to be relatively frequent. Water leakage problems are apparent in some areas of the building. The doors and windows of the hospital are in poor condition. Power outages are reported to be relatively frequent.

There is complete lack of appropriate equipment for the surgery room. Inadequate space results in deficient hospital services.

4. Proposed Plan for Rehabilitation:

The enlargement has been planned so as to adequately house the pediatrics and maternity departments. The pediatric department consists of two examination rooms with separate dressing rooms and lavatories for each sex, plus a children's ward to accommodate 8 beds per sex.

The maternity and birth control department will consist of two examination rooms with common dressing room and lavatory. A new labor room including dressing rooms and lavatories for the doctors is planned..

5. Component Costs:

a. Construction of a new Annex:

| | |
|---------------------------|-----------|
| (1) Site preparation | \$ 1,250 |
| (2) Reinforced Concrete | 10,000 |
| (3) Masonry | 5,750 |
| (4) Windows and doors | 2,500 |
| (5) Sanitary Installation | 1,850 |
| (6) Electric Installation | 3,000 |
| (7) Roofing | 500 |
| (8) Paint | 1,000 |
| | <hr/> |
| | \$ 25,850 |

Total area: 287 square meters

Cost per square meter: \$90.00

b. Remodeling of existing building:

| | |
|-------------------------------------|-----------|
| (1) Doors and windows | \$ 10,200 |
| (2) Paint | 4,000 |
| (3) Sanitary and water supply Inst. | 6,000 |
| (4) Reinforced concrete | 1,640 |
| (5) Electrical Installation | 3,000 |
| | <hr/> |
| | \$ 24,840 |

a. Total of annex: \$25,850

b. Total of remodel: 24,840

\$50,690 + 4% inspection cost= \$52,718

PROJECT: Annex to be built for the San Vicente de Paul Hospital in San Francisco de Macoris

1. Scope of Work: Construction of an addition to the San Vicente de Paul Hospital in San Francisco de Macoris to provide the necessary spaces for infant and maternity wards, a laundry, an isolation ward, and a delivery room. The construction of this annex will provide additional space for a total of 178 beds, and their minimum surgery and related facilities. The hospital will serve a population of approximately 200,000.

2. Site inspection: The hospital is situated in the town of San Francisco de Macoris, in a rich agricultural valley in the northeast part of the country.

In the areas planned for the new facilities the terrain does not present any obvious difficulty, but nevertheless a soil test is planned, and the cost estimates reflect the possibility that subsurface problems may be encountered. There is a possibility that in some zones expansive material exist and the existing buildings may have been affected by the defective sewer drainage.

3. Present Facilities: The hospital is a building of reinforced concrete with walls of concrete blocks, built in 1948, to accommodate 150 beds and a 20-crib nursery. The condition of the building is generally good because the hospital administration is excellent and good maintenance is provided. The main deficiencies were observed in the sanitary and waste disposal systems, improper locations of the delivery rooms, improper location of the laundry, and the isolation ward.

4. Objectives for Rehabilitation: The main problem in the sanitary system is a lack of water pressure, and therefore an appropriate pumping system with a cistern will be supplied. Also, the waste disposal will be redesigned. The location of the isolation area is a serious problem - adjacent to the kitchen and dining room. For this reason, the isolation area will be moved to the annex.

5. Proposed New Facilities: The proposed new facilities are attached to the existing building in three zones (A, B, C). The total number of beds in these new wards are 28.

Zone A:

Ground Floor: Pediatric consultation rooms, the public health office, public W.C., and outside waiting room.

Second Floor: Three delivery rooms and related facilities, lavatory, sterilization area, two maternity wards of 8 beds each, nurses' station and terrace.

Zone B:

Ground floor: Four consultation offices (ophthalmology, cardiology, venereal diseases and X-ray), staff and public toilets.

Second Floor: Pediatric section, consisting of a nurses' station, four children's wards with 6 beds each, for a total of 24 beds; one nursery (18 cribs), and 2 bathrooms.

Zone C:

Ground Floor: Laundry and storage.

Second Floor: Communicable disease isolation area where there are (4 wards of 3 beds each for a total of 12 beds), nurses station, staff dressing room, and sterilization room.

6. Cost Estimate for Remodeling San Vicente de Paul Hospital in San Francisco de Macoris:

A. Remodeling existing building

| | |
|---------------------|--------------|
| (1) Paint | \$ 4,000 |
| (2) Roofing | 6,000 |
| (3) Sanitary system | 12,000 |
| (4) Kitchen Repair | <u>8,000</u> |
| | 30,000 |

B. Annexes

| | |
|-------------------------|---------------|
| (1) Site preparation | 10,000 |
| (2) Reinforced concrete | 30,000 |
| (3) Masonry | 36,000 |
| (4) Doors and windows | 10,000 |
| (5) Roofing | 10,000 |
| (6) Paint | 4,000 |
| (7) Electric system | 8,000 |
| (8) Sanitary " | 12,000 |
| (9) Block walls | 10,000 |
| (10) Final works | <u>10,000</u> |
| | \$142,000 |

TOTAL SQUARE METERS: 1775
COST PER SQ.MT. : \$80.00
TOTAL COST : \$142,000 + 30,000 = \$172,000
+ 4% inspection fees = \$178,880

PROJECT: Rehabilitation of Maria Trinidad Sanchez Hospital, Nagua

1. Scope of Work: The Maria Trinidad Sanchez Hospital is located on the outskirts of the town of Nagua, population of 20,000, on the northeast Atlantic coast of the Dominican Republic. It is proposed to construct adequate facilities for maternal and infant care; and modernize and provide minimum space for a small (78 beds) hospital, complete with out-patient clinic, surgery and laboratory facilities, to serve a population of 46,000 in the immediate area. The construction will be divided into two parts: the first will be the construction of the new areas, and the second will be the alteration and repair of the existing plant.
2. Site Inspection: The facility is situated on level, unobstructed terrain facing to the southeast. The ground elevation is 3 meters above sea level. Although the soil is hard sandy-silt, the water table is less than a meter from the surface.
3. Existing Building: The hospital is a reinforced concrete structure, having concrete block non-structural walls and cement floor tiles. The condition of the structure, walls and floor is fair, despite very poor maintenance. Especially deplorable is the sanitary system, with most of the fixtures in the wards being out of order, the effluent from the septic tank overflowing into the yards of adjoining homes, and the water supply line leading into the building from a ditch filled with sewage effluent.

The electrical system is inadequate and in very poor condition. The "operating room" is completely inadequate, having no water, no air-conditioning, a single bare bulb from a drop cord for lighting, and sub-minimum equipment. The hospital lacks a laundry, surgery suite, and emergency facilities; and has an inadequate examination room, pharmacy, kitchen, and delivery room.

4. Proposed Rehabilitation of the Hospital: The present size of the hospital is 624 m², and will be increased to 2,178 m². The existing building will be altered to accommodate an out-patient MIC clinic, administrative and staff areas, kitchen and dining room, and a pharmacy.
5. Proposed New Facilities:
A two-story annex to accommodate the following:
 - a. Surgery suite
 - b. Delivery room
 - c. Surgery ward (14 beds)
 - d. Emergency room
 - e. Laboratory
 - f. Obstetric ward (14 beds)
 - g. X-ray room
 - h. Infirmary/ward area (50 beds)

6. Cost Estimates:

A. Annex

| | |
|---------------------------------|--------------|
| (1) Site preparation | \$ 9,500 |
| (2) Reinforced concrete | 25,000 |
| (3) Masonry | 30,200 |
| (4) Doors and windows | 8,700 |
| (5) Paint | 2,400 |
| (6) Electric installation | 8,500 |
| (7) Mechanical installation | 4,000 |
| (8) Sanitary installation | 10,000 |
| (9) Roofing | 2,300 |
| (10) Waste system | 2,500 |
| (11) Laundry | 7,600 |
| (12) Walkways and cyclone fence | 4,800 |
| (13) Inspection | <u>4,620</u> |
| | \$119,120 |

Total area: 1,554.54 m²

Cost per sq. meter: \$74.30

B. Remodeling of Existing Building:

| | |
|---------------------------|--------------|
| (1) Paint | 800 |
| (2) Doors and windows | 3,000 |
| (3) Walls | 2,000 |
| (4) Electric System | 2,000 |
| (5) Sanitary system | 4,000 |
| (6) Roofing | 1,500 |
| (7) Remodeling of kitchen | <u>3,200</u> |
| (8) Inspection | 660 |
| | \$17,160 |

TOTAL COST OF THE PROJECT: \$137,280

**PROJECT: Construction of a hospital with 36 beds in Cotui,
Dominican Republic**

1. Scope of Work: Construction of a new concrete structure for maternal and infant care (36 bed capacity) as well as other basic services such as an out-patient clinic and surgery, to serve a population of about 60,000.
2. Site: Located on the west side of the road entering Cotui from Santo Domingo, about 70 miles to the south. The site contains a clay soil that will require soil tests. No other problems are expected as the site is fairly level and contains no obstructions.
3. General Description of the Project: This new maternity hospital for Cotui is designed primarily for maternity hospitalization and secondarily for general medicine. There will be 36 beds distributed in the following manner: three 8-bed maternity wards, one 3-bed adult (male) ward, one 3-bed adult (female) ward, one 3-bed children (boys) ward, and one 3-bed children (girls) ward.

Three principal areas were planned according to their functions: an Out-patient Clinic, an Infirmary and Internal Services. The out-patient clinic includes two maternity consultation offices with one mutual dressing room between. There is also an examination room. The area for milk dispense is separate.

The infirmary is divided into two areas, the first including the maternity wards, pre-delivery and delivery. The other area includes the general medicine wards with their surgical room.

At the rear of the lot are located the laundry, kitchen, staff dining room and staff dormitory.

4. Cost Estimate of the Project Maternity Hospital Yamasa

| | |
|---|--------------|
| a. Reinforced concrete | \$ 23,400 |
| b. Masonry, stucco, etc. | 55,100 |
| c. Floor, filling, cuts, leveling, etc. | 17,500 |
| d. Electrical | 4,600 |
| e. Plumbing, fixtures, etc. | 5,900 |
| f. Millwork, windows, etc. | 11,700 |
| g. Paint, varnish, etc. | <u>3,600</u> |

General Total \$ 117,070

+ 4% inspection cost \$ 121,753

Total Area: 1,250 m²

Approximate Cost \$ 93.00/m²

PROJECT: Remodeling and Enlargement of the Dr. Jaime Mota Hospital in Barahona

1. Scope of Work: Rehabilitation of the existing building and construction of new structures that will provide adequate facilities for maternal and infant care, and an out-patient clinic. In addition, the rehabilitation of the existing hospital building will provide additional space for a total of 120 beds, and their minimum surgery and related facilities, to serve a minimum population of approximately 107,000. This will be accomplished by providing additions to the various wings of the existing structure instead of expanding by means of a separate annex.
2. Site: The site is relatively flat, and the soil is considered adequate for the foundation of the new structure. The type of soil of the area does not require any special storm water drainage system.
3. Existing Building: The present hospital is a one-story reinforced concrete structure, with a capacity of 60 beds. The structure itself is in fair condition. The facilities are generally inadequate - 27 beds for general medical care and none for isolation. Utilities are either obsolete (electricity) or too small (cistern).
4. Proposed Plan for Enlargement of the Hospital:

The present size of the hospital is approximately 1100 square meters, and will be enlarged to 2,150 m².

The building shall have the usual facilities for a general hospital with a capacity of 120 beds. It is preferable to use the existing building solely for nursing wards, because of the problems involved in providing service facilities, with their mechanical and electrical requirements, into the old building. The redesigned plan will assure improved efficiency as well as to offer better circulation for in and out-patient facilities.

5. Cost Estimates

Enlargement

| | |
|------------------------------------|------------------|
| a. Site preparation | \$ 8,000 |
| b. Reinforced concrete | 45,000 |
| c. Doors and windows | 11,000 |
| d. Masonry | 49,500 |
| e. Paint | 3,300 |
| f. Electric installation | 28,800 |
| g. Sanitary installation | 17,500 |
| h. Mechanical installation | 10,000 |
| i. Roofing | 8,000 |
| j. Access roads | 8,000 |
| k. Cistern | <u>4,000</u> |
| l. Inspection | 7,725 |
| Cost per sq. meter: \$89.81 | \$200,825 |

Remodeling of Existing Building:

| | |
|------------------------------------|--------------|
| a. Masonry | \$ 5,000 |
| b. Doors and windows | 6,000 |
| c. Paint | 3,500 |
| d. Electric installation and lamps | 10,000 |
| e. Sanitary installation | 7,000 |
| f. Roofing | 5,000 |
| g. Inspection | <u>1,460</u> |
| | 37,960 |
| Total cost of project: | \$238,784 |

PROJECT: Rehabilitation and Enlargement of the Dr. Simon Stridella
Hospital in Azua, Dominican Republic

1. Scope of Work: Expansion and remodeling of existing facility to provide additional floor space, adequate maternal and infant care, and a total of 100 beds serving 80,000 inhabitants.

2. Site: The town of Azua, southern portion of the Dominican Republic, 121 km from Santo Domingo. Access by road.

The site occupies an average sized city block surrounded by streets on three sides and a fence on the north. The site slopes on an east to west direction. Future ground floor will be placed on fill material in order to maintain the same floor level as the existing hospital. Soil bearing tests in this general area yield the approximate value of 2-4 kilo/cm². A few test borings will provide sufficient soil bearing data for this type of construction. Drainage around existing facilities is good. No unfavorable or unusual sub-surface soil conditions are detectable by visual examination.

3. Existing Building: One story, approximately 1,075 square meters, reinforced concrete walls, 50 bed capacity, fair condition. Lack of water due to insufficient water pressure from aqueduct. Power outages are reported to be relatively frequent. Water closet conditions are very poor. Doors and windows are also in poor condition. Electrical and telephone utility lines are easily accessible.

4. Present Facilities

At the present time, lack of space is resulting in the hospital providing inadequate maternal-infant care and surgical services. Laboratory space is also inadequate.

5. Proposed Plan for Remodeling the Hospital: The new enlargement, approximately 2,145 m², will provide additional areas for obstetric, pediatric and surgical facilities, as well as the cafeteria, kitchen and laundry facilities and an increase in the number of beds from 50 to 100.

6. Cost Estimates

Remodeling of Existing Building

| | |
|--------------------------|--------------|
| a. Masonry | \$ 5,000 |
| b. Doors and windows | 6,000 |
| c. Paint | 3,500 |
| d. Electric installation | 10,000 |
| e. Sanitary installation | 7,000 |
| f. Roofing | <u>5,000</u> |

Cost of work to be performed on \$36,500
rehabilitation of existing
hospital:

Enlargements

| | |
|--|--------------|
| a. Site preparation, excavation work, etc. | \$ 6,800 |
| b. Structural work | 47,000 |
| c. Plumbing (including cistern, hydropneumatic pressure system and hot water boiler) | 25,700 |
| d. Electrical (including stand-by power) | 29,940 |
| e. Stucco, ceramic tile and other finishing materials | 23,250 |
| f. Flooring (interior) | 13,115 |
| g. Doors, door bucks, hardware, etc. | 12,000 |
| h. Suspended ceilings | 9,000 |
| i. Waterproofing and insulation | 6,435 |
| j. Painting and related work | 3,500 |
| k. Exterior paving, landscaping, driveways, walkways, etc. | 9,000 |
| l. Miscellaneous | <u>7,500</u> |

COST OF WORK TO BE PERFORMED ON NEW CONSTRUCTION

SUR-TOTAL A 190,240

COST OF WORK TO BE PERFORMED ON REMODELING OF EXISTING HOSPITAL

SUB-TOTAL B 36,500

TOTAL AMOUNT FOR COMPLETE JOB 226,740

+ 4% inspection costs = 235,810

TOTAL AREA OF NEW CONSTRUCTION 2,145 m²

UNIT COST PER SQUARE METER RD\$ 88.68

PROJECT: Remodeling and Annex for the Santomé Hospital, San Juan de la Maguana.

1. Scope of Work:

Rehabilitation of the existing building and construction of new structures that will provide facilities for maternal and infant care, an out-patient clinic, space for a total of 220 beds, and their minimum surgery and related facilities. The facility will serve a population of approximately 170,000.

2. Site Inspection:

The town of San Juan de la Maguana is in the western part of the Dominican Republic. There are no abrupt differences in elevations or obstructions that would call for special earth movements. The water table is quite high and this seems to have seriously affected the filtration wells and septic tanks provided for the hospital.

3. Present Facilities:

The structure of present hospital is fair despite the poor maintenance. It has a present capacity of 160 beds. There is serious floor settlement in the whole first floor area of the hospital. The plumbing is in very deplorable condition with water leakage problems throughout the building. There are frequent water shorages. Doors and windows are in poor condition. Appropriate equipment for the kitchen and laundry is lacking. Services are deficient due to inadequate space for beds, examinations, emergencies, laboratories, blood bank and laundry areas.

4. Proposed Plan for Remodeling the Hospital:

Old Building: First floor plan: General services, Isolation Wards (increased), Administration, Orthopedics Wards (increased), Wards (additional), Pediatrics Wards and facilities (increased and additions)

Second floor plan: Surgery, Doctors quarters, Obstetrics, Wards, Private Rooms.

Third floor: Nuns' quarters.

The Annex: The annex will be a one-story building and will be used for: Children's clinics, Administration and Admissions, Out-patient clinics, Laboratories, Blood bank, Drug center, Emergency.

In addition, the hospital and annex will include new areas for the

following facilities: Isolation wards, Morgue, Laundry, Maintenance, and Water closets.

5. Component Costs:

a. Remodeling of Existing Building:

1. Third Floor (Nun's quarters):

| | |
|------------------------------------|-------------|
| (a) Construction of new passageway | \$ 1,000.00 |
| (b) Waterproofing | 1,400.00 |

2. Second Floor:

| | |
|-----------------------|-----------|
| (a) Roofing | 6,500.00 |
| (b) Doors and windows | 4,000.00 |
| (c) Sanitary system | 10,000.00 |

3. First Floor:

| | |
|-----------------------|-----------|
| (a) Floor repair | 7,000.00 |
| (b) Doors and windows | 7,000.00 |
| (c) Sanitary system | 20,000.00 |

4. Additions:

(a) Isolation Ward & Morgue: 400.00

(1) Demolition of walls 400.00
 (2) Sanitary system 2,600.00
 (3) Construction of new facilities for morgue and isolation ward 9,500.00

(b) Garages and Laundry:

(1) Construction of new facilities 10,000.00

(c) Miscellaneous General Requirements:

(1) Access streets, retaining walls 7,000.00
 (2) General Paint 10,000.00
 (3) Repair of electrical system (emergency power) 6,000.00

| | |
|---|----------------------|
| | 102,400.00 |
| 20% Fees, Bond, Transport and contingencies | 20,480.00 |
| | <u>\$ 112,880.00</u> |

b. Annex for Out-patient Clinic:

| | | |
|---|----|---------------|
| 1. Site preparation | \$ | 3,500.00 |
| 2. Reinforced concrete | | 25,000.00 |
| 3. Block walls | | 7,000.00 |
| 4. Masonry | | 12,000.00 |
| 5. Floors | | 12,000.00 |
| 6. Doors and windows | | 23,000.00 |
| 7. Electrical Installation | | 4,000.00 |
| 8. Sanitary Installation | | 8,000.00 |
| 9. Water supply, including cistern/pump req'd | | 2,000.00 |
| 10. Paint | | 3,500.00 |
| 11. Roofing | | 8,000.00 |
| 12. Final works | | 2,000.00 |
| | | <hr/> |
| | \$ | 110,000.00 |
| Total Construction Cost | \$ | 232,880.00 |
| + 4% inspection cost | = | \$ 242,195.00 |

PROJECT: Remodeling of Teofilo Hernandez Hospital in El Seybo

1. Scope of Work:

Rehabilitation of the existing building and construction of several additions to provide adequate facilities for maternal and infant care, an out-patient clinic, additional space for a total of 86 beds, and the minimum surgery and other related services which will serve approximately 130,000 persons.

2. Site Inspection:

El Seybo, located 126 Km. to the east of Santo Domingo. The hospital is located in the eastern part of the town, on a sloping site which has resulted in a deep backfill (up to 2 m) under portions of the building.

3. Present Facilities:

The present capacity of the hospital is sixty (60) beds, but only 36 beds are presently in use due to a lack of equipment and services. In spite of the hospital's poor maintenance, it is exceptionally clean.

There is considerable settlement of the floors and some foundations. In addition, the lower portion of many exterior and some interior walls show evidence of their containing considerable moisture, which may be caused by rain water penetration through the roof and the walls, or leaks in the water supply or sanitary lines. The roof leaks badly which is apparent from the damage to the paint, plaster and electrical ceiling fixtures. The sanitary system and water supply also have numerous leaks.

The waste disposal system is badly deteriorated. There is no laundry. The sanitary fixtures of the wards are inoperative and generally deteriorated. They are beyond normal repair.

4. Proposed New Facilities:

The remodeling of the building will result in space for 26 additional beds, new areas for an out-patient clinic with 3 more examination rooms, new sanitary facilities for the wards, relocation of the kitchen, and location of the isolation ward, laundry and morgue in the basement. The waste disposal system will be provided and a new water supply system will be installed. The surgery area will be provided the necessary facilities for its functioning, including a sterilizing unit. In the area of the delivery room, a labor room will be provided.

The leaks of the roof and the sunken floors will be repaired, and measu-

res to avoid the repetition of the same problem in the future will be taken. A cyclon fence will be erected to provide security and privacy.

5. Component Costs:

a. Remodeling of existing building:

| | |
|-----------------------------|-------------|
| (1) Masonry | \$ 2,500.00 |
| (2) Roofing | 3,500.00 |
| (3) Doors and windows | 8,000.00 |
| (4) Electrical Installation | 1,800.00 |
| (5) Sanitary Installation | 11,000.00 |
| (6) Paint | 2,000.00 |
| (7) Cyclon fence | 6,000.00 |

b. Construction of a new Annex:

| | |
|--|------------------|
| (1) Site preparation | 5,000.00 |
| (2) Reinforced concrete | 8,000.00 |
| (3) Masonry | 14,000.00 |
| (4) Block Walls | 7,000.00 |
| (5) Doors and windows | 5,000.00 |
| (6) Roofing | 7,000.00 |
| (7) Paint | 2,000.00 |
| (8) Sanitary Installation | 12,000.00 |
| (9) Electric Inst. (including emergency power) | 7,000.00 |
| (10) Final works | 3,000.00 |
| (11) Water supply (including reservoir) | 3,000.00 |
| (12) Access streets | 3,000.00 |
| | <u>76,000.00</u> |

Total cost: \$110,800
+ 4% inspection cost= 115,232.00

Total area: 710 square meters

Cost per square meter: \$107.04

PROJECT: Construction of 15 Sub-Health Centers in Different Towns of Dominican Republic

1. Scope of Work: Construction of 15 health centers in various towns of Dominican Republic to provide the basic services for maternity and infant care, family planning, etc.
2. Site: The sites for the construction of the health centers were selected on the basis of no special foundation problems and no demolition of existing structures.
3. Proposed Building: There will be facilities for maternity hospitalization and general medicine. Two maternity wards of 4 beds each. Each Health Sub-Center divided into three main sectors: External services (consultation room, emergency ward, milk dispensary); Infirmary (including a delivery room); and Internal Services (laundry, kitchen, staff dining room, and nurses' bedrooms).

4. Cost Estimate of the Project:

| | |
|--------------------------------|------------|
| a. Reinforced concrete | \$6,400 |
| b. Masonry, stucco, etc. | 9,000 |
| c. Floors, fitting, cuts, etc. | 4,800 |
| d. Electrical | 1,280 |
| e. Plumbing, fixtures, etc. | 2,200 |
| f. Millwork, windows, etc. | 3,200 |
| g. Paint, varnishes, etc. | <u>960</u> |

27,840

| | |
|---------------------------|--------------|
| h. Fees and Insurance 15% | <u>4,176</u> |
|---------------------------|--------------|

GENERAL COST \$32,016

+ 4% inspection costs - \$33,280

TOTAL AREA: 400m²

APPROXIMATE COST: \$80.00/m²

PROJECT: Construction of 89 Rural Clinics in Different Communities of Dominican Republic

1. Scope of Work: Construction of 89 rural clinics for providing the basic services of preventative medicine, maternal and infant care, family planning and emergency services.
2. Sites: Sites were selected on the basis of no special problems of foundation and earth movement.
3. Proposed Buildings: The design of the rural clinics is based on the criteria of simplicity, maximum economy and efficient service to the community. The outside waiting room communicates with an inner hall, through which there is access to the doctor's consultation office, infirmary, emergency ward, and public health office. The emergency ward with 2 beds is for awaiting the ambulance.

The milk dispensary has been located so that this social service will not interfere with the rest of the clinic. A door in the corridor isolates the nurses' bedrooms, toilet, kitchen and milk dispensary from the rest of the clinic. A partially covered carport serves the emergency entrance at the rear and a small porch provides protection to the milk dispensary window.

4. Cost Estimates

| | |
|--|--------------|
| a. Reinforced concrete | \$2,000 |
| b. Masonry, stucco, etc. | 2,600 |
| c. Floor, filling, cut, leveling, etc. | 1,500 |
| d. Electrical | 400 |
| e. Plumbing, fixtures | 900 |
| f. Millwork, windows, etc. | 1,000 |
| g. Paint, varnish, etc. | <u>300</u> |
| | 8,700 |
| h. Fees and Insurance 15% | <u>1,300</u> |

GENERAL TOTAL \$10,000

+ 4% inspection cost = \$10,400

TOTAL AREA: 125.00

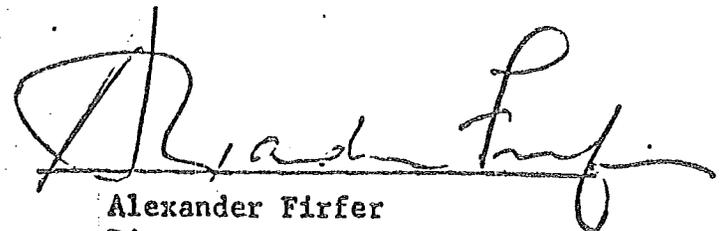
APPROXIMATE COST: \$80.00/m²

C E R T I F I C A T E

I hereby certify to the Administrator of the Agency for International Development that to the best of my knowledge and belief the Dominican Republic possesses both the financial and human resources effectively to maintain and utilize the project to be undertaken pursuant to the terms of the A.I.D. loan proposed in this paper between the Government of the Dominican Republic and the United States of America for improvement of the health facilities of the Dominican Republic with emphasis on family planning within the context of maternal-infant care clinics. In so certifying I have taken into account the maintenance and utilization of projects in the Dominican Republic previously financed or assisted by the United States, and I have more particularly taken into account the demonstrated capability of the Dominican Republic to effectively utilize development projects of this nature.

May 22, 1968

Date



Alexander Firfer
Director
A.I.D. Mission to the
Dominican Republic

June 13, 1968

A.I.D. 1240-2 (11-67)

CHECKLIST OF STATUTORY CRITERIA

(Alliance for Progress)

In the right-hand margin, summarize for each item the information or conclusion requested. As necessary, reference the section(s) of the Capital Assistance Paper, or other clearly identified and available document, in which the matter is further discussed. This form may be made a part of the Capital Assistance Paper.

The following abbreviations are used:

FAA - Foreign Assistance Act of 1961, as amended by the Foreign Assistance Act of 1967.

App.- Foreign Assistance and Related Agencies Appropriations Act, 1968.

COUNTRY PERFORMANCE

Progress Towards Country Goals

1. FAA §.208; §.251(b)(1); §.251(b)(5); §.251(b)(6). *Extent to which country is:*

a. *Making appropriate efforts to increase food production and improve means for food storage and distribution.*

b. *Creating a favorable climate for foreign and domestic private enterprise and investment.*

c. *Increasing the public's role in the developmental process.*

a. In recent years there has been significant growth in agricultural production in the Dominican Republic, particularly in food crops for Dominican consumption and exports such as winter vegetables.

b. The climate for foreign and domestic private enterprise and investment has been steadily improving over the past two years. Several major investments are now being considered or are ready for implementation.

c. The public's role in the development process is being encouraged through the programs of the A.I.D. and the GODR.

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d. *Allocating expenditures to development rather than to unnecessary military purposes or intervention in other free countries' affairs.*

e. *Willing to contribute funds to the project or program.*

f. *Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangement, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.*

g. *Adhering to the principles of the Act of Bogota and Charter of Punta del Este.*

h. *Responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.*

2. *FAA §. 251(b). Information and conclusion on country's efforts to repatriate capital invested in other countries by its own citizens.*

d. Dominican expenditures for military purposes have been held at a constant level during recent years and are not for purposes of intervention in affairs of other Free Countries.

e. The GODR has indicated its willingness to consider allocating the necessary funds for this purpose.

f. The tax yield obtained by the GODR is one of the better in Latin America and significant improvements are continually being made in collection processes. Freedom of expression and of the press, and recognition of other individual freedoms are values which the Dominican Government is promoting on a continuing and more significant scale.

g. The Dominican Republic is adhering to the principles of the Act and Charter.

h. The present Government is responsive to the vital economic, political, and social concerns of its people.

2. Account has been taken of the extent to which the Dominican Republic is making reasonable efforts to encourage repatriation of capital invested in other countries by its own citizens.

Relations With U. S. and Other Nations

3. FAA §.620(c). *If assistance to a government, existence of indebtedness to a U. S. citizen for goods or services furnished or ordered where such citizen has exhausted available legal remedies, debt is not denied or contested by such government or indebtedness arises under an unconditional government guaranty.*

3. The Dominican Republic is not known to be indebted to U.S. citizens in any such manner.
4. FAA §.620(d). *If assistance for any productive enterprise which will compete in the U. S. with U. S. enterprise, existence of agreement by the recipient country to prevent export to the U. S. of more than 20% of the enterprise's annual production during the life of the loan.*

4. Not applicable.
5. FAA §.620(e)(1). *If assistance to a government, extent to which it (including government agencies or subdivisions) has taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U. S. citizens or entities beneficially owned by them without taking steps to discharge its obligations.*

5. The Dominican Republic has not taken such actions.
6. FAA §.620(j). *Information whether the country permits, or fails to take adequate measures to prevent, the damage or destruction, by mob action, of U. S. property.*

6. Adequate measures have and are being taken by the Dominican Republic in this regard.

7. FAA §.620(l). *Consideration which has been given to denying assistance to a government which after December 31, 1966, has failed to institute the investment guaranty program for the specific risks of inconvertibility and expropriation or confiscation.*

7. The Dominican Republic has signed and instituted such an agreement.
8. FAA §.620(o). *If country has seized, or imposed any penalty or sanction against, any U. S. fishing vessel on account of its fishing activities in international waters, consideration which has been given to denying assistance.*

8. The Dominican Republic has not taken any such action.
9. FAA §.620(q). *Existence of default under any FAA loan to the country.*

9. At the time of preparation of this paper there is no default under any FAA loan to the Dominican Republic.
10. FAA §.620(t). *Prohibition on aid if country has severed diplomatic relations with U. S., unless agreements have been negotiated after resumption of relations.*

10. Not applicable.
11. FAA §.620(u). *Status of the country on delinquent U. N. obligations.*

11. To the best of our knowledge the Dominican Republic is not delinquent on any U.N. obligations.
12. FAA §.209. *Information about multilateral assistance being furnished to the country.*

12. Other international financial institutions are presently providing assistance to the Dominican Republic.

13. FAA §.620(a); App. § 107(a) and (b). 13. The Dominican Republic has not knowingly provided any such assistance.
- Compliance with prohibitions against assistance to Cuba and any country (a) which furnishes assistance to Cuba or failed to take appropriate steps to prevent ships or aircraft under its registry from carrying equipment, materials, or supplies from or to Cuba; or (b) which sells, furnishes, or permits any ships under its registry to carry items of primary strategic significance, or items of economic assistance, to Cuba.*
14. FAA §.620(b). If assistance to a government, existence of determination it is not controlled by the international Communist movement.
14. The Dominican Republic is not controlled by the international Communist movement; this has been determined by the Secretary of State.
15. FAA §.620(i). Information on representation of the country at any international conference when that representation includes the planning of activities involving insurrection or subversion against the U. S. or countries receiving U. S. assistance.
15. The Dominican Republic has not been represented in any international conference that included planning and activities involving insurrection or subversion against the United States or countries receiving U.S. assistance.
16. FAA §.620(n); App. 107(b) and 116. Compliance with prohibition against assistance to countries which traffic or permit trafficking with North Viet-Nam.
16. The Dominican Republic does not traffic or permit trafficking with North Viet-Nam.

Military Expenditures

17. FAA §.620(i). Existence of determination that the country is engaging in or preparing for aggressive military efforts.
17. No determination has been made that the Dominican Republic is engaging in or preparing for aggressive military efforts.

18. FAA §.620(s). *Information and conclusion whether country is devoting unnecessary percentage of budget for military purposes and using foreign exchange for military equipment.*

18. The Dominican Republic has held its military expenditures to a constant level. Reductions in these expenditures are expected in the future.

19. App. §.11. *Information on reduction in assistance by amounts spent by country for the purchase of sophisticated military equipment.*

19. The Dominican Republic has not purchased sophisticated military equipment.

CONDITIONS OF THE LOAN

General Soundness

20. FAA §.201(d). *Information and conclusion on legality (under laws of country and U. S.) and reasonableness of lending and relending terms of the loan.*

20. A.I.D. development loans at terms similar to this loan have been made in the Dominican Republic. The terms are both legal and reasonable.

21. FAA §.251(b)(2); §.251(e). *Information and conclusion on activity's economic and technical soundness, including information on availability of an application together with assurances to indicate that funds will be used in an economically and technically sound manner.*

21. The technical and economic soundness of the project are described fully in this loan paper. An application has been made by the GODR stressing the priority of this project.

22. FAA §.251(b). *Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.*

22. There are reasonable prospects of repayment of this loan.

23. FAA §.611(a)(1). Information and conclusion on availability of engineering, financial, and other plans necessary to carry out the assistance and of a reasonably firm estimate of the cost to the U. S. of the assistance.
23. There are sufficient plans necessary to carry out this project and a reasonably firm estimate of all costs.
24. FAA §.611(a)(2). If legislative action is required within recipient country, basis for reasonable anticipation such action will be completed in time to permit orderly accomplishment of purposes of loan.
24. Other than legislative ratification of the Loan Agreement no legislative action is required by this loan project.
25. FAA §.611(e). Compliance with requirement that Mission Director certify, with respect to projects estimated to cost over \$1 million, as to the country's capability effectively to maintain and utilize the project.
25. The certification prescribed by this section is attached to this paper as an Annex.
26. FAA §.251(b). Information and conclusion on availability of financing from other free-world sources, including private sources within the United States.
26. Financing from other Free World sources, including other U.S. sources, is not available for this project.

Loan's Relationship to Achievement of Country and Regional Goals

27. FAA §.207; §.251(a). Extent to which assistance reflects appropriate emphasis on:
- 27.
- a. A.I.D. assistance to the Dominican Republic is encouraging the development of democratic economic, political, and social institutions.

b. *Self-help in meeting the country's food needs.*

b. Measures taken to meet the Country's food needs are achieving increasing success.

c. *Improving availability of trained manpower in the country.*

c. Efforts are continually being made by the GODR and the A.I.D. to improve the trained manpower in the country.

d. *Programs designed to meet the country's health needs.*

d. A.I.D. and the GODR have many programs designed to meet the country's health needs.

e. *Other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and voluntary agencies; transportation and communication; planning and public administration; urban development; and modernization of existing laws.*

e. Much of A.I.D.'s assistance to the GODR is designed to meet the needs of the sectors referred to in this section.

28. *FAA §.251(b)(3). Information and conclusion on activity's relationship to and consistency with other development activities, and its contribution to realizable long-range objectives.*

28. This loan is consistent with other development activities and contributes to long-range objectives.

29. *FAA §.251(b)(7). Information and conclusion on whether or not the activity to be financed will contribute to the achievement of self-sustaining growth.*

29. This project is an essential ingredient for the achievement of self-sustaining growth in the Dominican Republic

30. FAA §.281(a). *Extent to which the loan will contribute to the objective of assuring maximum participation in the task of economic development on the part of the people of the country, through the encouragement of democratic private and local governmental institutions.*
30. Through the improvement of the human resources of the Dominican Republic this loan will contribute to the objective of assuring maximum participation of commodity and local governmental institutions.
31. FAA §.281(b). *Extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in governmental skills.*
31. The answer given to the item above is equally applicable to this item.
32. FAA §.601(a). *Information and conclusions whether loan will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions.*
32. This loan should foster private initiative and competition, encourage the development of local organizations, and improve technical efficiency of industry, agriculture, and commerce.
33. FAA §.619. *Compliance with requirement that assistance to newly independent countries be furnished through multilateral organizations or plans to maximum extent appropriate.*
33. Not applicable.

34. FAA §.251(h). Information and conclusion on whether the activity is consistent with the findings and recommendations of the Inter-American Committee for the Alliance for Progress in its review of national development activities.
34. This activity is consistent with the findings and recommendations of CIAP.
35. FAA §.251(g). Information and conclusion on use of loan to assist in promoting the cooperative movement in Latin America.
35. Not applicable
36. FAA §.209; §.251(b)(8). Information and conclusion whether assistance will encourage regional development programs, and contribute to the economic and political integration of Latin America.
36. This program will not directly affect the integration of Latin America.
- Loan's Effect on U. S. and A.I.D. Program
37. FAA §.251(b)(4); §.102. Information and conclusion on possible effects on U. S. economy, with special reference to areas of substantial labor surplus, and extent to which U. S. commodities and assistance are furnished in a manner consistent with improving the U. S. balance of payments position.
37. A portion of these loan funds will be used for U.S. goods and services. Over the long term this project will have a beneficial effect on the U.S. economy.
38. FAA §.601(b). Information and conclusion on how the loan will encourage U. S. private trade and investment abroad and how it will encourage private U. S. participation in foreign assistance programs (including use of private trade channels and the services of U. S. private enterprise).
38. Not applicable.

39. FAA §.601(d). *If a capital project, compliance with the Congressional policy that engineering and professional services of U. S. firms and their affiliates are to be used in connection with capital projects to the maximum extent consistent with the national interest.*
39. This requirement will be complied with.
40. FAA §.602. *Information and conclusion whether loan will permit U. S. small business to participate equitably in the furnishing of goods and services financed by it.*
40. Insofar as possible and applicable this requirement will be met and U.S. small business will be permitted to participate in the project.
41. FAA §.620(h). *Compliance with regulations and procedures adopted to ensure against use of assistance in a manner which, contrary to the best interests of the U. S., promotes or assists the foreign aid projects or activities of the Communist-Bloc countries.*
41. This project will not promote or assist foreign aid projects or activities of the Communist-Bloc countries.
42. FAA §.621. *Information and conclusion on how the loan in providing technical assistance will utilize to the fullest extent practicable goods and professional and other services from private enterprise on a contract basis. If the facilities of other Federal agencies will be utilized, information and conclusion on whether they are particularly suitable, are not competitive with private enterprise, and can be made available without undue interference with domestic programs.*
42. This loan will make direct use of the technical services available from professional firms and enterprises of the U.S. private sector on a contract basis.

43. FAA §.252(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources.

43. None of the loan funds will go directly to private enterprise; however, this program, as administered by the GODR, will have a direct beneficial effect on the private sector.

Loan's Compliance with Specific Requirements

44. FAA §.608(a). Information on measures to be taken to utilize U. S. Government excess personal property in lieu of the procurement of new items.

44. The customary excess property utilization provisions will be implemented.

45. FAA §.604(a); App. §.108. Compliance with restriction of commodity procurement to U. S. except as otherwise determined by the President and subject to statutory reporting requirements.

45. Procurement under this loan will be limited to the United States and the Dominican Republic.

46. FAA §.604(b). Compliance with bulk commodity procurement restriction to prices no higher than the market price prevailing in the U. S. at time of purchase.

46. Procurement under the loan will be by competitive bid.

47. FAA §.604(d). Compliance with requirement that marine insurance be placed in the U. S. on commodities financed by the loan if the host country discriminates against U. S. companies.

47. In the event that the Dominican Republic discriminates against any U.S. marine insurance company commodities purchased with loan funds will be insured against risk with a U.S. company as required by this section.

13

48. FAA §.604(e). Compliance with requirement that funds not be used for procurement of any agricultural commodity or product thereof outside the U. S. when the domestic price of such commodity is less than parity.
48. Not applicable.
49. FAA §.611(b); App. §.101. If water or water-related land resource construction project or program, information and conclusion on benefit-cost computation.
49. Not applicable.
50. FAA §.611(c). Compliance with requirement that contracts for construction be let on competitive basis to maximum extent practicable.
50. Contracts for construction will be let on a competitive basis to the maximum extent practicable.
51. FAA §.620(f); App. §.109. Compliance with prohibitions against assistance to any Communist country.
51. This loan will not assist any Communist country.
52. FAA §.620(g). Compliance with prohibition against use of assistance to compensate owners for expropriated or nationalized property.
52. This loan will not be used to compensate owners for expropriated or nationalized property.

53. FAA §.612(b); §.636(h). Steps that have been taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and that foreign currencies owned by the U. S. are utilized to meet the cost of contractual and other services.
53. Account has been taken of the availability of any local currencies that might be used in this project. Such currencies have been planned for projects which supplement this particular loan proposal.
54. App. §.102. Compliance with requirement that payments in excess of \$25,000 for architectural and engineering services on any one project be reported to the Congress.
54. This requirement will be complied with.
55. App. §.104. Compliance with bar against funds to pay pensions, etc., for military personnel.
55. No loan funds will be used to pay pensions, etc. for military personnel.
56. App. §.106. If country attempts to create distinctions because of their race or religion among Americans in granting personal or commercial access or other rights otherwise available to U. S. citizens generally, application which will be made in negotiations of contrary principles as expressed by the Congress.
56. No distinctions on the basis of race and religion will be considered.
57. App. §.111. Compliance with requirements for security clearance of personnel.
57. All such personnel will be cleared as necessary.
58. App. §.112. Compliance with requirement for approval of contractors and contract terms for capital projects.
58. These provisions will be fully complied with.

59. App. §.114. *Compliance with bar against use of funds to pay U.N. assessments, etc.*

59. Funds will not be used to pay U.N. assessments, etc.

60. App. §.115. *Compliance with regulations on employment of U. S. and local personnel for funds obligated after April 30, 1964 (Regulation 7).*

60. Regulation 7 will be complied with.

61. FAA §.636(i). *Prohibition on financing non-U. S.-manufactured motor vehicles.*

61. Loan funds will not be used to finance non-U.S.-manufactured motor vehicles.

62. App. §.401. *Compliance with bar against use of funds for publicity or propaganda purposes within U. S. not authorized by the Congress.*

62. Loan funds will not be used for publicity or propaganda purposes within U.S.

63. FAA §.620(k). *If construction of productive enterprise where aggregate value of assistance to be furnished by U. S. will exceed \$100 million, identification of statutory authority.*

63. Not applicable.



UNITED STATES COORDINATOR

ALLIANCE FOR PROGRESS

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D. C. 20523

UNCLASSIFIED
AID-DLC/P-724 /A Draft
ANNEX V, Page 1 of 2

LOAN AUTHORIZATION

Provided From: Alliance for Progress Funds
DOMINICAN REPUBLIC: Maternal and Infant Care

Pursuant to the authority vested in the Deputy U. S. Coordinator, Alliance for Progress, by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan pursuant to Part I, Chapter 2, Title VI, Alliance for Progress, of said Act, to the Government of the Dominican Republic ("Borrower") of not to exceed seven million one hundred thousand United States dollars (\$7,100,000) to assist in financing the United States dollar and local currency costs of a health program of maternal and infant care, emphasizing family planning, and including the remodeling and construction of health facilities, procurement of equipment, education and training of personnel, studies and mass media materials for the program, and technical assistance to the Borrower, this loan to be subject to the following terms and conditions:

1. Interest and Terms of Repayment. Borrower shall repay the loan to the Agency for International Development ("A.I.D.") in United States dollars within forty (40) years from the first disbursement under the loan, including a grace period not to exceed ten (10) years. The Borrower shall pay interest to A.I.D. in United States dollars on the disbursed balance of the loan of two (2) percent per annum during the grace period and two and one-half (2 1/2) percent per annum thereafter.
2. Other Terms and Conditions:
 - (a) Equipment, materials and services (except shipping and marine insurance) financed under the loans shall have their origin in and be procured from the United States or the Dominican Republic. Shipping financed under the loan shall be procured from the United States and marine insurance financed hereunder shall be placed in the United States with a company authorized to do marine insurance business in any state of the United States.
 - (b) United States dollars utilized under the loan to finance local currency costs shall be made available to Borrower or its designee under the Special Letter of Credit procedure and shall be used only for procurement in the United States.

UNCLASSIFIED

- (c) Borrower shall covenant to adequately staff, operate and maintain all facilities to be provided under the loan, and to finance all costs thereof from its own resources.
- (d) Prior to first disbursement under the loan:
- (i) Borrower shall have created a National Population Council to serve as an advisory body to the Secretary of Health, to supervise all population matters within government hospitals, and to coordinate all family planning programs conducted in facilities other than government hospitals; and
 - (ii) the rural clinics constructed with previous A.I.D. financing (SA Funds) shall have been put into full or substantially full operation with adequate staff, and each such clinic shall have an active family planning program.
- (e) Prior to any disbursement to finance the procurement of equipment and materials, Borrower shall establish adequate warehousing, insurance, and inventory controls, satisfactory to A.I.D., for such equipment and materials.
- (f) Prior to any disbursement to finance the construction of remodeling of health facilities, Borrower shall submit to A.I.D. staffing patterns and evidence of the establishment of staff positions, with correspondent budget allocations, for the staff of such facilities, all of which shall be satisfactory to A.I.D.
- (g) The loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

Deputy U. S. Coordinator

Date

SUMMARY OF FERTILITY, MORTALITY AND POPULATION GROWTH
IN THE DOMINICAN REPUBLIC

By Hernando Perez Montas
London School of Economics
1967

Past Population

The total population of the Dominican Republic in the last century appears to have been seriously underestimated. It is estimated that the population in 1800 must have been around 150 to 175 thousand reaching the figure of 800 thousand at the beginning of the twentieth century.

In the first half of the last century substantial immigration took place from Haiti to the Dominican Republic.

Errors in the Censuses

The 1960 Census appears to be rather complete although a slight global underenumeration is not ruled out. A differential underenumeration in 1950 of 1.87% was estimated. Subsequently, it was estimated that the underenumeration in 1935 was of the same order of that in 1950 and that a very efficient estimate was attained in 1920 yielding a figure only 84% complete.

Most of the not recorded population in 1950 and probably in 1935 were young children although some underenumeration of males at adult ages appear to have taken place too. The underenumeration of males was larger than of females in 1950.

Ages are very mistated in the Dominican Republic (about one out of every four as a minimum). Young children and old people tend to overstate their ages. Adult women tend to understate their ages.

A very strong digital preference for digits ending in 0 and a milder preference for digits ending in 5 is observed. A slight preference for digits ending in 2 and 8 is observed too. Ages were mistated by over one year in young and adult ages and certainly at old ages too. Myers Index of Preference was 22.8 for females in 1960.

Age mistatements in the Dominican Republic are a function of age, i.e. they tend to persist at the same ages over successive censuses.

Sex and survival rates were very distorted by age mistatements and by differential underenumeration by sex in 1950. The effect of migration could have contributed to the irregularities of the data.

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Correction of the Data

Attempts were made to smooth the data using graphical and analytical methods. Although considerable improvement was attained, the data was so seriously distorted that it was decided to fit the age-structure to stable population models. The population in 1950 was estimated by reverse survival and the males in 1950 and 1960 were computed using a set of U.N. Model six ratios in 1950 and projecting the resulting population to 1960 using U.N. Level 65. In general a very good fit was obtained.

Mortality

The overall level of mortality in the Dominican Republic in 1960 must be between Level 60 and Level 65 of the United Nations, which represents an expectation of life at birth of 50.0 to 52.5 years.

No conclusive information was obtained as to the pattern of mortality by age. For projections it was assumed that the pattern resembled those of the Model Life Tables of the United Nations although it is possible that the true pattern is closer to the more flexible system of Brass' Life Tables or Coale and Demeny Life Tables.

The mortality has declined very rapidly after 1950 in the Dominican Republic as a result of significant advances in the general sanitary and medical conditions in the country.

No appropriate Life Table has been constructed in the Dominican Republic. Although the Statistical Office constructed one using Reed and Morrell method, the recorded deaths were used in the calculations. As the death registration is very defective in the Dominican Republic, very biased results were obtained.

Until more accurate data from which to construct adequate Life Tables for the Dominican Republic become available, the United Nations Level 65, Coale and Demeny Level 14 West and Brass(= -0.25 to -0.30 and = 0.8 to 0.9) can be used as suitable approximations.

The Crude Death Rate in the Dominican Republic is around 14%. The Infant Mortality Rate is around 100 to 115 per thousand live births.

Fertility

The Crude Birth Rate in the Dominican Republic is very high. It is estimated to be between 47% to 48%.

The shape of the age-specific fertility distribution using the deficient registered births was inconsistent. It is estimated that the real shape resembles the high fertility low-peak type B of the

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United Nations Models which, although based on the observation of 72 countries with accurate data on marriage and fertility, is still rather rigid.

The Gross Reproduction Rate is around 3.15 and 3.30 daughters per women. The sex ratio at birth, derived from the defective births statistics, is very regular and close to the average value of 1.05 males per 100 females. On this basis, a Total Fertility Rate of 6.5 to 6.8 births per women, disregarding mortality, is considered the present level in the Dominican Republic.

Other demographic indicators estimated in this study were: not reproduction rate around 2.5, mean length of a generation around 28.2 years and an Intrinsic Rate of Natural Increase of 0.033 very close to the intercensal rate of growth of 0.034.

Marriage

No accurate statistics were available to analyze marriage patterns in the Dominican Republic. The "singulate age at marriage method" of Hajnal, based on the proportion single at each age, is not applicable in the country due to the large proportion of consensual unions. The proportion single according to the statistics of 1961 decreased and then increased at later ages due to "status" misstatements of women in unstable forms of marriage.

On the average, men are five years older than female at marriage.

The proportion of women living in consensual union is very high as measured by the proportion of illegitimate live births which is over 60%.

As it is likely that a larger proportion of illegitimate births are not recorded, the figures about the proportion of illegitimate late foetal death ratios (around 85%) provides another indicator.

Migration

The proportion of foreign borns as enumerated in the Censuses of 1950 and 1960 is very low (about 1.5% of the total population). Over 55% of the foreign born enumerated were Haitians. This proportion has been increasing.

The migration statistics in the country are very defective. No accurate data about differential migration was available about the country. The population classified by country of origin was not presented in the U.S.A. Censuses reports from which to estimate the migratory balance in the Dominican Republic.

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If the migratory balance is negligible, the expectation of life at birth is very close to 52.5 years, i.e. Level 65 of the United Nations, as used in the calculations. In the case of a positive migratory balance, the level of mortality in the country must be closer to Level 60 of the United Nations.

Births and Deaths Registration

The birth registration in the Dominican Republic was estimated, comparing the births generated by the estimated age structure and fertility models with the registered ones, to be only from 76% to 84% complete. The deaths registration was estimated to be even more incomplete - the coverage is about 65%. The comparison of the registered deaths with an appropriate Coale and Demeny table suggested that most of the not registered deaths were under one year of age in the 5 to 44 age group.

Population Growth

The population of the Dominican Republic will increase very rapidly as a result of the high fertility prevailing and the rapid declining mortality experienced recently. The population will increase from 3.05 million in 1960 to about 4.3 million by 1970. By 1980 the population will be about 6 million and in the year 2000 there will be between 10.5 million and 13.5 million people, depending on the future level of fertility. That represents a population density of 211 to 270 inhabitants per square kilometer which, in a mountainous country, is rather high.

FERTILITY, MORTALITY AND POPULATION GROWTH

IN THE DOMINICAN REPUBLIC

by

Hernando Perez Montes

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INTRODUCTION

The growing importance of demographic analysis in the twentieth century stems from the fact that it provides a series of parameters and indicators which are fundamental in the planning of the social economic development of modern societies.

Few countries in the world have an adequate picture of their past population history, most of them have just started to collect and analyze demographic data in a scientific way; this is the case of the Dominican Republic.

In the present study it has been attempted to analyze and estimate the main characteristic of the Dominican population regarding mortality, fertility and population growth on the basis of the limited information provided by the censuses of 1950 and 1960.

I am greatly indebted to J.G.C. Balcker and N.H. Carrier of the Population Investigation Committee of the London School of Economics for their guidance and advice in the elaboration of the present study. However, responsibility for the findings of this study rest wholly with the author and none of them necessarily agree with the methodology used and opinions stated in the report.

BRIEF HISTORICAL ANALYSIS

The Dominican Republic, occupying two-thirds of the Isle of Hispaniola, is the second in size and the third in population of the Caribbean countries.

Discovered by Columbus in 1492 it was the first colony of the New World. At that time the island was inhabited by native Caribbean Indians in number which conjectural estimates put between one hundred thousand and half a million.

The Spanish colonizers brought with them not only a different culture and religion but several diseases unknown to the Indian population. In a period of about 40 years the native population was almost completely eliminated due to smallpox, venereal diseases, subjugation and wars.

The subsequent 250 years can only be described very briefly: importation of African slaves to provide the lost Indian manpower and alternate emigration and immigration of the Spaniards and, to a lesser degree, the French. The discovery and development of new and richer colonies in Mexico and South America placed Santo Domingo as an intermediate bridge between Spain and the mainland. The magnitude of these migratory movements are unknown.

At the beginning of the nineteenth century (1812) the population of Hispaniola, excluding Haiti, was estimated at 60,012; and another estimate put the population in 1822 at 54,000 in Santo Domingo and 650,000 in Haiti.

The estimate for Santo Domingo must have been too low. First there is no reason why in the two-thirds of the island, with richer land, were living only one-ninth of the population of the whole island. Second, the rate of growth between 1812 and 1920 would be about 3.77% per annum which is inconsistently high, even if a large migratory movement took place from Haiti to Santo Domingo during the Haitian occupation from 1822 to 1844.

No further population estimate was available until in 1920 the so-called first Dominican Census was carried out during the American intervention. This Census can be classified as an "incomplete census" for at the time of the Census the world-wide influenza epidemic and a local smallpox epidemic were affecting the country which made it extremely difficult for the enumerators to cover the whole territory.

Finally, three other censuses were conducted in 1935, 1950 and 1960.

As it is expected that no appreciable change in fertility occurred in the present century and that mortality started to decline significantly, first very slowly between 1935 and 1950 and then rapidly after 1950, the expected rates of population growth should follow a gradual increasing pattern, specially in the absence of significant migratory movements within this period.

This is not the case as can be seen from the following figures:

| <u>Period</u> | <u>Intercensal Growth Rate</u> | <u>Enumerated Population ('000)</u> |
|---------------|------------------------------------|--|
| 1920/35 | 3.41% p.a. | 1920 - 895 |
| 1935/50 | 2.41 | 1935 - 1,479 |
| 1950/60 | 3.62 | 1950 - 2,136 |
| | | 1960 - 3,047 |

Having accepted the 1960 Census total as correct and having corrected the 1950 Census for a slight underenumeration, the most plausible assumption is that there was a slight global underenumeration in 1935 and a grossly deficient underenumeration in 1920 (about 16%) due to the previously stated difficulties.

As no estimates have been obtained concerning the accuracy and reliability of the censuses totals in the past and no post-enumeration surveys have been carried out in order to estimate their significance, use was made of the information available for other Latin American countries with similar characteristics to those of the Dominican Republic in order to obtain more indicators from which to estimate past population trends.

The following figures were computed which are far more consistent than the published ones:

| <u>Date</u> | <u>Population ('000)</u> | <u>Growth Rate</u> |
|-------------|---------------------------|--------------------|
| 1960 | 3,047 | 3.43% p.a. |
| 1950 | 2,175 | 2.50 |
| 1935 | 1,500 | 2.27 |
| 1920 | 1,070 | 1.48 |
| 1900 | 800 | - |
| 1850 | (400-450) | - |
| 1800 | (150-175) | - |

Between 1800 and 1822 there was a rather large emigration from the Dominican Republic due to the eviction of the French forces in 1809 and of the Spanish ones, together with most of the Dominican upper classes, in 1821 just before the Haitian invasion. Between 1822 and 1844 the

number 175,000 or so Dominicans was augmented by about 100,000 Haitians who were settled in Dominican territory by the occupying Haitians. After Independence in 1844 a large proportion of the Haitian settlers remained on Dominican soil, engaged in agricultural activities, and from 1844 to 1850 a large number of Dominicans who had been in exile in South America, Cuba and Puerto Rico returned to the Dominican Republic.

In the absence of any other studies concerning the population movement within this period, we believe the given figures to be closer to the truth.

Between 1850 and 1900 mortality should have been still very high. From 1862 to 1865, 9,000 of the 21,000 Spanish soldiers in the country were killed by yellow fever and very frequent internal insurrections should have caused a large wastage in human lives.

If there was a large migration of Haitians into the Dominican Republic in the last century they did not keep their culture, or at least their language. Only a few zones, mainly in the frontier with Haiti and in the sugarcane areas, remain where Haitian language, a mixture of French, African and American Spanish, is still spoken. Although a much lesser degree Haitian immigration still continued during the twentieth century, most of them were forced to go back by the Dominican authorities.

No definite policy has been established yet in the Dominican Republic about the importation of a Haitian labour force into the country.

Concerning the general policy on population, this must have been very pronatalistic during the nineteenth century due to the fear of another Haitian invasion, a fear which remained for two or three decades after the Independence in 1844, especially in view of their numerical superiority.

During the Trujillo period (1930-1961) the policy was very pronatalistic too, in part associated with the Catholic influence in the country. After 1961, in view of the "demographic explosion" which has been simply caused by the rapid decline in mortality, attempts have been made from the propagandistic viewpoint, about the necessity of controlling population growth.

However, no birth control or family planning programme has still been implemented, in spite of the country having one of the highest rates of population growth in Latin America, although it is expected that in one or two years small scale programmes will start. In this sense, the Dominican Republic is still lagging behind most Latin American countries.

ANALYSIS OF ERRORS IN THE DATA

There are two main types of errors affecting Census statistics; namely "Errors of Coverage" and "Age Mistatements". Both affect, with varying degrees and characteristics, the expected pattern of a specific population.

Errors of Coverage

(a) Errors in total coverage. As it is expected that the Dominican Republic Censuses have been improving due to higher experience and wider knowledge concerning census organization, enumeration and tabulation, the 1960 Census should provide a better estimate concerning total coverage of the population.

The analysis could be carried out testing several demographic indicators such as rates of growth, sex and survivorship ratios, urban and rural differentials on size of households, total population by political divisions, etc.

As mentioned in the last chapter, the 1950/60 intercensal rate of growth was extremely high (3.62% per annum) especially considering that in the previous period (1935/50) it was only 2.41% per annum and that no boundary changes took place within this period. The difference is too large to be accounted for solely by a sudden decline in mortality.

Keeping in mind the possible effect of migration, and that no overall change in fertility took place in the Dominican Republic between 1935 and 1950, the difference could be due to underenumeration, of varying degrees, of both the 1935 and the 1950 Censuses or, a most unlikely occurrence under the present circumstances, overenumeration in 1960.

Sex and survival rates were grossly distorted due to age mistatements and these are discussed below.

The use of balancing equations to correct census totals are appropriate when birth and death registrations are fairly accurate. As it is known that vital registration is highly defective in the Dominican Republic, it was not advisable to use them to estimate census totals but to test vital registration after the census totals have been estimated using independent sources.

Both the 1950 and the 1960 Censuses were based on the "De Facto" definition and carried out in one day.

No information as to the total number of enumerators employed in the 1960 Census were available. The figure for 1950 was of 30,000 enumerators which would yield a total of 71 persons recorded by each enumerator per day, or, more accurately, about 14 households per day per enumerator.

The average size of households in the 1960 Census was of 4.82 persons in urban areas and 5.15 persons in rural areas.

Further tests about the coverage at young ages were carried out before ascertaining with certain reliability the completeness of the Census totals. However, up to this stage, the 1960 Census seems rather complete. It must be taken into account that the Government at that date was facing increasing political difficulties both in the cities and in rural areas. Under these circumstances it is reasonable to assume that it was more interested in knowing the population living in different areas than in the past.

Up to now we have excluded the discussion of underenumeration of young children, a special and very frequent type of error, which will be discussed below.

(b) Underenumeration of young children

A very good indication of underenumeration of young children can be obtained by comparing the enumerated population with the corresponding registered births, after allowing for an appropriate incidence of mortality.

Table 1 shows the enumerated population by single years of age, up to age ten, and the registered births during the previous decade.

Table 1
Registered Births and Enumerated Population
up to age ten (1960)

| Year | Registered Births | Age | Enumerated Population (1960) |
|------|-------------------|-----|------------------------------|
| 1960 | 110,102 | 1 | 112,970 |
| 1959 | 115,151 | 1 | 102,780 |
| 1958 | 115,519 | 2 | 114,700 |
| 1957 | 110,448 | 3 | 117,690 |
| 1956 | 105,845 | 4 | 111,590 |
| 1955 | 104,840 | 5 | 109,260 |
| 1954 | 103,010 | 6 | 102,370 |
| 1953 | 95,052 | 7 | 103,430 |
| 1952 | 94,322 | 8 | 93,290 |
| 1951 | 74,762 | 9 | 78,980 |
| 1950 | 79,298 | 10 | 96,240 |

The enumerated population under one year of age in 1960, in the absence of migration which is very unlikely at this age, are the survivors of the births during the previous 12 months. As the Census was taken on 7th August, 1960, no appreciable error is made by taking the average of the births in 1959 and 1960 as the appropriate cohort. The resulting figure of 112,626 births is smaller than the enumerated population of 112,970. In the absence of age misstatements and with a 100% correct birth registration, these would be an indicator of strong underenumeration. These conditions are far from being achieved in the Dominican Republic. However, there is evidence of strong age misstatements as can be seen from the enumerated population at ages 2, 3 and 10.

The discrepancy between births and enumerated population is too great to be due only to age misstatements. Besides, in the Dominican Republic births are registered by "date of registration" instead of by "date of occurrence". Both deficient births registration and age misstatements impair the evidence that can be obtained from the comparison.

More evidence can be obtained by comparing the registered data with an expected configuration.

Table 2
Comparison of 1960 Female Population with
a Brass/Carrier Model

| Age | Graduated Females (1960) | Brass/Carrier Model | | Cumulative Difference |
|-------|--------------------------|---------------------|------------|-----------------------|
| | | (47,12) | Difference | |
| 0- 4 | 276,670 | 294,693 | -18,023 | -18,023 |
| 5- 9 | 238,766 | 227,141 | +11,625 | - 6,398 |
| 10-14 | 194,951 | 188,604 | + 6,347 | - 51 |
| 15-19 | 152,536 | 158,077 | - 5,541 | - 5,592 |
| 20-24 | 136,013 | 131,026 | + 4,987 | - 605 |
| 15 | 47.00% | 47.00% | - | - |
| 45+ | 11.80% | 12.00% | - | - |

Table 2 presents an extract of the general table comparing the females in 1960 previously graduated to eliminate partially the effect of age misstatements, with a Brass/Carrier Stable Population Model (B/C - 47,12).

As can be seen from the table the 1960 population shows considerable deficiency at ages (0-4) and a strong surplus at ages (5-9). The cumulative differences under 15 years of age is almost nil. This is bound to be so because the proportion under 15 years is the same in the graduated and in the stable population. However, the criteria of selection did not depend exclusively on the proportion of the population under 15 years of age but on the stable population whose cumulated figures "matched" more closely with our population (see Chapter 6).

The table suggests overstatement of ages of children (0-4) to the (5-9) age group, and a milder overstatement from the (5-9) to the (10-14) age group.

After age 14 there is a deficiency in age groups comprising the digit 5 and a surplus in those comprising the digit 0, due to the age get preference for this digit.

Although the Dominican population is not stable, but quasistable, the comparison is valid because fertility has remained fairly constant and infant mortality has been declining, but in a gradual way.

In these cases there is no evidence of a significant underenumeration of young children in 1960 but of a large shuffle between different age groups due to age mistatements. A different pattern was obtained for the 1950 Census suggesting the presence of underenumeration of young children.

(c) Underenumeration at other ages

The possibility of underenumeration at other ages, especially the most mobile sectors of the population consisting of adult males, can be tested by using model stable distributions and analysing sex and survivorship ratios.

Although the overall sex ratio for the Dominican Republic in 1960 (males per 100 females) seemed somewhat consistent yielding a figure of 101.6, the age-specific sex ratios and survivorship ratios were grossly distorted as can be seen in charts 10 and 12. The graduation of the age distribution by the ogive and all analytical formula improved the curves but the resulting pattern was still badly distorted (charts 11 and 13). These will be discussed later in greater detail.

The comparison of the data for each sex with appropriate model stable distributions for the 1960 Census, after accumulating the figures to eliminate the effect of age mistatements did not produce evidence of significant errors in the coverage of specific age groups.

As a result of the previous analysis it was decided that the 1960 Census, concerning total coverage, was fairly correct.

It must be stressed that the acceptance of the Census total as correct does not imply a 100% enumeration. It is likely that the 1960 Census might be 2% to 5% defective but, due to the lack of accurate information and considering that this slight underenumeration is compensated for by a similar one in previous censuses, from the analysis viewpoint no serious distortion would result in the calculations.

Age Mistatements

Charts 1 and 2 show the population pyramid for the 1960 and 1950 Censuses. As can be seen from these charts and the direct analysis of the data by single years of age, there is considerable heaping at certain ages.

The pattern of age mistatements and the sex differentials were almost the same for both censuses.

The following main characteristics concerning age mistatements were observed:

(i) There was a very strong general digital preference for digits ending in 0 and a less strong preference for digits ending in 5, except at ages 5 and 15.

(ii) There was a mild preference for digits ending in 2 and 8. Digits 1 and 9 were particularly "disliked".

(iii) The deficiency, as compared to a suitable stable population, in the 0-4 age group in 1960 does not appear to be due to underenumeration of young children but to overstatement of ages. As ages 5 and 10 do not show a very strong excess, it appears that everyone near a birthday gives their age next birthday. Thus, the "loss" at ages 0-4 would be balanced by a "gain" at ages 5-9 and 10-14. This is, in fact, the case as can be seen in Table 2.

(iv) The pattern of the 1950 population, on the contrary, does suggest the presence of underenumeration of young children and possible at other ages too. The comparison of the 1950 population showed, for both sexes, considerable differences that, when accumulated, did not tend to compensate as happened with the 1960 population.

(v) Females, on both censuses, appear to have consistently understated their ages between 25 and 49 years of age.

This tendency is very common in Latin American countries.

As a result of it, considerably more females than males were recorded between 20 and 30 years for females were concentrated at those ages. This can be seen in charts 3 and 4 which compares enumerated males and females for each age.

(vi) There does not appear to be a strong preference in the Dominican Republic for the "status" ages of 16, 18 and 21 years of age. At 16, age at which Dominicans should obtain identification cards and males are eligible for military service, there is no concentration at all. At 18 there appears to be a mild concentration of females. At 21, no concentration at all is observed.

(vii) There is a strong preference for the "status" age for Social Security benefits, of 60 years, and overstatement of ages towards the extreme of life.

These are the main features concerning age mistatements in the Dominican Republic. The pattern, however, is a very usual one. A very important factor is that errors in recording ages in the Dominican Republic are a function of age, i.e. they tend to persist at the same ages over a succession of censuses.

Whipple's index, i.e. the ratio of ages ending in 5's and 0's to one fifth of the total population, multiplied by 100, using the age range of 23 to 62 years of age, gave the following figures (Table 3).

Table 3

Whipple's Index
Dominican Republic 1950 and 1960

| Year | Males | Females | Both Sexes |
|------|-------|---------|------------|
| 1950 | 173.1 | 193.3 | 183.0 |
| 1960 | 167.1 | 203.3 | 184.9 |

According to the UN scale the Dominican data is considered as "rough" or "very rough" data.

Whipple's index measures only concentration in digits multiples of five. (In case of no concentration at all the index must be 100.) In general, the data shows that the concentration is larger for females than males.

The United Nations Secretariat method (see Population Bulletin of the United Nations No. 2, 1952), which gives all index obtained as a function of age and sex ratios, and which is affected by differential omissions and by age mistatements, was applied to the 1960 Census giving an index of 54.3. However, the theoretical meaning of this index has not been satisfactorily explained.

The following table gives the indices computed by the U.N. for several countries:

| <u>Country</u> | <u>U.N. Index</u> |
|---------------------------|-------------------|
| Dominican Republic (1935) | - 54.5 |
| U.S.A. (1940) | - 10.5 |
| Venezuela (1941) | - 42.4 |
| Brazil (1940) | - 27.2 |
| Mexico (1940) | - 33.7 |
| Puerto Rico (1940) | - 23.8 |
| Chile (1920) | - 5.1 |
| Turkey (1935) | - 81.3 |
| Turkey (1945) | - 87.6 |

Another index, more useful and elaborate than Wipple's and U.N. Indexes is Myers Index. This index, to measure digital preference, should be almost 0 if ages are reported accurately.

Myers index computed for the 1960 males was of 22.86, which is rather high. The interpretation of this figure is that on the average, almost 1 in every 4 persons mistakes his age. This is a minimum estimate due to compensation between overstated and understated ages.

The per cent distribution of Myers "Blended" population is shown in Table 4.

Table 4

Percentage Distribution, Myers "Blended" Population
Dominican Republic 1960 - Males

| Digit | Blended Population |
|--------------|--------------------|
| 0 | 17.91% |
| 1 | 6.58 |
| 2 | 10.00 |
| 3 | 8.73 |
| 4 | 9.24 |
| 5 | 13.03 |
| 6 | 8.70 |
| 7 | 7.73 |
| 8 | 10.49 |
| 9 | 7.59 |
| Total | 100.00 |

The "saw-toothed" pattern is rather regular, for both sexes, between ages 30 and 55, with high peaks in the (0-4) age groups and low peaks in the (5-9) ones. This may be the result of differential digital preference in both censuses.

In order to reduce considerably the effect of age mistatements, survivorship ratios for cumulative ages were computed.

Table 5 presents the corresponding figures.

Table 5

Survival Rates for Population aged X and Over
Dominican Republic - 1950/60

| Age (X) | Males | Females |
|---------|--------|---------|
| 0+ | 0.9395 | 0.9350 |
| 5+ | 0.9253 | 0.9115 |
| 10+ | 0.9257 | 0.9058 |
| 15+ | 0.9275 | 0.8875 |
| 20+ | 0.9171 | 0.8686 |
| 25+ | 0.8985 | 0.8455 |
| 30+ | 0.8869 | 0.8389 |
| 35+ | 0.8685 | 0.8371 |
| 40+ | 0.8391 | 0.8178 |
| 45+ | 0.7906 | 0.7584 |
| 50+ | 0.7542 | 0.7013 |
| 55+ | 0.7061 | 0.7094 |
| 60+ | 0.6520 | 0.6929 |
| 65+ | 0.5737 | 0.6865 |

The series of rates are rather regular although very light mortality is obtained at young ages suggesting underenumeration at these ages in the 1950 Census. Besides, the rates for males are higher than those of females suggesting a larger underenumeration at all ages for males in 1950 or the effect of differential migration, i.e. larger immigration of males than of females at all ages.

Survival ratios will be discussed later on when the date has been graduated in order to eliminate, partially, the effect of age mistatements.

Sex Ratios

Sex ratios (males per 100 females) provide a very sensitive test as to the accuracy of demographic data. In the absence of selective migration or mortality, sex ratios should change very gradually starting at birth somewhere between 102 and 107, and decreasing steadily due to a higher mortality at almost all ages.

In some societies, female mortality is higher during the childbearing period causing a temporary rise at these ages, especially in underdeveloped countries which lack adequate medical facilities. This is not the case in the Dominican Republic which, due to its small territorial extension, places even the most remote urban areas close to a widely scattered number of medical centres.

Chart 12 shows the sex ratios for the 1950 and 1960 Censuses of the Dominican Republic.

The pattern is very irregular for both Censuses yielding very low figures between 15 and 30 years and very high ones between 30 and 70 years. Most of the distortions observed are due to age misstatements, especially the understatement of ages of females between 30 and 50 years forming a "hump" in the female's age structure at early adult ages causing the sex ratios to fall consistently and then to rise to the high peaks observed at the later adult ages.

The existence of almost the same pattern for both censuses is again an indication that the age misstatements are not of a generational nature, which would cause the distortions to run down a generation diagonal but a function of age. This peculiarity is an indicator too that the effect of underenumeration is smaller than otherwise would be apparent from the charts.

GRADUATIONCorrection of General Structure

Early in the analysis it became apparent that a strong adjustment would be needed. Not only the age structure was very distorted by age mistatements but the sex and survivorship ratios were not close to the expected pattern.

In view of the strong preference for digits ending in 0 and considering that the sum of the per cent distribution of Myers blended population was very close to the "normal" 50% when grouping from 1/2 to 5-1/2 (50.02%) to smooth the general structure of the population it was decided to split the population in digits ending in 0 and 5 and to read from the corresponding ogives the graduated figures for the usual 5 year groups.

Charts 5 to 9 show the ogives drawn. It must be borne in mind that the ogive adjustment should only be used under certain conditions for otherwise genuine distortions of the population due to migration, war, famine or epidemics would be removed. None of these elements has significantly affected the Dominican population in the past five or six decades.

In general, very few points were off the ogive on the 1960 populations especially at the middle ages where the ogive is intended to be applicable. A less good fit was obtained for the 1950 population. The rather good fit obtained in 1960 might be due to the age grouping used which could have removed some of the distortions due to age mistatements.

For illustrative purposes, Table 6 presents the comparison for females of the enumerated and the ogive population.

Table 6

Comparison between the Enumerated and
the Ogive Population

Dominican Republic - Females, 1950/60

| Age | 1950 | | 1960 | |
|-------|------------|-------|------------|-------|
| | Enumerated | Ogive | Enumerated | Ogive |
| 0-4 | 175% | 175% | 183% | 183% |
| 5-9 | 138 | 153 | 159 | 158 |
| 10-14 | 127 | 130 | 126 | 129 |
| 15-19 | 117 | 111 | 101 | 101 |
| 20-24 | 103 | 92 | 90 | 90 |
| 25-29 | 74 | 81 | 72 | 75 |
| 30-34 | 56 | 58 | 61 | 62 |
| 35-39 | 52 | 48 | 49 | 49 |
| 40-44 | 40 | 36 | 38 | 35 |
| 45-49 | 29 | 29 | 30 | 30 |
| 50-54 | 27 | 25 | 28 | 26 |
| 55-59 | 14 | 19 | 15 | 19 |
| 60+ | 48 | 43 | 48 | 43 |
| Total | 1,000 | 1,000 | 1,000 | 1,000 |

As can be seen on Table 6, the age structure is far more regular and realistic than the enumerated one.

No adjustment was made under age 10 for the lack of continuity does not allow to establish the accuracy of the ogive at these points. The differences shown in the (5-9) age groups were due to transfers from the (10-14) age group. The main results obtained using the ogive were the reduction of the population at old ages and the attainment of a more regular age structure.

However, sex and survival rates still remained very distorted indicating that further adjustments were necessary.

Correction for Digital Preference

Several graduation formulae can be used to smooth the distortions caused by digital preference.

(a) A formula advocated by the United Nations based on finite differences. This formula was not used because the net gains and losses of alternate quinary age groups are independent of age.

(b) A formula based on a second degree polynomial involving transfers within a denary age group.

(c) A modification of (b) using ratios of denary age groups.

For its simplicity and soundness it was decided to use formula (b) which basically is of the form:

$$u_2 = 1/2 U_2 + 1/16 (U_0 - U_4)$$

$$u_3 = 1/2 U_2 - 1/16 (U_0 - U_4)$$

where u represents quinary age groups and U denary age groups.

Our general assumption was that the stronger preference for digits ending in 0 generated transfer from a (5-9) age group to the next (0-4) age group. For females, within the range of 20 to 45 years of age a modified assumption was used namely that the transfers took place from top to bottom, i.e. from a (0-4) age group to the previous (5-9) age group. This modified assumption agrees with the systematic understatement of ages of females within this range.

Table 7 shows for females, the comparison between the ogive population and the graduated population.

Table 7

Comparison between the Ogive and the Graduated Population
Dominican Republic. Females 1950 and 1960

| Age Groups | 1950 | | 1960 | |
|------------|-----------|-----------|-----------|-----------|
| | Ogive | Graduated | Ogive | Graduated |
| 0- | 186,458 | 186,458 | 276,670 | 276,670 |
| 5- | 162,891 | 162,891 | 238,766 | 238,766 |
| 10- | 138,461 | 138,461 | 194,951 | 194,951 |
| 15- | 118,225 | 117,959 | 152,536 | 152,536 |
| 20- | 97,988 | 98,255 | 136,013 | 136,013 |
| 25- | 86,272 | 81,945 | 113,344 | 113,344 |
| 30- | 61,775 | 66,101 | 93,698 | 93,698 |
| 35- | 51,124 | 50,392 | 74,051 | 71,123 |
| 40- | 38,343 | 39,076 | 52,894 | 55,822 |
| 45- | 30,888 | 30,888 | 45,337 | 45,337 |
| 50- | 26,627 | 26,627 | 39,293 | 39,293 |
| 55- | 20,237 | 20,237 | 28,714 | 28,714 |
| 60- | 12,781 | 12,781 | 18,135 | 18,135 |
| 65- | 10,651 | 10,651 | 15,113 | 15,113 |
| 70- | 6,391 | 6,391 | 9,068 | 9,068 |
| 75+ | 15,976 | 15,976 | 22,667 | 22,667 |
| | 1,065,088 | 1,065,088 | 1,511,250 | 1,511,250 |

As can be observed on the table, the graduation formula modified the ogive figures for females of six age groups in 1950 and of only two age groups in 1960.

For males two age groups were modified in 1950 and ten age groups in 1960.

A good indicator of the magnitude of the adjustments made, considering that comparison with stable populations will be needed in order to get a more rational distribution of the Dominican population, is obtained comparing the population under 15 years and over 45 years of age. This can be seen in Table 8.

Table 8

| Age Groups | 1950 | | 1960 | | |
|------------|--------|---------|--------|---------|------------|
| | Males | Females | Males | Females | |
| 15 | 45.10% | 45.80% | 46.90% | 47.00% | Graduated |
| 45+ | 12.70 | 11.60 | 13.20 | 11.80 | |
| 15 | 45.00 | 44.00 | 47.70 | 46.80 | Enumerates |
| 45+ | 12.70 | 11.80 | 13.50 | 12.00 | |

Generally, the proportion aged 45 years and over has been diminished by the graduation, except for the males in 1950. This is to be expected due to the overstatement of ages at old ages.

However, some anomalous features still remain. In the graduated data the proportion of males under 15 years of age is smaller than the proportion of females while the proportion of males surviving after 45 years of age is greater than that of females. Assuming higher mortality for males than for females, this latter feature is unacceptable. In the presence of very strong age misstatements and the possibility of underenumeration, the ogive and graduation formula used apparently do not suffice to produce the expected configuration.

Sex and Survival Rates. Graduated Data

The survival rates based on the graduated population, although still rather irregular, show a tendency towards normality and most of the "saw-toothed" pattern has been removed. In spite of not having attained an acceptable configuration, the graduation process so far applied has brought considerable improvement on the data.

However, after age 14, the survival rates for males are, at most ages, higher than those of females. This might be due to a higher underenumeration of males than of females in 1950 or the effect of differential migration between 1950/60.

The sex ratio curves (chart 13) have been smoothed too. They still differ considerably from the usual descendent curve.

Although analytical formulae do exist to graduate sex ratios by means of population transfers, they should be applied when the data "approaches" normality. In the present case, it is doubtful that any formula would produce the expected pattern due to the large distortion of the data.

Finally, mortality levels according to the United Nations Models were computed transforming the Dominican Republic 10 years survival rates into approximate five year rates and comparing them with those of the United Nations.

For each sex, the set of levels computed were very erratic. Unplausibly high levels were obtained for the (0-4) age groups, probably due to underenumeration of young children in 1950, and at old ages indicating that the graduation process was not strong enough as to correct the large distortions caused by strong overstatement of ages at old ages.

Had the levels been more regular, an estimate of the overall level of mortality of the population could have been obtained from which to graduate the data.

A different methodology is needed both to graduate the age structure of the Dominican population and to correct the 1950 Census for underenumeration and/or differential migration.

It is based on the Theory of Stable Populations and, for expository convenience, is discussed in the next chapter.

MORTALITYIntercensal Projection

The method used to estimate the overall mortality level in the Dominican Republic consisted in projecting the enumerated population in 1950 to 1960 using different sets of survival rates of the United Nations Models and comparing the projected populations with the enumerated one in 1960. The comparison was made of the population over each quinquennial age and taking the level which gave the best fit.

Operating in this way we greatly eliminate the effect of age mistatements obtaining a very good indicator of the mortality level of the population if a certain regularity is attained.

Table 9 shows the mortality levels obtained for each sex. As it was clear that the levels for males were very irregular they were rounded off to the nearest five year level.

Table 9

United Nations Mortality Levels for
Projected and Accumulated Population

Dominican Republic 1950 to 1960

| Age | Mortality Levels | |
|-----|------------------|-------|
| | Females | Males |
| 10+ | 76 | 85 |
| 15+ | 63 | 80 |
| 20+ | 67 | 90 |
| 25+ | 65 | 105 |
| 30+ | 64 | 110 |
| 35+ | 63 | 110 |
| 40+ | 75 | 115 |
| 45+ | 91 | 115 |
| 50+ | 112 | 125 |
| 55+ | 97 | - |
| 60+ | 99 | - |

The rates for males, apart from increasing erratically with age, are inconsistently high. A larger underenumeration of males than of females in the 1950 Census or differential immigration from Haiti during the decade are plausible explanations. An important factor to be considered about the first possibility is that the proportion of males living in urban areas in the Dominican Republic is far higher than that of females.

A certain regularity is observed for females between ages 15 and over and 35 and over tending to cluster around level 65. As at other ages the rates for females are higher than level 65 and as both underenumeration in 1950 and immigration within the decade will tend to make the observed mortality lighter than it really is, the selection of U.N. level 65 of mortality for the Dominican Republic seems very adequate. It must be borne in mind that survival rates are very sensitive to migration and underenumeration.

A setback of the use of survival rates to estimate the mortality in a population is that the population under 10 years of age in the second Census is not taken into account. As in countries with relatively high mortality the proportion of deaths under age 10 is high as compared to the total deaths, the pattern of mortality by age is incomplete and rather limited especially in the controversial age group (0-5) years where different sets of Model Life Tables differ mostly.

The expectation of life at birth implied by the U.N. Level 65 of mortality is of 52.5 years, which is higher than the estimates of international organizations for the country. However, it must be borne in mind that the sanitary conditions in the Dominican Republic improved rapidly between 1950 and 1960. Three factors are important:-

- (i) Mortality from malaria decreased in the 1950's due to the W.H.O. programme.
- (ii) The ratio of 2,100 persons per physician in 1960, which is under the average for Latin America, and
- (iii) The initiation of a Social Security System in 1949 which built medical centers all over the country and gave medical care, in practice, to both the insured and non-insured population.

Conversely, the morbidity rates are still very high in the Dominican Republic. Most of the diseases affecting the Dominican population are endemic.

Graduation of the Age Distribution

As the registration of deaths in the Dominican Republic is very defective and the Censuses distributions rather irregular, in spite of the graduations

applied, due to the lack of information on children ever born and the proportion of children surviving by age of mother from which to estimate by Brass' method the pattern of mortality in the country, the following procedure was used in the analysis:-

(a) A Stable Population Model was fitted to the females in 1960 which was the more regular of the age distributions and which besides, provided the best fit. Both the enumerated and graduated population (by ogive and formula) were used.

(b) The selected Model for females was back-projected from 1960 to 1950 using U.N. Level 65. This computed population, previous comparison with the enumerated females in 1950, was the estimated female population for that year. An indication of underenumeration in 1950 and/or immigration within the decade was provided by the difference between the enumerated and projected females in 1950.

(c) The males in 1950 were calculated applying appropriate model sex ratios to the estimated female population in 1950.

(d) The computed male population in 1950 was projected to 1960 using U.N. Level 65. The enumerated and projected male population in 1960 were compared to provide a test on the assumptions and calculations applied. A very good fit was obtained.

Fitting to a Stable Population

As Brass' two parameter system of Model Life Tables has been very successful in the analysis of Tropical African populations, apart from its elasticity as compared to the U.N. or Coale and Demeny systems of model life tables, it was decided first to use the model stable populations constructed by Carrier averaging several Alpha and Gamma of Brass' tables.

Several stable populations were compared to the enumerated and graduated female distribution in 1960. The criteria of selection was to obtain the closer accumulated figures by age, especially after age 15, and the closer proportion under age 15 and 45 and over. It was not necessary to interpolate to compute an appropriate model for the model (47,12) gave a very good fit as can be seen on Table 10.

The comparison of the enumerated data with the model suggested that in general there was an upward pushing of ages due to age misstatements except between 30 and 44 years in which there appears to be understatement of ages. This agrees with our previous assumption.

The overstatement of ages was rather strong from the (0-4) to the (5-9) age group and at old ages.

For the remaining age distribution the fit was not as good unless drastic changes were applied.

As mentioned before, our selected model (47,12) was back-projected to 1950 using U.N. Level 65 to obtain an estimate of the female's age-structure and degree of underenumeration in 1950. Applying a set of sex ratios according to the U.N. Level 55 pattern, the estimated male population in 1950 was computed. This drastic procedure, which usually should be avoided, was necessary because of the gross distortion of the sex ratios.

Table 11 shows the comparison between the original population and the projected model which gives an indication of the underenumeration in 1950 and/or migration within the period. The graduated date, by ogive and formula, is used instead of the enumerated.

Table 10

Fitting to a Stable Population

Dominican Republic. Females 1960

| Age Group | Distribution | | | Cumulative Distribution | | |
|-----------|--------------|-----------|----------------------|-------------------------|-----------|----------------------|
| | Enumerated | Graduated | Brass Stable (47,12) | Enumerated | Graduated | Brass Stable (47,12) |
| 0-4 | 1,830 | 1,831 | 1,949 | 1,830 | 1,831 | 1,950 |
| 5-9 | 1,590 | 1,579 | 1,503 | 3,420 | 3,410 | 3,453 |
| 10-14 | 1,260 | 1,290 | 1,248 | 4,680 | 4,700 | 4,701 |
| 15-19 | 1,010 | 1,010 | 1,046 | 5,690 | 5,710 | 5,747 |
| 20-24 | 900 | 900 | 867 | 6,590 | 6,610 | 6,614 |
| 25-29 | 720 | 750 | 715 | 7,310 | 7,360 | 7,329 |
| 30-34 | 610 | 620 | 589 | 7,920 | 7,980 | 7,918 |
| 35-39 | 490 | 471 | 485 | 8,410 | 8,451 | 8,403 |
| 40-44 | 380 | 369 | 398 | 8,790 | 8,820 | 8,801 |
| 45-49 | 300 | 300 | 324 | 9,090 | 9,120 | 9,125 |
| 50-54 | 280 | 260 | 259 | 9,370 | 9,380 | 9,384 |
| 55-59 | 150 | 190 | 203 | 9,520 | 9,570 | 9,587 |
| 60-64 | 190 | 120 | 154 | 9,710 | 9,690 | 9,741 |
| 65-69 | 80 | 100 | 111 | 9,790 | 9,790 | 9,852 |
| 70-74 | 80 | 80 | 74 | 9,870 | 9,850 | 9,926 |
| 75+ | 130 | 130 | 74 | 10,000 | 10,000 | 10,000 |
| Total | 10,000 | 10,000 | 10,000 | - | - | - |

Table 11Comparison between Graduated and
Estimated Age DistributionsDominican Republic 1950

| Age | Estimated Females | Graduated Females | Estimated Males | Graduated Males |
|---|----------------------|----------------------|--------------------|--------------------|
| 0-4 | 200,728 | 186,458 | 206,148 | 189,383 |
| 5- | 163,016 | 162,891 | 167,091 | 161,804 |
| 10- | 136,145 | 138,461 | 139,685 | 131,695 |
| 15- | 113,514 | 118,225 | 116,692 | 112,758 |
| 20- | 94,094 | 97,988 | 96,917 | 93,886 |
| 25- | 77,759 | 86,272 | 80,169 | 81,373 |
| 30- | 64,131 | 61,775 | 66,183 | 66,383 |
| 35- | 52,719 | 51,124 | 54,406 | 54,605 |
| 40- | 42,922 | 38,343 | 44,124 | 42,828 |
| 45- | 34,680 | 30,888 | 35,270 | 37,474 |
| 50- | 27,660 | 26,627 | 26,660 | 28,909 |
| 55- | 21,704 | 20,237 | 21,183 | 22,485 |
| 60- | 16,684 | 12,781 | 15,783 | 14,990 |
| 65+ | 31,680 | 33,018 | 27,561 | 32,122 |
| Total | 1,077,436 | 1,065,088 | 1,097,872 | 1,070,695 |
| Diff. | | 12,348 | | 27,177 |
| % Under- enumeration or differential migration | | 1.15% | | 2.49% |

Table 11 shows a total difference of approximately 1.8% which can be mainly attributable to underenumeration. As suspected, the difference was larger for males (2.49%) than for females (1.15%). The comparison with

the graduated population indicates that most of the differences occurred in the (0-4) age group suggesting underenumeration at these ages. For males, certain differences occurred at other ages too.

Table 12 presents the Haitian and foreign born population enumerated in the 1950 and 1960 Censuses.

Table 12

Haitian and Foreign Born Population
Dominican Republic 1950 and 1960

| Foreign Born | 1960 | 1950 | Difference |
|--------------|--------|--------|------------|
| Haitians | 29,500 | 18,771 | 10,729 |
| Others | 15,200 | 15,883 | -683 |
| Total | 44,700 | 34,654 | 10,046 |

While the proportion of Haitians in the Dominican Republic, as to the total foreign borns enumerated, was of 57.5% in 1950, it increased in 1960 to almost 66%. The enumerated foreign born population, excluding Haitians, decreased during that period indicating a net emigration within the decade. On the other hand, the Haitian population increased by 60% between 1950 and 1960.

A more thorough analysis of migration in the Dominican Republic is impaired due to the absence of trustworthy migration statistics.

However, as compared to the total population, the foreign born represented in 1960 less than 1.5% and the next gain within the decade was less than 0.5%.

As there has been some emigration of Dominicans to U.S.A. and Puerto Rico, it was tried to obtain from the United States Censuses data of immigrants by country of origin. Regrettably, the data was not presented by single countries but by regions.

Under these circumstances and bearing in mind that the differences between the projected model to 1950 differs from the original data mostly at very young ages where immigration is very unlikely, most of the differences appear to be due to underenumeration in 1950.

The undetermined effect of immigration, if it is significant, would then be to make mortality lighter than it really is. To take into account this eventuality it is more sound to say that the level of mortality in the Dominican Republic lies between level 60 and level 65 according to the United Nations Models giving an expectation of life at birth between 50.0 and 52.5 years. For analysis purposes, U.N. Level 65 was used.

Projecting the computed male population from 1950 to 1960 gives an estimation of the age distribution of males and provides a check on the accuracy and soundness of our assumptions.

Table 13 shows the comparison between the enumerated males in 1960 and the projected males using U.N. Level 65.

Table 13
Comparison of Enumerated and Projected Population
Dominican Republic. Males - 1960

| Age | Distribution | | Cumulative Distribution | | |
|--------------|------------------|------------------|-------------------------|-----------|-----|
| | Enumerated | Projected | Enumerated | Projected | Age |
| 0-4 | 283,060 | (301,203) | 1,535,820 | 1,535,820 | 0+ |
| 5-9 | 246,630 | (230,373) | 1,252,760 | 1,234,617 | 5+ |
| 10-14 | 203,450 | 193,387 | 1,006,130 | 1,004,244 | 10+ |
| 15-19 | 133,160 | 162,179 | 802,680 | 810,857 | 15+ |
| 20-24 | 121,410 | 134,419 | 669,520 | 648,678 | 20+ |
| 25-29 | 103,990 | 110,892 | 548,110 | 514,259 | 25+ |
| 30-34 | 94,730 | 91,538 | 444,120 | 403,367 | 30+ |
| 35-39 | 77,500 | 75,415 | 349,390 | 311,829 | 35+ |
| 40-44 | 65,870 | 61,722 | 271,890 | 236,414 | 40+ |
| 45-49 | 51,660 | ,885 | 206,020 | 174,692 | 45+ |
| 50-54 | 47,100 | 39,328 | 154,360 | 124,807 | 50+ |
| 55-59 | 28,920 | 30,106 | 107,260 | 85,479 | 55+ |
| 60-64 | 32,390 | 21,317 | 78,340 | 55,373 | 60+ |
| 65-69 | 14,250 | 15,311 | 45,950 | 34,056 | 65+ |
| 70-74 | 14,060 | 9,741 | 31,700 | 18,745 | 70+ |
| 75+ | 17,640 | 9,004 | 17,640 | 9,004 | 75+ |
| Total | 1,535,820 | 1,535,820 | - | - | - |

As the projection from 1950 yields the estimated population in 1960 aged 10 years and over, the population in the (0-4) and (5-9) age groups were obtained by fitting the age distribution to a Brass/Carrier Model, subtracting from the total population the population aged 10 and over, and estimating the first two groups from the model. They are shown in parenthesis in Table 13.

It must be remembered that neither with the ogive nor with the analytical formula the (0-4) and (5-9) age groups were altered, except for transfers from the (10-14) to the (5-9) age groups. Again, at old ages, gross overstatements of ages appear to have taken place. The former graduation process was not strong enough to produce an adequate configuration due to the great distortion of the data.

The population aged 10 and over was of 1,006,130 for the recorded data and 1,005,961 for the graduated (by ogive and formula) data suggesting a very good fit with the projected population (1,004,244).

Chart 11 shows the survival ratios curve corresponding to the United Nations Level 65 for females. Apart from the sharp differences at young ages due to underenumeration in 1950, the rest of the curve seems to cut through the curve for females suggesting that most of the remaining differences were due mainly to age mistatements.

The corresponding curve for males, not presented there, lies a bit lower than the curve of females and is consistently lower than the graduated survival rates for males.

Chart 13 shows (in red) the Sex Ratios corresponding to the United Nations which differ markedly from the graduated ones.

Sex ratios are very sensitive to age mistatements, underenumeration and differential migration.

Correction of Intercensal Growth Rate

As the total population in 1950 was increased from 2,135,872 to 2,175,397, i.e. by 39,525 to correct for underenumeration in the 1950 Census, the growth rate for the decade changed from the previous 3.62% per annum to 3.43% per annum. This latter figure seems more consistent than the former one.

The growth rate for females only (3.44%) was slightly higher than the average.

Construction of Stable Populations

Using the fertility distributions (next chapter) and appropriate sets of Model Life Tables it was possible to construct several stable populations for the Dominican Republic in order to test the consistency of our graduated age distribution and the rate of population growth.

The three systems of Model Life Tables were used.

They were, the United Nations Level 65, both for males and females, Coale and Demeny Level 14, West for females and Brass' Alpha and Gamma Model Life Tables with Gamma ranging between 0.8 and 0.9 and Alpha between -0.25 and -0.30. The effectiveness of the comparisons was impaired because we did not have previous estimates of Alpha and Gamma in order to use a proper Brass Life Table. The selection of Alpha and Gamma was more or less arbitrary comparing the sets of U.N. and Coale's Life Tables with the Brass ones and selecting those which were closer to the former ones.

Table 15 presents the comparison between the assumed female age distribution in 1960 (Brass/Carrier 47,12) and two stable populations. The first was constructed using a United Nations stationary population corresponding to the level 65 and the second one with the Lx corresponding to Brass with Alpha = -0.25 and Gamma = 0.8. A constructed stable for males (level 65) is presented in the last column.

Table 14

Comparison of Model Stable Population with Constructed Stable Populations

| Age | Model | U.N. | Brass | U.N. (Males) |
|-----|-------|-------|-------|--------------|
| 0-4 | 1,949 | 1,897 | 1,860 | 1,915 |
| 5- | 1,503 | 1,528 | 1,493 | 1,539 |
| 10- | 1,248 | 1,272 | 1,246 | 1,282 |
| 15- | 1,046 | 1,057 | 1,046 | 1,066 |
| 20- | 867 | 874 | 871 | 880 |
| 25- | 715 | 718 | 723 | 723 |
| 30- | 589 | 590 | 598 | 593 |
| 35- | 485 | 483 | 497 | 485 |
| 40- | 398 | 394 | 408 | 394 |
| 45- | 324 | 320 | 334 | 317 |
| 50- | 259 | 257 | 270 | 251 |
| 55- | 203 | 201 | 213 | 193 |
| 60- | 154 | 154 | 163 | 143 |
| 65- | 111 | 111 | 119 | 99 |
| 70- | 74 | 74 | 80 | 63 |
| 75+ | 74 | 70 | 80 | 55 |
| 15 | 47.00 | 46.97 | 45.99 | 47.36 |
| 45+ | 12.00 | 11.86 | 12.58 | 11.23 |

The constructed stable populations using the U.N. set is very close to the assumed age distribution of the Dominican females in 1960, i.e. the Brass/Carrier Model (47,12). The main discrepancy is observed between ages(0-4) and (5-9). The distribution of the constructed stable using the U.N. tables in both cases, for males and females, gives values between the enumerated distribution and the estimated one.

Up to this stage we have obtained a consistent estimate of the level of mortality in the Dominican Republic. It corresponds approximately to the level 65 of the United Nations Models which represent an expectation of life at birth of 52.5 years.

Several assumptions had to be made in the present chapter. First it was assumed that the pattern of mortality with age resembled those of the United Nations set for no data was available to operate with the two parameter system of Model Life Tables evolved by Brass which is far more flexible than the U.N. one.

The stable population constructed using the U.N. Model Life Tables gave a very good fit when compared with the estimated distribution both for males and females in 1960. As for future projections, it was decided to continue on using the U.N. survival rates, it seemed more adequate to substitute, for projection purposes, the estimated age distribution with the constructed stable populations. The only difference consisted in the pattern of mortality at young ages. Future data will enable to ascertain with more accuracy the pattern of mortality by age in the Dominican Republic.

At present, with the limited data available, at least the obtained estimates are closer to the truth than the published ones.

FERTILITYAge Specific Fertility Distribution

No questions on fertility have been included in the Dominican Censuses, specially questions on children born during the past 12 months and children ever born. With this data, accurate estimates of the level of fertility in the country can be obtained. Use, therefore, had to be made of the birth registration in the Dominican Republic in 1960, which is highly defective, to try to estimate the age-specific fertility distribution in the country. The birth rate obtained from the registered births in 1960 is of 36.6% when it is known that the birth rate in the Dominican Republic must be in the upper forties as evidenced by its rate of growth and age structure.

The "crude" set of age-specific fertility rates had to be graduated to eliminate errors both of age recordings and of age mistatements. It is assumed that the mistated age given by a women in the Census was the same one given on registering a birth. This may not be so in the Dominican Republic because while in the Census no identification card is necessary, on registering a birth the identification card has to be produced.

To graduate the data a set of multipliers evolved by Brass and based on polynomials was used.

Table 15 shows the "crude" and graduated age-specific fertility distribution based on the registered births.

Table 15

Age Specific Fertility Distribution
(Based on Registered Births)

Dominican Republic. 1960

| Age | Registered Births | Enumerated Females | ASFD | Graduated Distribution | % Graduated |
|-------|-------------------|--------------------|-------|------------------------|-------------|
| 15-19 | 11,941 | 152,880 | 0.078 | 0.08457 | 80 |
| 20- | 30,796 | 135,280 | 0.228 | 0.21591 | 204 |
| 25- | 29,685 | 109,230 | 0.272 | 0.26242 | 248 |
| 30- | 19,778 | 92,640 | 0.213 | 0.23487 | 222 |
| 35- | 11,220 | 73,680 | 0.152 | 0.16436 | 155 |
| 40- | 6,579 | 58,070 | 0.113 | 0.08167 | 77 |
| 45+ | 113 | 44,750 | 0.003 | 0.01524 | 14 |
| | 110,102 | | 1.059 | 1.059 | 1,000 |

However, some anomalous features were observed in the age-specific fertility distribution. Chart 14 shows the age-specific fertility curve of the per cent distribution of the recorded and the graduated distributions of Table 16. Not only the mean of the distribution is very high - 29.78 years - but the shape of the distribution resembles the late peak type B of the high fertility models of the United Nations.

These model patterns of fertility, eight main types, were constructed analysing the fertility patterns of 72 countries with good quality statistics on marriage and fertility.

Most of the Latin American countries belong to the early peak type B and broad peak of the high fertility models. The Dominican Republic, although not showing a very low average age at marriage, has a very large proportion of consensual unions (over 60% of the recorded births are illegitimate). Had these consensual unions been taken into account, the mean age of childbearing would have been lower. Most of the late peak type B of the high fertility countries are associated with a rather late age at marriage. Due to the high birth rates prevailing in the Dominican Republic, a late peak fertility curve would indicate almost a "sui generis" case because the gross reproduction rates would have to be extremely high, i.e. the biological reproduction of women after 30 years would be unusually high to produce a Total Fertility Rate over 6.5.

As we are dealing with recorded births, the most plausible explanation is that the underregistration of births is "differential", i.e. the births not recorded are not evenly allocated to the proportion of births at each age. Most of the births not recorded must belong to women in consensual unions which are generally in their early childbearing period. Its effect on the age-specific fertility distribution would be to make the proportion of births at each age lower than it really is and, therefore, to raise the mean age of childbearing producing a late peak model.

Another attempt was made to estimate the shape of the age-specific fertility distribution using the Coale and Demeny fertility models based on the proportion of married women at each age. As the unstable forms of marital unions are very frequent in the Dominican Republic, both the recorded married women and women in consensual unions were used in the calculations.

A biased distribution was again obtained probably due to mistatement of "status" by Dominican women, i.e. most of them are reported as spinsters in spite of being in consensual unions and procreating.

As a result, it was decided first to assume that the shape of the age-specific fertility distribution in the Dominican Republic resembled the early peak type B of the high fertility models which includes two neighbouring countries of the Dominican Republic - Puerto Rico and Jamaica.

Gross Reproduction Rate

To obtain a first approximation of the Gross Reproduction Rate in the country, the recorded female age distribution in 1960 was matched with several stable population models using U.N. Levels 60 and 70. (The tables constructed by Carrier are for 10 levels internal). The comparison with the U.N./Carrier tables was made for the population under digite multiple of 5.

Table 16 shows the computed set of gross reproduction rates corresponding to the proportion of the population under each age.

Table 16

First Estimation of Gross Reproduction Rate
according to proportion of population under
each quinquennial age. (U.N. Model Stables)

Dominican Republic 1960

| Age | GRR (60) | GRR (70) |
|---------------|----------|----------|
| Under 5 years | 3.20 | 3.12 |
| " 10 " | 3.36 | 3.27 |
| " 15 " | 3.35 | 3.26 |
| " 20 " | 3.29 | 3.20 |
| " 25 " | 3.32 | 3.24 |
| " 30 " | 3.31 | 3.24 |
| " 35 " | 3.33 | 3.27 |
| C-14/15-44 | 3.37 | 3.27 |

The series of GRR's obtained is very regular. The last row presents the GRR's obtained interpolating according to the ratio of the population aged (0-14) to the population aged (15-44) years, which is considered a very sound indicator by Carrier.

On the basis of the GRR's obtained in Table 16, it was decided that the true value for the Dominican Republic must be in the neighbourhood of 3.3 representing a Total Fertility Rate of 6.765 per woman, on the assumption of a sex ratio at birth of 1.05 males per 100 females.

The estimated Gross Reproduction Rate obtained from Table 16 had to be adjusted because the mean of the fertility distribution used in the construction of the tables was of 28.71 years while the mean of the U.N. early peak (B) model was of 27.62 years.

The adjustment was made using Carrier's empirical correction formula multiplying the difference between the assumed mean and the mean used in the construction of the model stable populations by the rate of natural increase (% per annum) increased by one, dividing the result by 100 and adding 1. The resulting correction factor is multiplied or divided by the gross reproduction rate - to obtain the corrected GRR - if the difference between the assumed mean and the mean used in the tables is positive or negative.

Using the intercensal growth rate of 3.43% per annum as an approximation of the rate of natural increase, the first estimated GRR of 3.3 is reduced to 3.164. Using a sex ratio at birth of 105 males per 100 females, the resulting Total Fertility Rate is of 6.486 births per woman.

The following table shows the assumed model of age-specific fertility distribution (%) and the model based on a total fertility rate of 6.486 births per woman.

| Age | Model (%) | TFR = 6.486 |
|-------|-----------|-------------|
| 15-19 | 12.5% | 0.811 |
| 20-24 | 28.5 | 1.849 |
| 25-29 | 25.1 | 1.628 |
| 30-34 | 17.8 | 1.154 |
| 35-39 | 11.2 | 0.727 |
| 40-44 | 4.0 | 0.259 |
| 45-49 | 0.9 | 0.058 |
| - | 100.0 | 6.486 |

Multiplying the age-specific fertility distribution by the linearly interpolated average number of women of childbearing ages between 1950/55 and 1955/60 yields the following number of births:-

| Period | Births | | |
|---------|---------|---------|------------|
| | Males | Females | Both Sexes |
| 1950/55 | 290,379 | 276,550 | 566,929 |
| 1955/60 | 341,087 | 324,840 | 665,931 |

The male and female births were obtained on the basis of a sex ratio at birth of 105 males per 100 females.

As the registered births between 1950 and 1960 were approximately 998,247 (taking half of the births in 1950 and in 1960), the birth registration in the Dominican Republic appears to be only 80% complete.

Multiplying these births by the survival rates corresponding to the U.N. Model Life Tables Level 65, gives estimates of the number of children aged (0-4) and (5-9) years in 1960. The comparison with the registered and computed population at these ages gives an indication of the accuracy of our fertility model.

Table shows the comparison between the projected population (on the basis of the births computed from the fertility distribution), and the enumerated population at ages (0-4) and (5-9) years.

Table

Comparison between Projected and Enumerated Population
aged (0-4) and (5-9) years

| Age | Projected | | Enumerated | |
|-------------|-----------|---------|------------|---------|
| | 0-4 | 5-9 | 0-4 | 5-9 |
| Males | 291,868 | 236,514 | 283,060 | 246,630 |
| Females | 283,910 | 230,504 | 276,670 | 240,700 |
| Both Sexes | 575,778 | 467,018 | 559,730 | 487,330 |
| Total (0-9) | 1,042,987 | | 1,047,060 | |

As the enumerated population aged (0-4) years is smaller than the projected (the inverse situation appears in the (5-9) age group), the figures suggest overstatement of ages from the (0-4) to the (5-9) age group. The difference between the total population (0-9) years, less than 5%, is practically negligible.

The corresponding figures for the graduated data were:-

Graduated Data (from Models)

| Age | 0-4 | 5-9 |
|-------------|-----------|---------|
| Males | 301,203 | 230,373 |
| Females | 294,693 | 227,141 |
| Both Sexes | 595,896 | 457,514 |
| Total (0-9) | 1,053,410 | |

The figures suggest a stronger overstatement of ages than suggested by the projected births because the difference with the enumerated data is even larger. The population aged (0-9) years, although larger than the former ones, still differs by less than 1% from the others. The table suggest too that there was a systematic upward pushing not only from ages (0-4) to (5-9) years but from (5-9) to (10-14) years.

As the births and population aged (0-9) years generated by the fertility model is very close to the enumerated and the graduated data, the selection of an early peak type B, high fertility model seems correct especially considering that neighbouring countries with reliable statistics and rather similar ethnical composition and social customs show this pattern of fertility.

Birth Rate, Death Rate and Rate of Natural Increase

Two estimations of the Crude Birth Rate were made applying the method of reverse survival first using the registered population aged (0-4) and (5-9) in 1960 and second with the births obtained from the age-specific fertility distribution. The first estimate ranged between 46.94% and 49.20% and the second one produced values very close to 47.95%.

It was decided to take the latter figure which besides fell between the former ones.

Assuming that the intercensal rate of growth of 34.30% per annum was equal to the rate of natural increase of the population, the resulting Crude Death Rate would be of 13.67%.

Net Reproduction Rates and Intrinsic Rates of Natural Increase

These rates were computed merely for their usefulness in mathematical demography.

Three sets of stationary populations were used, the U.N. Level 65, Coale and Demeny Level 14, West and Brass (-0.25/0.8). These three sets of tables had a very similar overall mortality although their pattern with age was rather different. The sex ratio at birth used in the calculations was of 1.05 males per 100 females.

The results are resumed below.

Table 19

Net Reproduction Rate and Lotka's

| | U.N. | Coale/Demeny | Brass |
|--|---------|--------------|---------|
| Net Reproduction Rate | 2.5208 | 2.5014 | 2.4325 |
| Mean Length of Generation | 28.226 | 28.191 | 28.218 |
| Intrinsic Rate of Natural Increase (Lotka's) | 0.03377 | 0.03292 | 0.03179 |

The intrinsic rates of natural increase are very close to the intercensal rate of growth of 0.0343. These rates were used to construct several stable populations as mentioned in the last chapter.

PROJECTIONS

Two different sets of projections were carried out according to two assumptions about the future level of fertility in the Dominican Republic. On both projections, which were made separately for males and females, the same assumption concerning the future decline in mortality was used.

The principal assumptions were:

1. The future pattern of mortality resembled those of the United Nations Model Life Tables. This is a rather rigid assumption. However, no accurate information was available about the pattern of mortality by age, especially at young ages, in the Dominican Republic. Had this data been available, the L and B system of Model Life Tables evolved by Brass could have been used.

2. The overall level of mortality remained constant in the 1960/1970 decade, i.e. U.N. Level 65. Afterwards the expectation of life at birth increased by 5 levels every five years.

3. Instead of using a GRR of 3.164 and a low peak B fertility model, a GRR of 3.3 and a fertility model interpolated between the low peak type B and the broad peak of the U.N. high fertility models was used at the beginning of the period. As the number of births generated by both models is almost exactly the same (the used model yields 1,244,922 births in the decade as against 1,232,860 births produced by the low peak model) the population projected using these models is almost the same. The population (0-9) years in 1960 generated by the interpolated model is equal to the graduated population, i.e. 1,053 thousands. A constant fertility was assumed in the first projection and a declining fertility, from a GRR of 3.3 in 1960 to a GRR of 2.0 in 1990/95, was used in the second projection. No decline in fertility was used in the second projection between 1960 and 1970. The interpolated fertility model was linearly converted into a low peak type B model between 1960 and 1990/95. The fertility level was assumed to stabilize in 1990/95 with a GRR of 2.0.

The projections were carried out projecting five year age groups for five year periods from 1960 to the year 2000.

Table 20 shows the comparison for the year 2000, for females only, of the projected population according to the constant and the declining fertility assumptions.

Table 20

Projected Female Population (Year 2000)Dominican Republic

| Age | Constant Fertility | Declining Fertility |
|-------|--------------------|---------------------|
| 0- | 1,334,486 | 776,338 |
| 5- | 1,074,164 | 649,454 |
| 10- | 871,305 | 606,822 |
| 15- | 703,671 | 630,647 |
| 20- | 564,089 | 479,666 |
| 25- | 454,512 | 420,563 |
| 30- | 368,074 | 368,074 |
| 35- | 319,477 | 319,477 |
| 40- | 246,861 | 246,861 |
| 45- | 201,195 | 201,195 |
| 50- | 162,338 | 162,338 |
| 55- | 129,064 | 129,064 |
| 60- | 100,338 | 100,338 |
| 65- | 74,600 | 74,600 |
| 70- | 51,588 | 51,588 |
| 75- | 31,520 | 31,520 |
| 80- | 15,978 | 15,978 |
| 85+ | 6,740 | 6,740 |
| Total | 6,710,050 | 5,271,313 |

It can be seen from the table that the effect of a decline in fertility after 1970 has the effect of reducing the first six age groups as compared to the first population.

All the remaining age groups are the same on both projections. However, the effect of the assumed reduction in fertility has a significant effect on the total projected female population, which is reduced from over 6-1/2 million to just over 5 million.

In Table 21 a summary of the projections carried out is presented indicating the total population (both sexes) for each quinquennial year and its index, taking as 100 the population in 1960.

Table 21

Total Projected Population. Both Sexes. 1960/2000Dominican Republic

| Year | Constant Fertility | Declining Fertility | Constant Fertility | Declining Fertility |
|------|--------------------|---------------------|--------------------|---------------------|
| 1960 | 3,047,070 | 3,047,070 | 100 | 100 |
| 1965 | 3,649,628 | 3,649,628 | 120 | 120 |
| 1970 | 4,314,350 | 4,314,350 | 142 | 142 |
| 1975 | 5,139,280 | 5,065,673 | 169 | 166 |
| 1980 | 6,168,194 | 5,917,420 | 202 | 194 |
| 1985 | 7,460,242 | 7,061,980 | 245 | 232 |
| 1990 | 9,072,673 | 8,130,313 | 298 | 267 |
| 1995 | 11,074,081 | 9,268,111 | 363 | 304 |
| 2000 | 13,571,915 | 10,642,276 | 445 | 349 |

As in the Dominican Republic no family planning programme has so far been applied, it is reasonable to assume that no fertility decline will take place before 1970. The effect of a decline of fertility, according to our assumption, starts to have a significant effect after 1985, i.e. when the first generation of female births reach the child-bearing ages and start reproducing. By the year 2000, only 33 years away, the population of the Dominican Republic, according to the two sets of projections, reaches the figure of between 10.6 to 13.5 million people.

If the mortality does not decline at the assumed level, then the totals of the projected population will be slightly lower, and vice versa if its decline at a faster trend.

The density of the population in the Dominican Republic in the year 2000, according to the two assumptions, will vary between 270 and 211 inhabitants per square kilometer.

It is felt that the effect of population pressure, which has just started to manifest itself in the Dominican Republic, will reach considerable proportions in the coming years unless effective measures to control the population growth are taken.

Chart 16 shows the population pyramid in the year 1995 for the projected population.

While the constant fertility graph presents a wide base, characteristic of high fertility countries, the declining fertility graph presents a "contracted" base approaching the shape observed in highly developed countries.

Chart 17 shows the curve of population growth. From its shape, it can be inferred that it is just starting the "take-off" period, i.e. the beginning of the rising trend as compared to a logistic curve, or the "early expanding" stage according to Blacker's classification.

Apart from mortality, the two assumptions concerning the future level of fertility of the population represent two extremes. If the trend of declining mortality resembles the assumed one, the future population is very likely to fall between the two set of projections, apart from the possible effect of migration, war, famine and severe epidemics which has not been taken into account.

Future and more accurate data, especially about the pattern of mortality in the country, will enable to make more elaborate projections. It was felt that no accuracy would have been attained using more refined methods of projection.

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