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9. ABSTRACT

The American Public Health Association, under a contract with the Agency for International Development, has designed a program in public health improvement which is called the Development and Evaluation of Integrated Delivery Systems (DEIDS). The activity is designed to assist countries to demonstrate how to establish health delivery systems within seven years. Such projects include, but are not limited to, Maternal and Child Health and Family Planning and Nutrition. The projects are to cover large populations in predominantly rural areas. They are to utilize in-country resources for the service component, although external assistance organized by DEIDS is available for planning, evaluation, training, and limited amounts of essential equipment. It is expected that successful health delivery systems can be subsequently replicated in the country or in the region.

These are phases through which DEIDS projects proceed:

a) Phase I -- reconnaissance within a specific country or region, to gather information about disease patterns, health services as currently organized, local resources, cultural aspects, community involvement, the potential for integration of various parts of public health, opportunities for innovation, current and potential staffing, training, supervision, emphasis upon preventive services, outreach, cost, and evaluation

b) Phase II -- Detailed planning. This phase begins if the survey in Phase I recommends it, and involves experts from the host country as well as experts assigned by DEIDS.

c) Phase III -- Pilot Project Operations, which continue for as long as eight years.

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PROPOSAL FOR DEVELOPMENT AND EVALUATION OF AN INTEGRATED DELIVERY SYSTEM (Health, Family Planning and Nutrition)- "DEIDS" in Ecuador

This proposal is submitted by the American Public Health Association under Contract AID/csd-3423

March 12, 1974

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I. PREFACE

The Ecuadorean Ministry of Health is prepared to institute an innovative integrated program which will demonstrate the feasibility of providing acceptable and effective health services to rural populations at a nationally affordable cost. Efforts will focus on two critical groups, young children and women of fertile age, with a goal of providing services to 66% of the target groups in the selected area of southern Ecuador. Over eighty percent of the people of Cañar Province, the initial project site, lack access to even minimal health services. Optimal combinations of preventive and curative services will be sought, with particular emphasis on three areas of great importance to the health of the target groups: nutrition, family health services, and family planning. The ultimate goal of the project is the adoption of this integrated approach to the delivery of health services throughout rural Ecuador and elsewhere, following successful demonstration in the project area.

Innovative aspects of the program include active involvement of rural communities and the extensive use of specially trained rural health workers selected by and from their own rural communities and trained near them. These components of the program will bring acceptable services and information to the people in their own homes. These innovations and the need to minimize costs necessitate reassignment of some tasks among the various categories of health workers, as well as certain reorganizations within the Ministry's system of provincial and local health services. The reorganizations will be necessary in order to train and provide supervision for the new health workers and to integrate them and their efforts into the overall health service program.

The plan for this program has been developed by Ministry of Health personnel and technical consultants from the University of California at Los Angeles, under the American Public Health Association's contract with the Agency for International Development for the Development and Evaulation of Integrated Delivery Systems in Health, Nutrition and Family Planning (DEIDS). The plan is based on Ecuador's experiences with rural health problems and with the difficulties encountered in attempting to resolve them in normal Ministry of Health Programs and in a number of special projects. The planners benefited

from the experiences and suggestions of professionals from the various disciplines and agencies which must be involved in developing a workable integrated rural health program. Examinations of previous and current health and health-related projects and studies in Ecuador, including several of very direct relevance to the provision of rural services in health, nutrition and family planning, indicate a high probability that this program, with adequate support, will achieve the desired improvements in rural health and simultaneously answer a number of questions pertaining to rural health services. Community input was obtained by means of meetings held in rural communities with the people and their leaders.

The DEIDS Project will provide assistance to the government of Ecuador in implementing this program by providing consultative assistance, particularly in training and evaluation. A key evaluative component will be cost analysis to determine the economic feasibility of using similar programs to improve the health of the people of other areas of rural Ecuador, in keeping with the strong commitment of the Ministry of Health to the betterment of rural health.

II. SUMMARY

This proposal for a DEIDS (Development and Evaluation of an Integrated Health Delivery System) Project in Ecuador was prepared as a result of activities during the Planning Phase. The Minister of Public Health of Ecuador set up a Planning Committee, which included all the Directors of the service arms and other senior officials of the Ministry at the national and regional levels. This Committee, with the advice of the Technical Council of the Ministry laid down the guidelines for the project in accordance with the objectives of the Five Year Health Plan of Ecuador. Consultants from the University of California, Los Angeles joined this Committee in the planning sessions, traveled widely in the country and held extensive discussions with Ministry officials at all levels, other health personnel in the country and various community groups in the project area. The plan that emerged was formulated in Ecuador and represents all these points of view.

A summary of the proposal follows.

The Rationale provides the background on Ecuador of general information, health status and problems, the project's strategy for tackling the problems and the course of action. However, more detailed background information is available in the appendices.

The Narrative Account is an elaboration of the Logical Framework Matrix and the headings follow closely those in the matrix. There is also a section on Evaluation of the Project.

The following are the major factors affecting health problems which have rendered ineffective previous attempts at health services delivery to the rural areas:

(a) Lack of:

An adequate organization to administer an effective health delivery system to the remote areas

Trained health personnel

Effective supervision at all levels of personnel who render service

Health facilities to serve as a base for the services

Medicines and other materials

Preventive health services

Transport and communication facilities

Integration of health services into the culture of the rural inhabitants

(b) Malnutrition due to lack of:

Adequate production of nutritious foods

Food storage and distribution facilities

Economic resources to purchase adequate nutrients

Liberal land tenure practices

Nutrition education to teach people to make the best use of available foods.

(c) High Population Growth Rate. The annual rate of natural increase of Ecuador is about 3.4% and the rate of economic growth cannot be expected to match this rate of population growth. Therefore, at the present rate of population growth, any gains that would have resulted from increased health resources may be offset by the number of people to share them.

(d) Lack of Environmental Sanitation. Many of the causes of death and illness are largely preventable by improvement in environmental and personal sanitation. However, they persist because of lack of:

Potable water

Adequate waste disposal facilities

Adequate housing and protection from the climate

Health education

The Ministry of Public Health is committed to the extension of health services to the rural areas. It has taken the following steps in this regard:

(a) A separate Department of Rural Health was set up in the Ministry in 1969 and charged with the responsibility for the extension of health services to the rural areas.

(b) The Ministry has embarked on a process of decentralization and regionalization of services aimed at more effective administration of the program for delivery of services to the remote areas. Although this process still has a long way to go, the initial steps have been taken.

(c) A decree was promulgated in 1970 making it mandatory for all graduating doctors and nurses to serve for one year in a rural health subcenter.

(d) Incorporated into the current Five Year Health Plan the "Promotores de Salud" program, which has as its basis the use of health workers to deliver services at the community level.

There have been several attempts made to extend health services to the rural areas of Ecuador. These efforts relied mainly on auxiliary nurses delivering services in health subcenters, but in most cases the attempts were on a limited scale and not sustained. Furthermore, there are very few health subcenters and no outreach services from those existing subcenters.

Family planning services in Ecuador were first set up under the auspices of the International Planned Parenthood Federation, but these are still confined to the main cities. The Ministry of Public Health has established a Department of Population with the assistance of USAID, which has as one of its objectives the extension of family planning services to the rural areas. The Department has supplied family planning materials to some rural clinics, but the effectiveness of services has been hampered by: the lack of a service

infrastructure for delivery, inadequacy of trained personnel, lack of motivation and education.

There is a wide variety of attitudes about family planning programs in the country. The government regards family planning as a component part of the basic health services. The community groups in the project area had little difficulty with the integrated approach to family planning. The status of family planning services was given in a report of a USAID-sponsored evaluation in August 1973.

Nutrition activities in the rural areas have consisted mainly of sporadic supplies of supplementary foods from CARE for young children, regardless of their nutritional status. The National Nutrition Institute in Quito has compiled food composition tables for most of the available foods, but has not been active in the field of applied nutrition. It is currently being re-organized and has become involved in a pilot program of nutrition education by radio, employing modern advertising techniques set up by Manoff, Inc., under a USAID-sponsored contract. Furthermore, the Office of Nutrition, Technical Assistance Bureau, USAID, using Ecuador as a case study, published a document in March, 1973 on Planning Nutrition Programs. The report suggested an interministerial and inter-disciplinary approach in the formulation of a National Food and Nutrition Policy. Because of the interrelationship between health, nutrition and population, the report advocates a coordinated approach both in planning and execution of programs.

Due to the national focus on rural health and the necessity for integration of health services, the Government of Ecuador expressed strong interest in the DEIDS project. The site designated for the project is in the Southern Health Region of the country, starting from Cañar Province and extending into Azuay and Loja Provinces. The three provinces have an area of 9,270 square miles, a population of about 850,000 and is about 85% rural. The area is partly in the highland and partly in the coastal geographical belt, and represents a cross-section of the people and health conditions of Ecuador.

The main objective of the project is to develop an integrated infrastructure that will effectively deliver health services, including maternal and child health, family planning, nutrition and environmental health services, in a form that would be acceptable to at least 65-70% of mothers and young children in the project area.

In order to achieve this, the project will institute the following innovations:

1. Encourage the setting up of community organizations.
2. Each community of 1,000-1,500 inhabitants will be required to select from amongst them a candidate for training as a community health worker.
3. Four project training teams will simultaneously train 15 candidates each in the locale where they will ultimately work. This training is envisaged to last about six months.
4. Each community will establish a health post for the community health worker in a building provided by the community and initially the project will assist in the provision of medicines and equipment.
5. The community health worker will be supervised by the health sub-center staff.
6. The community health worker at the post and through home visits and Mothers' Clubs will deliver to the mothers and young children the following services:

(a) Maternal and Child Health Services

(i) Counselling on child health and child rearing

(ii) Minor curative and first aid emergency services

(iii) Immunization

(iv) Prenatal and postnatal services

(v) Midwifery services for the uncomplicated cases

(vi) General health education

(vii) Registration of births and deaths

(viii) Referral to the health subcenters

(b) Family Planning services:

(i) Family planning information and motivation

(ii) Dispensing of the desired contraceptive method possible in the home or health post

(iii) Referral to the health subcenter for the more complicated procedures

(iv) Follow-up of acceptors

(v) Continuing review of the non-acceptors

(c) Nutrition services:

(i) Nutrition counselling and education

(ii) Curative services for patients with malnutrition

(iii) Monitoring of the nutritional status of the "at-risk" groups, through weight charts

(iv) Promotion of breast feeding

(v) Counselling on infant weaning using low-cost locally available high protein-calorie vegetable multimix

(vi) Influencing the agricultural practices of the community through demonstration low-cost home gardens

(d) Environmental Health Services:

(i) Environmental sanitation information

(ii) Personal hygiene information

(iii) Advice and assistance with latrine construction

(iv) Methods for rendering drinking water safe

7. Reorganization of the Provincial Office and Health Subcenter Systems, retraining of personnel and reassignment of tasks, if indicated, in order to carry out the project requirement.

8. Establishment of a standardized health information and vital events registration system.

9. Establishment of an evaluation unit at the Provincial Health Office level to monitor the health services and provide rapid feedback for better management.

10. Evaluation of the total project and its integral parts to assess cost-effectiveness and provide the basis for replication of the project throughout the country. The results of the DEIDS Project may preclude the need for the much more expensive health posts (Puestos minimos de Salud), at a cost of about $15,000 each, now contemplated in the Five Year Health Plan.

The DEIDS Project plan aims at the following end of project status in its area of operation:

1. More efficient Provincial Health System through the development of administrative and managerial skills in the Provincial Health Office:

   (a) Establishment of a program for training and re-training of personnel at all levels of service

   (b) Integration of all levels of personnel into planning and programming

   (c) Establishment of an effective system of budgetary programming and auditing

   (d) Effective decentralization and regionalization of health services

   (e) Establishment of effective personnel administration and supervision at all levels

   (f) Cooperation and coordination with other health providers, including traditional health practitioners

   (g) Integration of the communities in the process of health planning programming and evaluation

2. Establishment of an effective evaluation unit in the Provincial health system by developing:

   (a) Trained evaluation staff

   (b) A uniform health information system for data collection in the subcenters and community health posts

(c) Rapid data processing facilities and provision of feedback information for planning and management

3. Reorganization of the rural health subcenter to achieve more effective and efficient services:

(a) Provision of job descriptions and training and re-training programs in order to improve the standards of services offered

(b) Establishment of adequate supervision of community health workers by the staff of the health subcenter

(c) Provision of referral services for the community health workers

(d) Coordination of medicines and supplies for the community health workers

(e) Greater emphasis on preventive and promotive health services

(f) Increase in the scope of services at the health subcenter to include family planning, nutrition and environmental health services

4. Through the establishment of a network of about 720 community health workers operating in health posts and by home visits, workers reach 65-70% of the mothers and young children of a population of about 850,000 with the following services:

(a) Counselling on child health and child rearing

(b) Prenatal, postnatal, and midwifery services

(c) Family planning information, motivation and services, including follow-up

(d) Counselling on nutrition, infant feeding, weaning practices and curative services

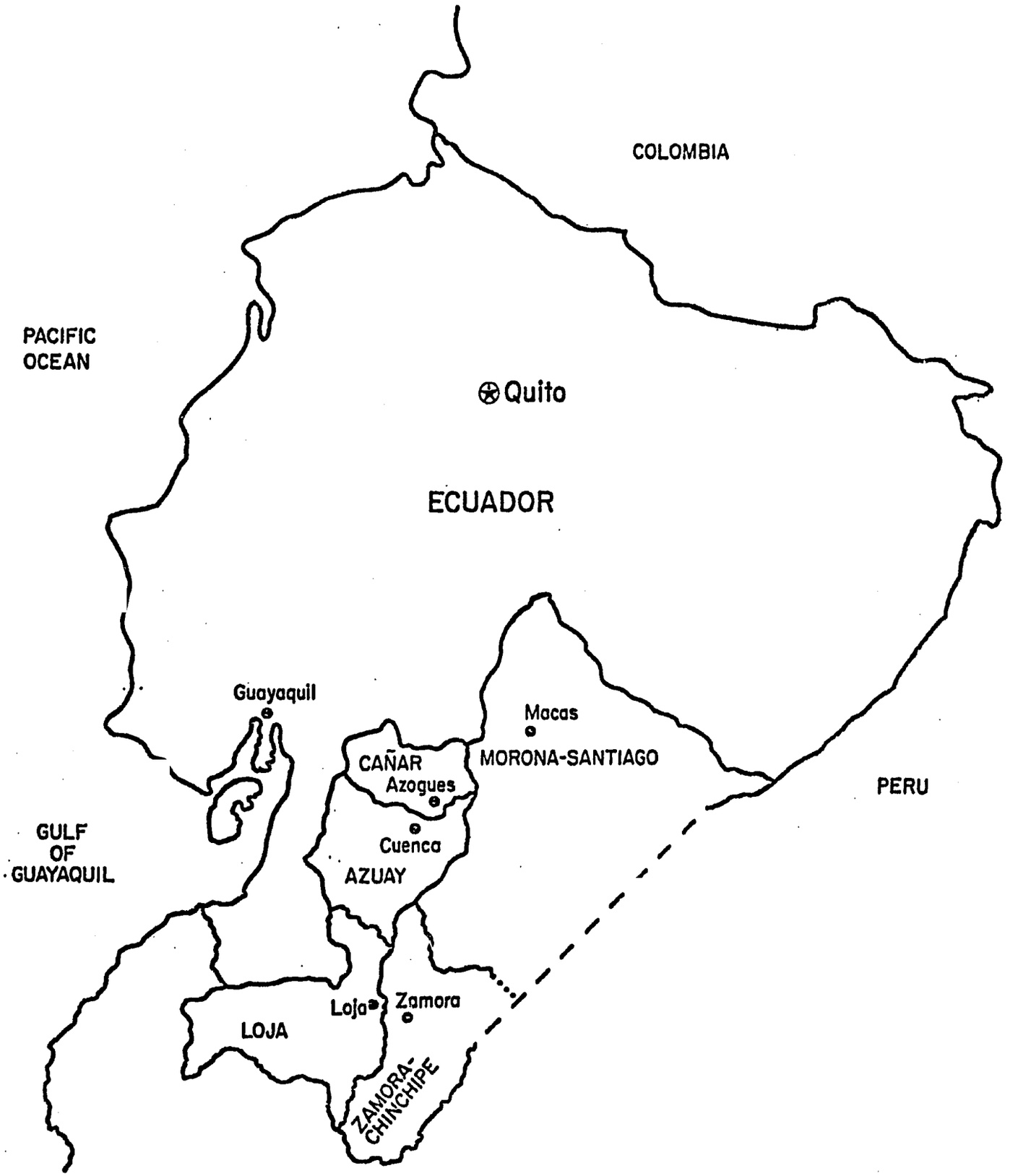
(e) Advice and assistance with environmental health activities, including latrine construction

(f) Minor curative and first aid emergency treatment

(g) Referral to health subcenters for problems

III MAPS OF DEIDS EXPERIMENTAL AREA

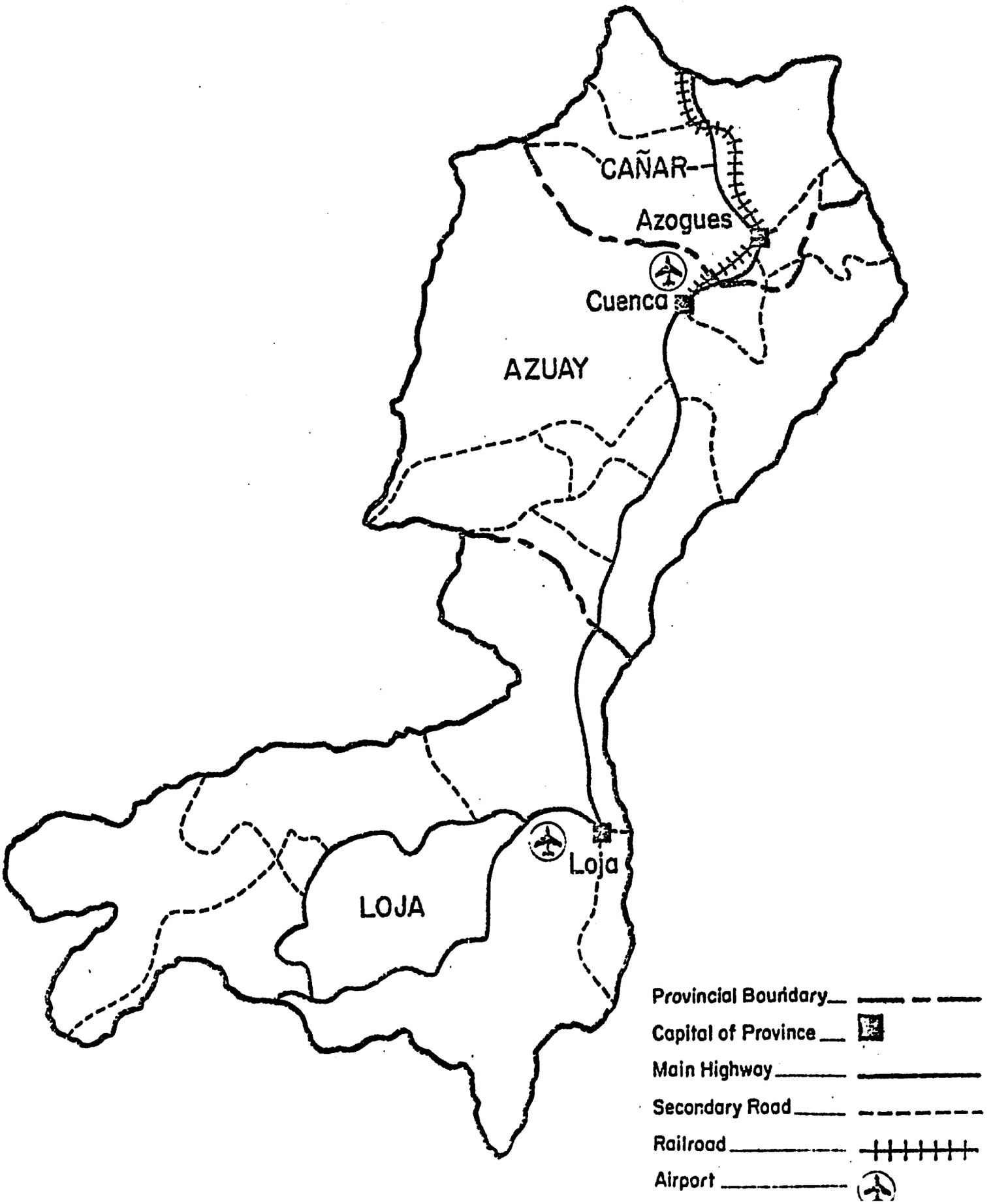
MAP OF ECUADOR

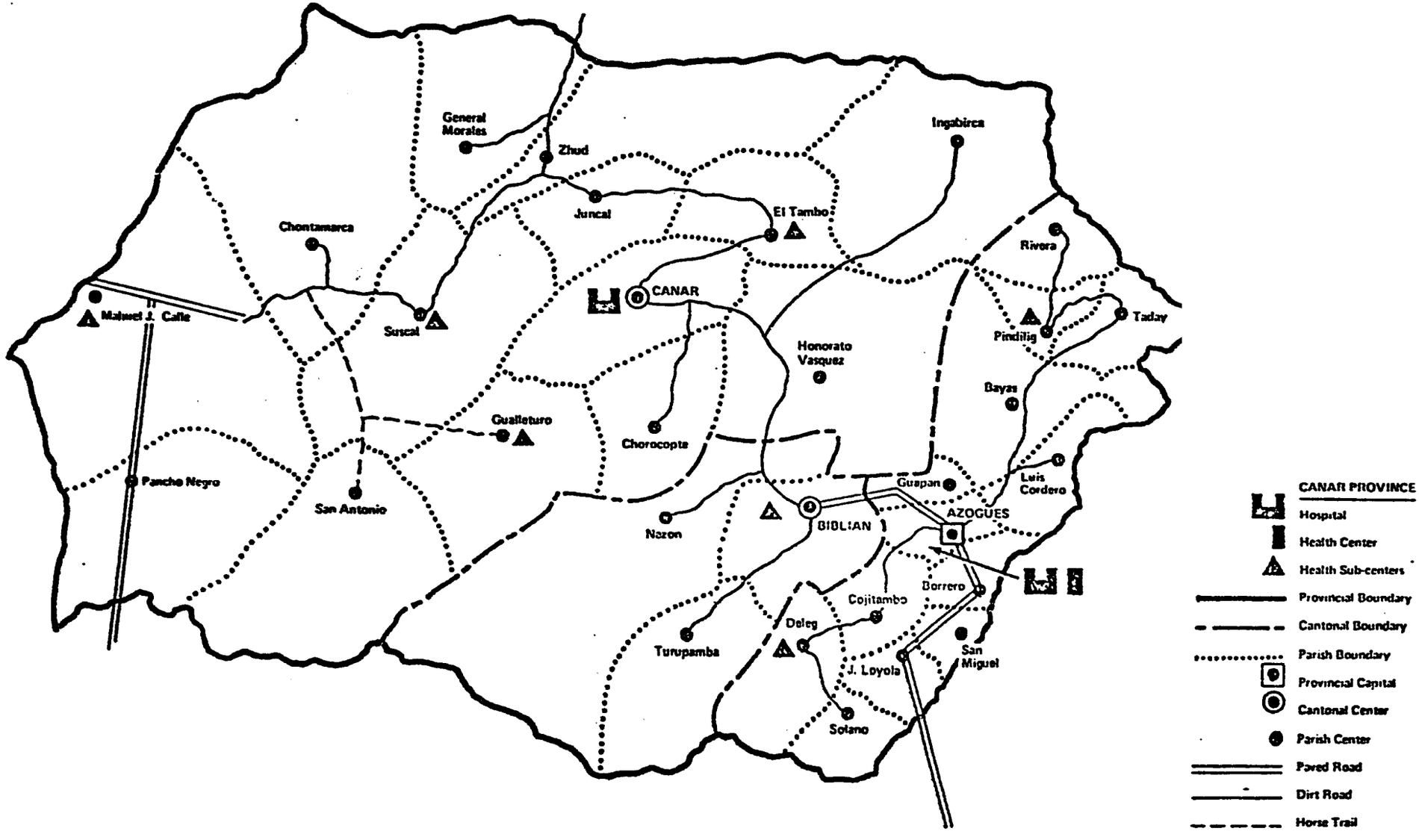


NAMED PROVINCES = SOUTHERN HEALTH REGION

DEIDS PROJECT AREA:
PROVINCES OF CAÑAR (Initial Project Site)
AZUAY
LOJA

DEIDS PROJECT AREA




General Morales
Zhud
Ingabirca
Juncal
El Tambo
Chontamarca
Rivera
CANAR
Manuel J. Calle
Suscal
Taday
Pindilig
Honorato Vasquez
Bayas
Gualleturo
Chorocopte
Luis Cordero
Guapan
Pancho Negro
San Antonio
AZOGUES
BIBLIAN
Nazon
Borrero
Cojitambo
Deleg
Turupamba
San Miguel
J. Loyola
Solano
CANAR PROVINCE
Hospital
Health Center
Health Sub-centers
Provincial Boundary
Cantonal Boundary
Parish Boundary
Provincial Capital
Cantonal Center
Parish Center
Paved Road
Dirt Road
Horse Trail

IV RATIONALE

A. General Information

Ecuador, with an area of 104,506 square miles and a population of 6.5 million, is the second smallest republic in South America. It is situated in the northwestern part of the continent, bounded on the west by the Pacific Ocean, on the north by Colombia and on the east and south by Peru. The lofty Andes traverse the country from north to south, providing a spectacular galaxy of snow capped peaks right on the Equator.

Ecuador has four main contrasting geographical regions:

1) The Coast (coastal plain) stretches from the Pacific Ocean to the Andes. Most of the country's export crops are grown in this rich, humid tropical agricultural belt. The region contains one-quarter of the country's area, but almost one-half of the total population.

2) The Sierra (highlands) lies between the two ranges of th Andes, the Western and Eastern Cordilleras. The intermontane plateau, 8,000 to 10,000 feet above sea level, and about 400 miles long by 5 to 8 miles wide, is inhabited by clusters of people, who, apart from the urban concentrations of population, are largely isolated by the difficult terrain and lack of communication facil ties. Nearly one-half of the country's inhabitants live in the Sierra. The altitude tempers the climate, so that temperatures range from about 45° F to 70° F.

3) The Oriente (eastern jungle), comprising about half of the country, slopes gently east of the Andes. There are dense tropical jungles and flat valleys along the tributaries of the upper Amazon basin. The area is very sparsely populated and largely inaccessible, although the recent discovery of petroleum deposits in this area will undoubtedly change the picture.

4) The Archipiélago de Colón (Galápagos Islands), situated in the Pacific Ocean 600 miles off shore, have an area of about 3,000 square miles. These islands contain many unusual animals, including the almost prehistoric giant tortoises. The islands are fast becoming a strong tourist attraction, but have few inhabitants. The coastal waters of Ecuador are rich in a variety of fish of great commercial value.

The striking contrasts between the two main populated areas, the coast and the Sierra, are clearly shown in the chart on the following page.

The area selected for the DEIDS project (shown on the map) consists of three adjacent rural provinces in the southern region, basically in the Sierra, but extending also into the coast.

Communications between regions were very poorly developed until recently. Railroads connect Guayaquil, Quito and San Lorenzo on the northern coast. Highways run from the Sierra to several places on the coast, and only to a few places in the Oriente. These places represent the main centers of population. The smaller settlements are only accessible in the Sierra by horse trails and in the Oriente and Costa by pack trails on foot and in some cases by light aircraft.

In 1971, the population of Ecuador was estimated as 6,500,000, with an average of 57 persons per square mile. About 50% of the population is Indian, 10% "white," 10% Negro or mulatto, the remainder mestizo (mixed). The Indians live primarily in the Sierra, "whites" in the provincial capitals, almost all Negroes and mulattos on the coast. About 65% of the population live in rural areas.

Contrasts between the Coast and the Sierra

Characteristic	Sierra	Coast
Racial Composition	Mostly Indian, with some Whites and mestizos in provincial capitals	Little Indian and significant Black strains added to Whites and mestizos
Language	A significant portion speaks only Quechua	Almost all speak Spanish
Social Structure	Rigid class lines	Much more mobility
Elite	Traditional, land-holding	Businessmen, exporters, bankers, richer than in Sierra
Religions	Catholic stronghold	Much less religious
Economy	Mostly subsistence agriculture	Mostly export agriculture
Politics	Conservative	Liberal, anticlerical
Climate	Mountains, temperate	Lowlands, tropical

The official language of Ecuador is Spanish. Many people are bilingual, speaking Quechua, the language of the Inca Empire, as well. A significant minority especially in the Sierra, speaks Quechua exclusively.

Ecuador has a predominantly agricultural economy. The crops are very diverse. The Sierra produces grains, root crops and livestock for internal consumption. The Coast produces tropical cash crops for export - bananas, cacao and coffee. Efforts are under way to liberalize the near-feudal system of land holding by a series of agrarian reforms.

Economically and socially, Ecuador is one of the lesser developed countries of latin America. The Gross National Product per capita in 1970 was estimated at $240. The total foreign exchange earnings of the country are about $240 million but the expanding petroleum industry will substantially increase this. The average per capita income in 1970 was estimated at $278, but in many rural areas it is less than $80. About 33% of the population is gainfully employed. About 53% of the population is under 12 years producing a very high dependency ratio of over 1.0.

More than half of the country's people lack the basic economic goods and social services.

The annual population growth rate of 3.4% is one of the highest in the world. At the present rate, the population size is expected to double in about 20 years. The economic growth rate cannot be expected to keep pace with this high rate of natural increase; and thus the results of the efforts made to improve the health service and other services are being diluted.

The illiteracy rate in the country is about 68%. Although much effort is directed towards education, which is compulsory between the ages of 6 and 12 years, attendance is affected by availability of schools and teachers and by a high drop-out rate. Effective education reaches only about 57% of the children nationwide, even less in rural areas. Public schools are free and there are seven universities, four with medical schools. At present, radio is the most effective channel of information.

The Catholic Church holds an eminent position in the Sierra in the social and economic life of the people. It also has some political strength, because the parish priest is often seen as the temporal as well as spiritual leader in the remote rural areas. The influence of the Church on the Coast is not as strong.

For administrative purposes, the country is divided into nineteen provinces, each subdivided into a number of cantones (counties), and these are in turn divided into parishes. The Galápagos Islands, regarded as the twentieth province, are administered as a separate entity by the Ministry of Defense. Each province is headed by a nominated Governor and an elected Prefect.

The country has had a checkered political history, sometimes characterized by frequent changes in government, with accompanying changes of civil servants in all sectors. Personalism and regionalism, with long-standing rivalries between the traditional elite of Quito and the moneyed elite of Guayaquil, have contributed to instability. Many feel that the military can transcend these disruptive factors.

After more than two decades of relative political stability in Ecuador, a military junta of four men assumed power in 1963. It ruled by decree within the framework of the Constitution of 1946. In 1967 a new constitution was drafted and presidential and congressional elections were held in June 1968. The elected president, due to internal problems, again set up dictatorial rule in 1970 and in 1972 was ousted from the presidency by the military, which is now running the country. A four-man board, composed of the chiefs of the Army, Navy and Air Force and headed by a President, is the executive body. Military rule in Ecuador historically has been relatively mild and has actually brought about several social reforms, such as the agrarian reform law of 1964.

B. Health Status and Problems

Public health efforts in Ecuador have made remarkable progress through national efforts and international cooperation. Among the major achievements were the eradication early in the 20th Century of yellow fever and the later eradication of yaws and smallpox. Considerable progress has been made in controlling malaria which caused 25% of all deaths as late as 1942. Public

health measures have been instituted to control tuberculosis, venereal disease, typhus and plague. In spite of these important accomplishments, many serious health problems remain unresolved, particularly in the rural areas where most of the people live.

The health situation in rural areas is, in general, worse than in the cities. The highest infant, child and maternal mortality rates, for example, are found in the Sierra.

1. Principal Causes of Mortality and Morbidity

Ecuador has high infant, young child and maternal mortality rates, as shown in the table below:

Official Health Statistics for Ecuador, 1969*

General mortality	10.9/1,000 population
Maternal mortality	2.3/1,000 live births
Perinatal mortality	29.3/1,000 live births
Infant mortality	91.0/1,000 live births
1 - 4 age group mortality	16.6/1,000 in age group
Under 5 age group mortality	30.7/1,000 in age group
Percentage of total deaths in the under five age group	52.79%
Percentage of deaths due to infectious diseases	48.21%
Percentage of deaths due to ill-defined causes and senility	21.3%
Percentage of deaths without medical certification	57.98%

Some progress has been made in the reduction of mortality rates through various general public health measures and through the establishment of some maternity hospitals and child health clinics in Guayaquil, Quito and a few of the larger towns. However, the only practical responses to these problems must focus on their prevention, which requires bringing information and services to the people who need them in a way which will lead to their acceptance.

The causes of these appalling health problems are to a great extent remediable or reducible. Parasitism and diarrhoeal diseases (such as gastroenteritis), as well as malnutrition and anaemia, are given as the leading

*Source: Ministerio de Salud Publica, Proyecciones Cuadrienales.

causes of death. Respiratory diseases, communicable and infectious diseases, complications of pregnancy and delivery, and high fertility are listed as leading causes of morbidity.

2. Major Factors Responsible for Rural Health Problems

The major factors responsible for the health problems of the rural areas are malnutrition, the absence of environmental sanitation, the lac or inadequacy of health services, and the high population growth rate.

a. Lack of health services

The inadequate coverage, both in quantity and quality, with health services of the rural areas is due mainly to deficiencies in:

1) Administrative infrastructure designed to deliver health services to the remote areas.

2) Trained health personnel to deliver the health services.

3) Adequate and effective supervision of health services at all levels.

4) Health facilities, where health activities will be based.

5) Medicines, equipment and other materials for health services.

6) Emphasis on preventive health activities.

7) Communication and transportation facilities to the remote areas.

8) Integration of health services into the culture of the rural inhabitants in order to increase the chances of acceptance.

b. Malnutrition

Although Ecuador is blessed with rich agricultural land capable of an immense variety of produce, malnutrition is rampant. The diet of the majority of the population is not only deficient in proteins, vitamins and minerals, but also low in calories. Over one-half of the population has a daily caloric intake of less than one-half the recommended minimum. The typical diet of Indians is high in carbohydrates, low in fats, proteins and some minerals, with certain vitamins virtually absent. In national nutrition surveys, over one-third of th

children have been found to be malnourished. A 1969-1970 survey found that goiter affected almost 30% of the 5 - 14 age group in the Sierra.

The lack of roads to open up new food-producing areas, the low level of education, bad food habits and low standard of sanitation contribute to malnutrition.

Some of the factors responsible for the widespread malnutrition are deficiencies in:

1) Adequate production of nutritious foods.

2) Storage and distribution facilities

3) Sufficient economic resources at the peasant-farmer level to purchase adequate nutrients.

4) Liberal land tenure practices.

5) Nutrition education to teach people how best to use available foods, especially for the benefit of the groups at greatest risk, such as young children during and after weaning.

6) Education to circumvent cultural factors, such as food habits and taboos.

7) Environmental sanitation, to reduce the synergistic effects of infectious and parasitic diseases.

c. Lack of Environmental Sanitation

Many of the causes of death and illness are largely preventable by improved environmental and personal sanitation, but they persist due to lack of:

Potable water (less than 8% of all rural dwellers have house iections or easy access to potable water.)

2) Adequate waste disposal facilities (less than 1% of all rural dwellers have home sewage connections or latrines.)

3) Adequate housing and protection from the climate, which is quite severe at higher altitudes.

4) Health education on personal hygiene and environmental sanitation.

d. High Population Growth Rate

The annual rate of natural increase of 3.4% cannot be matched by the current and expected rates of economic growth. Therefore, at the present rate of natural increase any gains that would have accrued from increased health resources and activities will be more than offset by the increased number of people sharing them.

Rapid population growth also aggravates the already-critical national nutritional situation. Similarly, it compounds the problems of supplying environmental sanitation and further overburdens the educational system. Furthermore, the negative health effects of a rapid succession of births upon the infant, its siblings, and the mother is well known.

C. Health Services

1. Formal Health Personnel: Numbers, Distribution and Training

Shortages and maldistribution of health personnel are among the conditions contributing directly to the low levels of health in Ecuador, especially in rural areas. In 1970, only 7.9% of the country's physicians resided in rural areas, an extreme example of maldistribution. There is a severe shortage of graduate nurses.

Numbers of personnel and degrees of urban concentration for various categories of health workers are presented below in tabulor form.

Table 5: Personnel in the Health Sector, 1969 or 1970

Category and Year	Number	1969 % in Quito and Guayaquil	Number/ 10,000
Physicians (1970)	2,089	61.7%	3.36
Dentists (1970)*	253	66.1%	0.40
Pharmacists (1970)	46	?	0.07
Lab technicians (1970)	186	70.0%	0.30
Hospital nurses (1970)	432	?	0.69
Health inspectors (1970)	161	47.2%	0.26
Nursing personnel (1970)	(90% in urban areas)		
Nurses (1/6 graduate)	601		0.97
Aides (55% without formal training)	3,119		5.02
Social workers (1970)	109		0.17
Sanitary engineers (1969)	32	100.0%	0.05
Veterinarians (1969)	240	58.3%	0.40
Nutritionists (1969)	12	75.0%	0.02
Midwives (1969)	300	76.6%	0.50
Health educators (1969)	0		
All type dental aides (1969)	0		
Physical therapists (1969)	18	100.0%	0.03

*On page 16, the health plan states that there are 0.4 dentists/10 000 population. On page 86 of the same document, states that there are 1.0 dentists/10,000 population in the country and 0.15 dentists/10,000 in rural areas

(a) Physicians

There are about 2,000 physicians in Ecuador, a ratio of 3.3/10,000 population, the greatest concentration being in Quito and Guayquil. In localities of less than 100,000 inhabitants, the physician/population ratio falls to 1.6/10,000. There are only 150 physicians in all rural area and most of these are the recent graduates doing their compulsory year of rural practice. There is a significant brain-drain of physicians from Ecuador to other Latin American countries and to the U. S.

The three oldest medical schools of Ecuador, in Quito, Guayaquil and Cuenca, graduate about 120 physicians a year. A fourth school, in Loja, has not yet graduated its first class. The curriculum is over seven years, including a compulsory year of rural medicine in a health subcenter. These recent graduates are largely responsible for running the health subcenters.

The Association of Ecuadorian Medical Schools (AFEME) has a very active interest in rural health and has sought, through studies, meetings and publications, to find methods of improving the health of rural people.

(b) Obstetrices (Midwives)

There are three schools to train these high-level midwives, one in each of the universities in Quito, Guayaquil and Cuenca. The course is five years, including a compulsory year of rural practice. About 30-35 obstetrices are graduated each year, but they prefer to practice in the cities, where the demand is greater and the remuneration better.

(c) Nurses

There are about 520 nurses in Ecuador, a ratio of 0.9/10,000 inhabitants. In localities under 100,000 there are only 141 nurses, a ratio of 0.3/10,000. This shortage of nurses is one of the most severe anywhere in the world, and poses one of the most serious difficulties to the DEIDS project, particularly in respect to supervision of rural health services.

There are five nursing schools in Ecuador training baccalaureate nurses, but they graduate only about 45 nurses a year. The course is three years long, plus one compulsory year of rural practice. There are plans for a two year non-degree nurse training program.

(d) Nursing Auxiliaries

Auxiliary nurses total about 2,500 in the country, of which only about 1,100 are trained. This represents a ratio of 4.1/10,000 inhabitants.

Auxiliary nurses are trained in several hospitals, mainly in the cities. Some of the training courses have recently run into financial difficulties and have been suspended. Courses are also offered at these hospitals for X-ray technicians, laboratory technicians, sanitary inspectors and home economics technicians.

(e) Health Promoters (Promotoras)

An innovative small pilot training program for voluntary health promoters (Promotores de Salud) has been active in Ecuador for a few years, conducted through the Ministry of Public Health, assisted by training personnel from the U.S. Peace Corps. The first course was in Puyo, Pasta: Province, in the Oriente. More recent courses have been held in Deleg, Cañar Province, and in Jima, Azuay Province. The candidates are selected by the community from the community and trained in the health subcenter of the area where they will be working. The course lasts 4-5 months and includes basic concepts of arithmetic and bookkeeping, anatomy and physiology, nutrition, hygiene, and the recognition and treatment of common minc illnesses. After training, each promotora operates out of a small pharmac (botequín) set up and equipped with drugs. They also engage in some preventive services in the community. The Ministry plans to incorporate thes new health workers into its health service structure in order to extend health services and basic health education efforts to the smaller and more isolated communities.

2. Traditional Health Practitioners

Traditional cures and curers (curanderos, parteras, comadronas, brujos) exist among all segments of the Ecuadorean population, but in the rural areas the traditional healers are the main deliverers of primary health care. Folk medicine employs herbs, incantations, ceremonies, physical therapy, and sacrifices to rid an ill person's body

of the disease-causing agent. An unknown number of persons is engaged in the full or part time practice of traditional curing.

Traditional curers divide disease etiologies into two categories: mechanical and psychological. To a certain extent, their treatments are related to the presumed "cause" of the disease.

To a certain extent, the population's acceptance of folk beliefs is based on a rational, empirical approach, and some of their explanations of diseases directly parallel more modern ones. Modern curative techniques are accepted rather readily if they have immediate effectiveness; an example was the treatment of yaws by penicillin injections. Preventive measures, on the other hand, are less readily accepted, since the population's action depends upon the theoretical acceptance of modern theories of disease.

The folk beliefs regarding health are deeply ingrained and unlikely to change rapidly. Rather than attempt to fight both the ideas and the practitioners, it might be well to study the ideas, to use them in introducing modern health practices, and to enlist the aid and collaboration of traditional practitioners. For instance, modern aseptic techniques might be usable by traditional midwives without serious modifications of their present practices. Some traditional practitioners will undoubtedly welcome the opportunity to train as auxiliary personnel of the "promotora" type. In any case, in communities where folk healers hold central socio-religious positions, their opposition could prove a serious obstacle to modern public health efforts.

Health Care Facilities

The table below, indicates the urban-rural distribution of inpatient health care facilities. In view of the effective isolation of rural dwellers by poor roads and difficult terrain, it is clear that inpatient treatment is essentially unavailable to most of them.

Table 2: Urban-Rural Distribution of Health Care Facilities, 1971

Size of localities	No. of Establishments	No. of Beds	Percentage of Population (1962)
Over 100,000	21	5,596	19.3%
20,000 - 99,999	148	6,320	8.2%
2,000 - 19,999	8	591	10.2%
Less than 2,000	0	0	61.8%

Source: Ministerio de Salud Publica, Proyecciones Cuadrienales, 59,158.

Approximately 80% of Ecuador's hospitals were built in the last century. In recent years the ratio of hospital beds to population was actually decreasing, although new construction may change this trend. In some hospitals low occupancy rates produce very high costs per patient-day. The Ministry of Health has control of over 55% of the total number of hospital beds, most of which were under the Ministry of Social Welfare and other agencies prior to the 1972 reorganization.

Other treatment facilities include health centers in the larger parishes and health subcenters in small parishes. The functions and staffing of these will be discussed in a later section. Currently there are only 151 health subcenters with physicians in the country.

"Minimal health posts" have been proposed for rural communities, but to date none have been built. The estimated costs ($15,000) of constructing these posts appear to make their use on a wide scale unlikely.

4. Organization of Health Services

Until rather recently, health care in Ecuador was provided by a multitude of uncoordinated and underfinanced agencies and organizations, working almost exclusively in urban areas and generally disregarding prevention. The Ministry of Health, created in 1967, was unable to effectively coordinate public health programs until April 1972, when the military government gave it that responsibility and simultaneously decreed the abolition of certain health organizations and the absorption of others into the Ministry. At

the same time, the country was divided into four health Regions, with the intention of decentralizing the execution of centrally made policy decisions and general plans.

The agencies and organizations most important in rural health services are discussed in the following pages.

a) Official Organizations

1. Ministry of Public Health

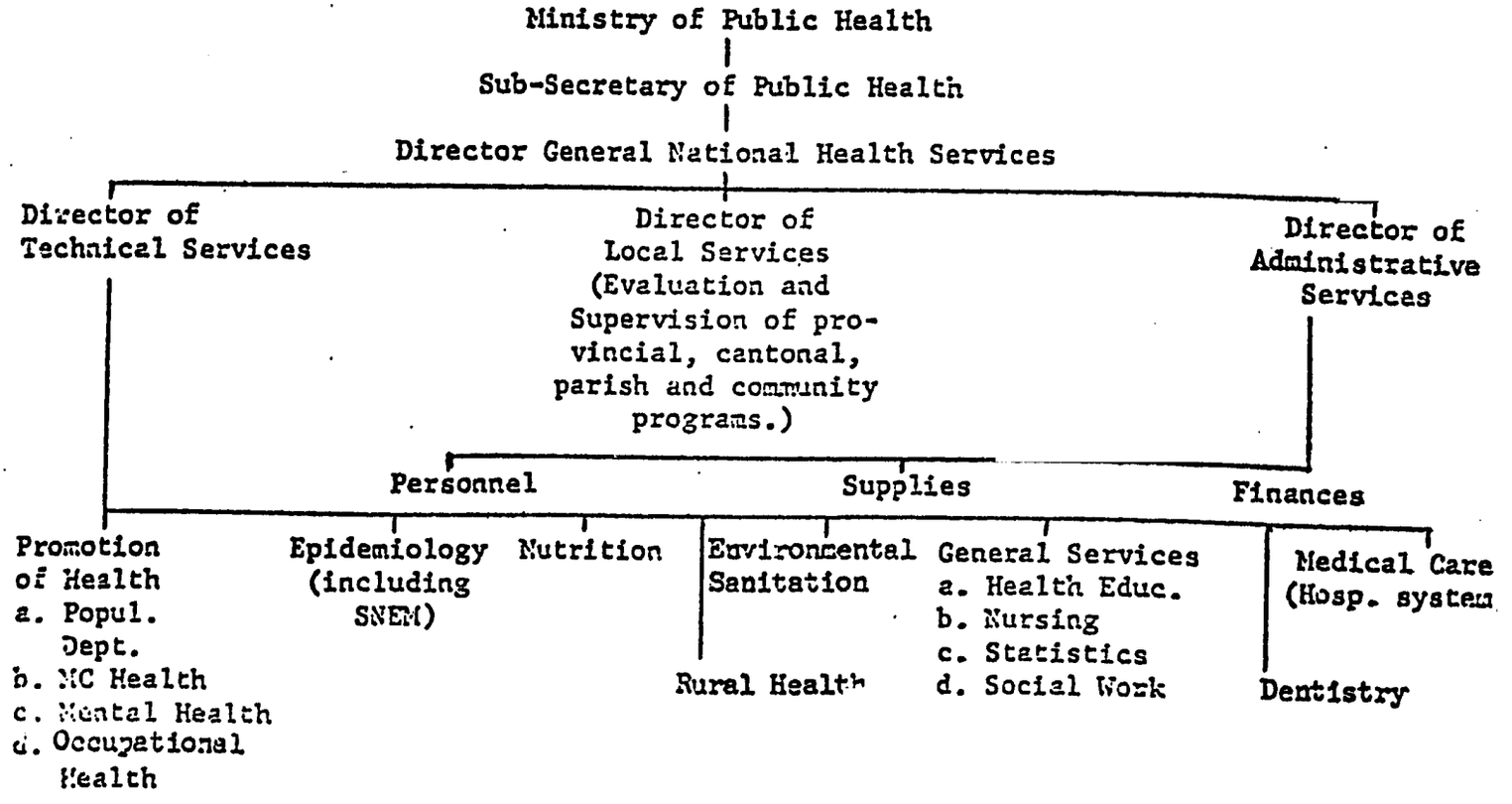
The Ministry of Public Health, created in 1967, coordinates and intends to integrate all health activities as part of one of the objectives of the General Development Plan. The seventh and current minister came into office with the present regime in February 1972.

The Health Sector (Sector de Salud) under the Ministry of Public Health is understood as the sum of public and private entities which carry out health activities, be it as service providers, a product of basic social capital, or collaborators with the national health authorities. The basic problems faced by the Ministry include enormous health needs, limited funds, duplication of services given by personnel and facilities in various autonomous non-MSP governmental agencies which now provide health services. These agencies are being gradually integrated into the Ministry of Public Health: the Antituberculosis League (LEA), for instance, became part of the Ministry in December 1973.

The Ministry has now assumed control of about 55% of all hospital beds. Furthermore, the Ministry has published an ambitious National Five-Year Health Plan (1973-1977). The Minister is assisted in formulating these plans by a formal intraministerial Technical Council, composed of the General Director of Health, the National Program Directors and the Program Division Chiefs.

The functioning chain of command at the national level goes from the Minister through the sub-Secretary of Health (Vice Minister) to the Director General of Public Health, who has immediate responsibility for all MSP programs. There are three program areas: The National Directorate of Technical Services, with subsidiary Divisions of Health Promotion (including MCH and a special Department of Population), Epidemiology, Nutrition, Environmental Sanitation,

Dentistry, Rural Health, General Services (Nursing, Social Work, Statistics, Health Education) and Medical Care (hospital system); the National Directorate of Administrative Services includes the Divisions of Finance, Personnel and Supplies; and the National Directorate of Local Services has the function of supervising and evaluating programs at the Regional, Provincial, Cantonal, Parish and Community levels. This structure is shown graphically in the following chart



The Ministry is committed to a process of decentralization and regionalization. Four health regions (Central, Coast, South and Manabí), geographically cutting the nation across the traditional regions, were created as the principal subdivisions of the Ministry. The reorganization aimed for centralized planning and technical standards with decentralized execution. Separate regional plans are to be closely coordinated by the ministry, as are various programs involving other health agencies and other ministries. According to Decree No. 232 issued in April 1972, each of the four health regions was empowered to: (a) study and evaluate regional health needs; (b) plan the coordination of area-wide health programs; (c) provide adequate technical services to provincial health offices; and (d) evaluate program results.

Regions and provinces have similar structures to those of the National level, but understandably are not as adequately staffed.

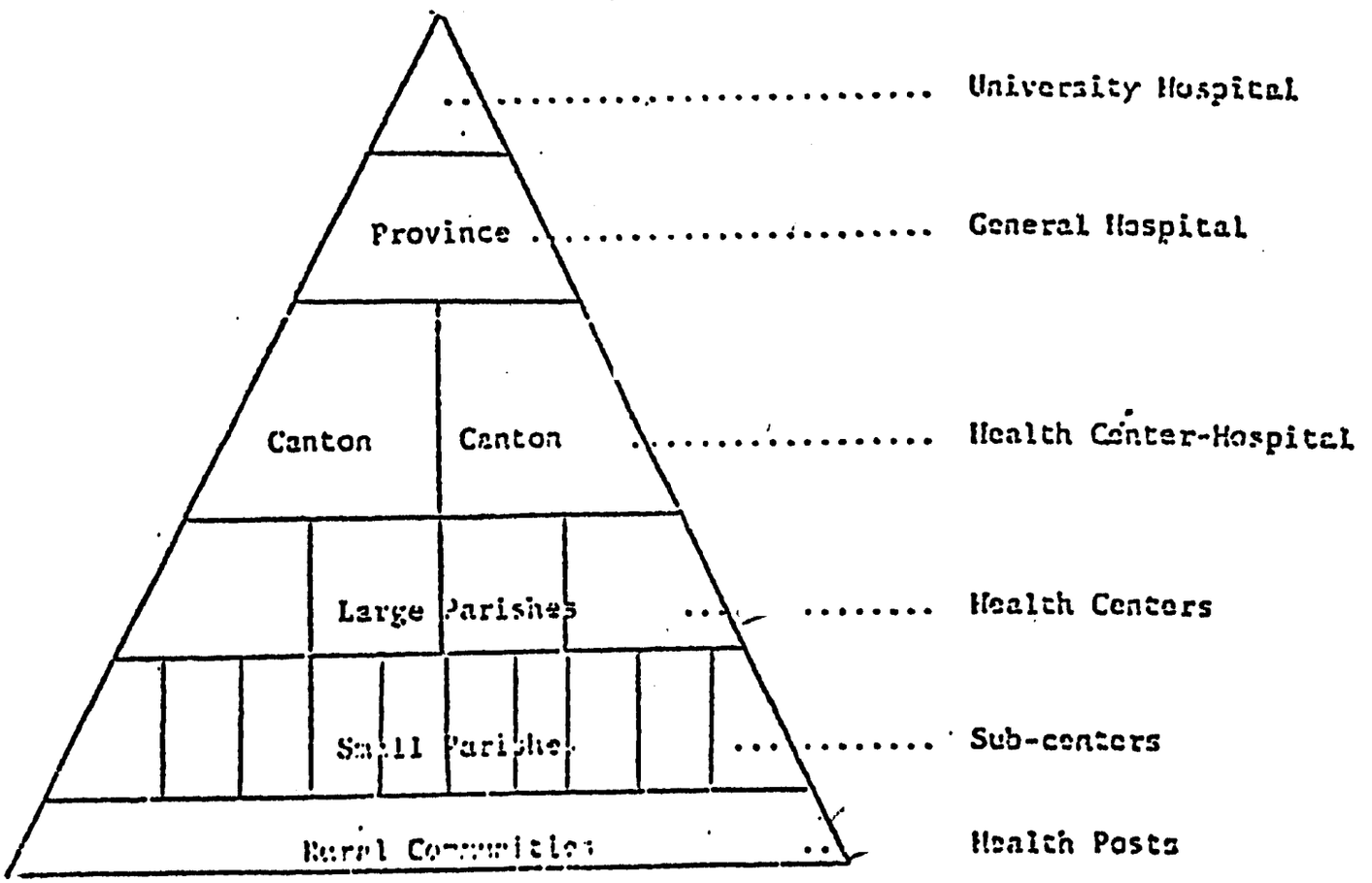
The Regional Director has responsibilities for planning, supervision and evaluation of health activities, but no executive control. The lack of a clear chain of command from the national through the regional to the provincial level creates frustration and friction, particularly at the regional level. The regional directors have supervisory responsibilities for unequal numbers of provinces and cantones, and the regions vary in the accessibility of the facilities and communities, as well as in the concentration of populations, ethnic groups, etc. The lack of travel funds and transportation facilities has precluded adequate supervision of health activities.

Each provincial Health Officer has under him a chief of medical care, an epidemiologist and the directors of health centers. The chief of medical care is in charge of the provincial hospital, which provides: 1) adult medical care, 2) obstetrics, 3) pediatrics and 4) general surgery.

Further operational levels supervised by provincial directorates are the cantonal hospitals, of which there are 32 (24 of which are nearing completion), health centers and sub-centers. Health centers offer the following services: 1) maternal and child health activities (including Family Planning), 2) dental care to pregnant women and pre-school children, 3) immunizations, and 4) environmental sanitation. Ideally, each subcenter would be staffed by a

physician, an auxiliary nurse and a sanitary inspector. Health posts, if they are funded and constructed and become operational, would ideally be staffed by an auxiliary nurse and a sanitary inspector. Simple community-provided facilities from which the health promoters operate are most accessible to the rural people near them and offer a relatively inexpensive means of increasing the population covered by basic health services.

The Ministry of Public Health is attempting to integrate the inpatient and ambulatory health facilities into what is generally visualized as a pyramidal structure, as diagrammed below.



While this model is obviously an oversimplification, it constitutes an idealized regional health scheme toward which Ecuador is striving.

To illustrate the lack of personnel with which the Ministry must contend in staffing all of the facilities in this pyramidal structure, the following table presents personnel figures for 1972.

It should be noted that many of these personnel work only part-time for the Ministry.

Personnel of the Ministry of Public Health, 1972

Category	Number	Category	Number
Physicians	465	Technicians:	
Dentists	79	laboratory	1
Interns	94	x-ray	3
Obstetrices	64	Aides:	
Nurses	171	nursing	414
Health inspectors	261	dental	0
Social workers	48	x-ray	22
Nutritionists	2	laboratory	62
Dieticians	1	psychological	47
Health educators	12	pharmacy	110
Chemists-pharmacists	11	Civil engineers	7
Physical therapists	2	Architects	2
Psychologists	1	Administrative personnel	305

Sources: Ministerio de Salud Pública, 1972. 16. 17: Ministerio de Salud Pública, Proyecciones Cuadrienales, 113.

By recent government regulation, the Ministry of Health has established a National Committee on Rural Health. Subcommittees have been established in two of the four health regions. These are expected to improve the coordination and implementation of health programs in rural areas.

The Malaria Eradication Program (SNEM), until 1969 a separate program under the MSP, has been integrated into the MSP structure as one of the programs within the Division of Epidemiology of the Directorate of Technical Services. The Director of SNEM is responsible to the Southern Regional Director. SNEM has done a commendable job in combatting malaria in many parts of the malaria zones. The program functions through the use of voluntary collaborators, one for every 600 people in malarial areas, under the supervision of a full time paid auxiliary. The collaborators were chosen by the spraying teams as they made

their rounds during the attack phase. They would ask in each home which person in the village would be the best one with whom to leave medicines and slides for the collection of blood. At the end of the cycle of spraying the nominations were tabulated and the most popular person was approached to be the collaborator.

The SNEM collaborator has two main functions, to make blood slides of all people who come down with fever and to give them presumptive malaria treatment. The slides are then sent into the zonal headquarters for examination, and if a slide turns out to be positive, the person is followed up by the auxiliary, the full-time paid SNEM worker of that area. The auxiliary visits all of the voluntary collaborators every month. He also visits homes in specified areas to determine if all patients with fever have gone to the collaborator for blood test and treatment. The auxiliary also visits schools for health education. The auxiliaries are supervised by sector chiefs and there is an overall supervisor for each five or six sectors. Above the supervisor is the chief of the zone, which may contain as many as fifteen to twenty sectors. The organization has very carefully mapped its area of operation and has impressive demographic and health data on the population it serves.

The Ministry of Public Health has a project in which voluntary SNEM collaborators are used for the dissemination of family planning information.

2. Social Security (Instituto Ecuatoriano de Seguridad Social, IESS)

Ecuador has a social security program providing for health and maternity benefits, compensation for workmen injured during the course of their employment, and old-age pensions. Some Social Security health services overlap and compete with those of the Ministry of Public Health, and the Social Security System has a much larger budget than the Ministry, as is common in many countries. Social Security operates four large hospitals of 1,200 beds (with the possibility of expansion by 450 more), 8 small hospitals and 35 dispensaries for its 330,000 insured members. The system's chief drawback has been that it has provided no coverage for dependents other than maternity care. The new policy

of the IESS, upon request from the government, is that "social security should be progressively extended to cover all the working population in both the urban and rural areas and should give services to the entire family rather than to only the insured worker". It is planned that within the next seven years, care will extend to all mothers and to children up to the age of 18. It is also planned that the IESS will cooperate with the MSP by paying for the use of Ministry facilities in areas where IESS has none. IESS is also contemplating payment to the MSP for preventive services, such as immunizations, malaria protection, and flouridation of water, which are not now provided to insured persons.

Some rural pilot health care projects have been started, but it remains to be seen how quickly the policy will be carried out and how it will cooperate with MSP activities. DEIDS planners were involved in discussions with Social Security staff concerning collaborative efforts.

3. The Armed Forces Medical Division

Another major health delivery system is that of the Armed Forces Medical Division. It does not actually duplicate MSP services, inasmuch as its only clientele are the active and inactive military members of the armed services and their families. There are now approximately 12,000 men in active service and for each such person there are 4-5 inactive persons with families. The program does represent a "competing" service, in that priorities are established independently and funds and facilities are administered autonomously, thus causing a dispersion of scarce national budgetary resources. The Minister of Public Health would like to integrate the military system into the MSP, but acknowledges that under the present circumstances increased coordination is a more practical goal. Results of this effort can be seen, particularly in the field of family planning, where the military's nine centers and nineteen subcenters for family planning are providing services to the civilian population. The Air Force serves inaccessible rural civilian areas by evacuating emergency cases and offering dental care.

4) The Andean Mission (Misión Andina)

The Andean Mission (Misión Andina) started as a U.N. supported organization in 1954 to try to integrate the Indian peoples of Ecuador, Bolivia and Peru into the dominant cultures of their respective countries. The plan was to achieve this integration through betterment of housing, roads, food, education and health. Ecuador nationalized the Andean Mission functions in 1960, and in 1970 it became an integral part of the Ministry of Social Welfare, but now it is based in the Ministry of Agriculture. During its earliest stages the staff consisted chiefly of doctors and paramedical staff since health was stressed. Later, engineers, agronomists, agriculturists and educators were also brought in. The health services are integrated with cooperatives and with fishing and wild life activities. In each of seven zones, one of which is in parts of the DEIDS project area, a medical team led by an itinerant doctor provides vaccinations, maternal and child care, and environmental sanitation.

The Mission first started in small communities of 300 - 1,200 persons, but they are now working in larger ones comprising 10,000-15,000 persons in which health services are integrated with cooperatives and with fish and wildlife activities. In each of their seven zones, there is one doctor, one nurse, one sanitary inspector, one dentist, and a variable number of auxiliaries. The auxiliaries live in the areas, while the professionals usually live in the main city of the province, periodically visiting the rural villages. The medical program provides vaccinations (diptheria, whooping cough, tetanus, and at times, polio), maternal and child care, a environmental sanitation (latrines, septic tanks, and wells). The Ministry of Public Health makes vaccines available. There has been some talk of integrating this service into the Ministry of Health. Symbolic of beginning integration is the fact that training of staff is now being done in Quito and Cuenca by the Ministry staff.

Socio-Anthropological studies carried out by Andean Mission personnel

provide a rich source of information as to the attitudes and practices of rural Indians. This information will be used in developing specifi DEIDS project training and service plans.

b) Voluntary Organizations

1. The IPPF affiliate in Ecuador (APROFE) has four clinics in operation in Quito, Guayaquil, and Cuenca. This organization has trained large numbers of professionals and paramedicals in activities related to family planning for its own program, for the MSP program, and for private services. It has been a major force in family planning information programs to the public through the press, radio and movies.

2. CARE and Catholic Relief Services (CARITAS) are integrating their child feeding programs into a nutrition project under the National Nutrition Institute, which intends to coordinate the work of all related agencies to bring about adequate nutrition for pre-school children. CARE, CARITAS, and the Brethren Church are carrying out small projects in rural areas to promote training of community leaders, to integrate peasant youth into the process of socio-economic development, and to encourage the communities to make improvements by their own efforts. The Voice of the Andes, a Protestant missionary group, has been carrying out rural health and family planning activities. The Ministry of Public Health has used some religious groups in training auxiliary workers.

3. Two voluntary organizations supported almost completely by government funds are the Red Cross, and the League Against Cancer (SOLCA). There is general agreement that the funds could be better utilized if they were spent through the national health delivery system. One successful project of SOLCA has been the assumption of responsibility for the examination of all Papanicolaou smears taken during examinations related to family planning services in the government health centers. AID had made long-term technical assistance available to train necessary technical personnel for this project. The Tuberculosis League (LEA), formerly a government supported voluntary agency, was integrated into the MSP by decree in December 1973.

4. The National Children's Trust (Patronato Nacional del Niño) performs social work with orphans, beggars and poor children. It also conducts nutrition and health education campaigns for poor mothers. Approximately nine rural extension organizations are concerned with rural health, with recent government attempts to coordinate and consolidate their efforts.

c) Multilateral External Assistance

The Pan American Health Organization (PAHO) has a number of technical personnel stationed in Ecuador. The Country Representative has been working with the MSP in the development of its Five-Year Plan, which has as a major goal the extension of health services to rural areas. A Regional MCH/Population Advisor has been involved in the Ecuador Five-Year Plan for family planning activities. PAHO also has malaria advisors in the country and is planning to assist in improving epidemiological capabilities relative to eradication of malaria.

The United Nations Fund for Population Activities (UNFPA) is supporting the Ministry of Defense family planning project, which has been receiving funds since its inception from USAID. The Fund is now negotiating support for the population activities of the Ministry of Public Health.

The United Nations Development Program (UNDP), through the Food and Agriculture Organization (FAO), is supporting a four-year program to strengthen the National Agricultural Extension Service. The UNDP has also been cooperating through technical assistance in the control and eradication of hoof-and-mouth disease.

The Inter-American Development Bank (IDB) has made technical assistance available for agrarian reform programs of lands owned by the Roman Catholic Church. To date Ecuador has obtained from the IDB over $28,000,000 for supplying potable water and improvement of sanitation. A large investment has also been made with IDB funds for the reorganization of the administration and curriculum in institutions of higher education and for expanding their facilities. Technical assistance has been made available for improvement of technical training.

The World Bank (IBRD) has made large loans for road construction in the southern region, which will facilitate extension of health services to more remote areas.

d) Bilateral External Assistance

The United States, through the Agency for International Development, has made major inputs into the Ecuador programs for family planning, nutrition and malaria control.

USAID support of malaria eradication activities through loans terminated at the end of 1972, except for the new project designed to utilize SNEM infrastructure for family planning education and promotion.

USAID is now supporting a project to improve the nutrition of pre-school children with the expectation that children free from debilitating disease and malnutrition will encourage families to plan fewer children. Current AID strategy for planning nutritional components of national health programs was based partly upon work done in Ecuador, and the nation is used as a case study in explicating this approach.

USAID has also been supporting a program with the Ministry of Social Welfare in which social workers in 81 communities are motivating rural couples to go to rural health centers, including those of the Andean Mission, for services. USAID began its support for a project on responsible parenthood in 1966, collaborating with both the Ministry of Public Health and the Armed Forces Medical Department. This helped to develop the Ministry's Population Department, to increase the number of health centers offering family planning services, to train large numbers of doctors, nurses, social workers, and auxiliaries, to develop programs for audio-visual input, to install an evaluation system and to include population content in the training of primary and secondary school teachers.

Another project provides for the costs of including population dynamics and family planning in the curricula of the three medical schools.

A great deal of short-term training will be going on in Ecuador during the next two years to better qualify staff of different ministries to carry out family planning programs. Personnel of the following institutions will be involved: Ministry of Social Welfare, Andean Mission, Rural Medicine Program,

Health Center Directors, Doctors and Nurses of the Ministry of Public Health, School of Nursing, School of Midwifery, Doctors of the National Police, Social Security Institute, League Against Cancer, Ministry of Education, Ministry of Defense, Ministry of Agriculture, Obstetrics/Gynecology Societies of Quito and Guayaquil. Fifty-nine courses are planned for about 2,500 participants. There will also be 80 participants receiving longer-term (up to two years) training in other Latin American countries or in the United States. All of this training is supported by USAID.

Bilateral assistance has also been provided by several other countries. Great Britain has assisted with the training of health personnel and the development of potable water systems. France has worked in the areas of hospital construction and potable water supplies. Hungary has provided hospital equipment and assisted in its installation. Italy has sponsored a Superior Health Institute and rural health projects. Swiss bilateral aid has focused on human and animal nutrition. Germany has been carrying out a technical assistance project of agricultural development in one province. It has also given a large loan for the utilization of subterranean water for irrigation and drinking and has made investments in the improvement and extension of primary and technical education.

D. The DEIDS Project Area: The Zona Austral (Southern Health Region) and Cañar Province

The area selected for the DEIDS Project includes three provinces of the five which together constitute the Southern Health Region. The three provinces, Cañar, Azuay, and Loja, are overwhelmingly rural and, even by rural Ecuadorean standards, are very poor. Most of the nearly 850,000 inhabitants are Quechua-speaking rural Indians engaged in subsistence agriculture and living in isolated small villages with nonexistent or very poor roads and transportation to even the larger villages. The area is mainly in the Sierra, but some portion of each province extends into the coastal zone.

According to the 1972 census survey the provincial populations were:

Province	Area	Population	% Rural
Azuay	3,211	320,200	75
Cañar	1,614	138,000	87
Loja	4,445	388,900	83
TOTAL	9,270	847,100	

A reasonably good road connects the largest city in the area, Cuenca, in Azuay province, to the smaller cities (Cañar and Azogues in Cañar province; Loja in Loja province). There are airports in the cities of Cuenca and Loja. Travelling from Cuenca to Quito requires 50 minutes by air or 12 hours by road. Transportation to the larger villages is by poor, sometimes impassable roads and by trails. Access to the smaller villages is by horse or mule trails only. The World Bank (IBRD) has made large loans for road construction, which will somewhat improve transportation in the Southern Region.

The city of Cuenca is the site of the Regional Health Office and contains many other governmental, marketing and health resources, which serve the entire region. Medical schools are located in Cuenca and Loja. The University of Cuenca Medical School has cooperated with the Ministry of Health in carrying out several rural health field studies. The Rural Health Subcommittee for the Southern Region acts in an advisory capacity for rural health activities. See Appendix number for its composition. Studies of rural health have also been carried

out by the Andean Mission and the Malaria Eradication Program (SNEM), each of which is active in parts of the region; their findings and experiences will be used in the DEIDS Project activities.

The Province of Cañar has been selected for initial implementation of the DEIDS projects with later expansion to cover the other two provinces. This decision provides for an orderly stepwise increase in the population served.

Cañar province is very rural: about 87% of the people live outside of the provincial capital, Azogues, and are therefore considered rural by one definition common in Ecuador.

The population of Cañar Province in 1972 was 138,400, divided among three cantons, which are, in turn, subdivided into 28 parishes (paroquias), as follows:

Canton	Parishes	Population
Cañar	13	67,030
Azogues	11	45,170
Biblian	4	14.900

The capital city of the province is the city or Azogues in the canton of the same name; the second largest urban center is the city of Cañar in the canton of that name. (Thus Cañar is the name of a province, a canton, and a city -- not to be confused with each other.)

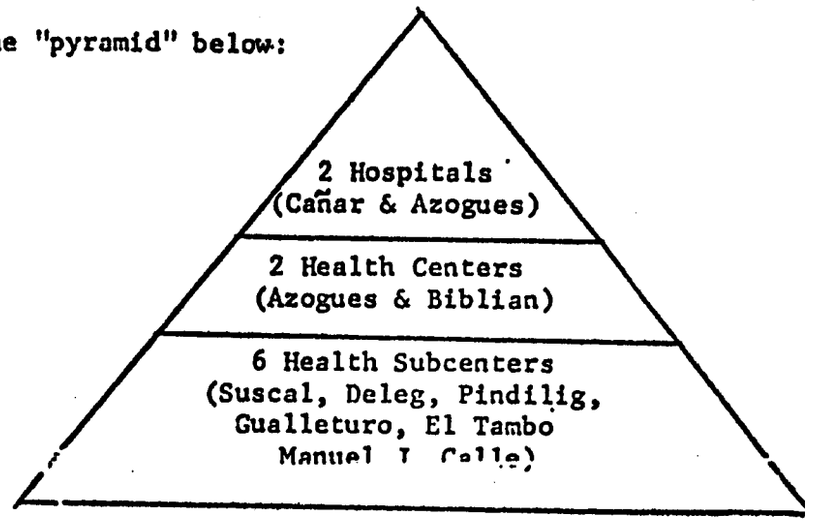
The small proportion of this population reached by scientific health services is reflected by the fact, for example, that in 1965 among the 1664 deaths occurring, 85.5 percent were not attended by a doctor even in the final illness this compared with no medical attendance of 60.6 percent of deaths in Ecuador as a whole. Among the 19 provinces in the whole nation, by this particular health service indicator, Cañar Province was the second from the bottom.

The most widespread health service resources of the Province of Cañar are the local, traditional healers (curanderos) and midwives (parteras) who live in the villages or "communes" or "parcialidades." Considering "westernized" health service, the major resources are those provided by the Ministry of Publi Health. These facilities consist of hospitals, health centers, and small healt

subcenters. The office of the Provincial Health Officer is located in the provincial capital city, Azogues.

The current Provincial Health Officer is a private practitioner who is able to use only part of his time on administrative duties. He is assisted by a recently appointed Provincial Epidemiologist -- just returned from a year's M.P.H. training at the University of Puerto Rico.

The Ministry of Health's medical care facilities in the province are diagrammed in the "pyramid" below:



There is a general hospital of 120 beds at Azogues, which theoretically serves the entire province, and a cantonal hospital of 60 beds in the city of Canar. The bed-population ratio, therefore, is about 1.2 per 1,000. Both of these institutions are old, with large wards, limited equipment, and small staffs. The expenditure for all services is said to be about 60 sucres ($2.50) per patient-day. Each of these hospitals has an out-patient department and emergency room. Ultimate control over the hospitals is retained by the central Ministry of Health, in Quito, which pays salaries of all personnel directly and must give final approval to all appointments. (The hospital budget allotted to provincial authorities is limited to purchase of supplies, transportation, and related non-manpower expenses.)

The two health centers offer the following services:

1. Maternal and child health activities
2. Dental care to pregnant women and pre-school children

3. Immunizations

4. Environmental sanitation

The staff of a health subcenter consists typically of a doctor, an auxiliary nurse, and a sanitary inspector. Vacancies are relatively common. While the doctors are theoretically "full-time" this means 33 hours per week, and it appears that most of them engage also in some private practice. The doctors in the subcenters are recent graduates putting in their one year of obligatory rural service.

Ambulatory health care facilities are located in 7 of the province's 28 parishes, as follows:

Parish	Population
(Canton of Cañar)	
El Tambo Suscal Duelleturo Manuel J. Calle	14,635
(Canton of Azogues)	
Prindilig	2,260
Deleg	6,200
(Canton of Biblian)	
Biblian	2,275

Thus, a total of 25,370 people live in parishes served by Ministry units for ambulatory health care, or about 18 percent of the provincial population. If one adds the population of the cities (or towns) served by the out-patient departments of the two hospitals, the proportion (according to the Regional Health Officer) comes to about 26 percent. Since a great portion of the population, even in parishes containing subcenters, are hardly accessible to them, however, one may estimate conservatively that about 80 percent of the population are without formal health services (a figure quite close to the non-medically attended

deaths of 85 percent in 1965).

The functions carried out at both the subcenter and the new "promotor" stations are overwhelmingly curative medicine. There appears to be little, if any, systematic provision of preventive health service to mothers and children or to others. The principal exception is a program of vaccinations against smallpox, measles, and some other communicable diseases conducted, not from the subcenters, but from the Provincial Health Office, by a Chief Vaccinator and his four assistants. These men go throughout the province from house-to-house (in the manner of DDT-spray teams in malaria control programs) vaccinating children, when they can persuade the families.

Since May 1973, the population of one parish, Deleg (6,200) has been served by a new type of resource; health promotors ("promotoras de salud"), housed in small one-room structures or "botiquines". These are typically young women with elementary educations (4th to 6th grade), from the villages, who have received a 4-month training course in limited health care by a registered nurse (R.N.) from the U S. Peace Corps. There are 8 small communities in the parish of Deleg served by these "promotores", who are in turn supervised by a doctor and a graduate nurse stationed at the Deleg subcenter. The latter young woman is a recent graduate of the University of Cuenca School of Nursing, who is currently putting in her one year of rural service (mandated by a national law for all university trained nurses and doctors since 1970). It should be noted that, at this time, none of the other six parishes with subcenters are served by "promotores" -- nor, of course, are any of the remaining 21 parishes in the province.

At the subcenters and at the newly established "botiquines" in Deleg parish, there are supplies of drugs for treatment of common illnesses, but the inventory of drugs could be improved, both in terms of effectiveness and economy. Patients are charged fees for drugs at both these ambulatory units and the hospital outpatient departments.

Other organized health care resources in the Province of Cañar are two small dispensaries of the Social Security health system, one each in the cities of Azogues and Canar. The I.E.S.S. program covers only insured industrial or commercial workers (not agricultural) and in 1971 there were 3,570 such insured persons in the province. Hospitalization of these persons is provided in a relatively modern I.E.S.S. hospital of 60 beds located in nearby Cuenca. The I.E.S.S. has recently inaugurated new programs for coverage of related small rural communities but none of these are currently located in the Province of Cañar.

A few small private pharmacies are found in the main towns of the province. The only private medical care is by doctors' facilities. At a few towns, dentists come in from Cuenca for private service one day a week. There are also various other resources in Cuenca, including the University Hospital, the Social Security Hospital, and several small "clinicas privadas" that to some small extent serve the people of Cañar Province.

Traditional health practitioners such as herbalists, faith healers and midwives play a major and influential role in the primary health care of the rural population. (At present, it is illegal to be identified as a traditional health practitioner in Ecuador, therefore, it is very difficult to assess the number and scope of their activities.) The project will make every effort to identify and win the confidence of the traditional health practitioners. A working relationship will be established between the trained community health workers and the traditional health practitioners in such a way that rivalry will be minimized. The possibility of giving formal training to the traditional health practitioners will be explored.

E. Strategy

The concepts of the DEIDS (Development and Evaluation of Integrated Delivery Systems) project are highly suitable for tackling the health problems of rural Ecuador, and specifically of Canar Province. The project calls for a low-cost health delivery system, integrating Health, Family Planning and Nutrition Services in a form that will be accessible and acceptable to the total population and able to reach 66% of the young children and women of fertile age by the end of the project period.

The strategy proposed is to provide integrated Health Services, emphasizing maternal and child health in the widest sense, and including applied nutrition, family planning and environmental health. This strategy is based on the premise that there are mutual benefits to the integration of nutrition, environmental health, and family planning in the delivery of health information and health services.

These various components of family health services will be offered as an integrated whole, not only because they are inseparably related by nature but also because that strategy conforms with the policy of the Government of Ecuador. An alternative strategy that was considered and abandoned was the provision of maternal and child health, nutrition, family planning and environmental sanitation as separate services. This would not only have been more expensive, with duplication of facilities and personnel, but also would not have been acceptable to the Government of Ecuador.

The planned health delivery system will be based in the community, and the primary health care deliverers will be selected by and from the community. They will then undergo training by the DEIDS project team in the particular locale in which they will be working. After training they will be based in a community health post, the building provided by the community but initially equipped with

basic materials and medicines by the project. They will become part of the Ministry of Health service structure paid by the Ministry, and will function as community health workers under the supervision and control of the doctor in charge of the local health subcenter. Their exact title has yet to be decided, but they will be essentially similar to the present promotoras with appropriate modifications. Their functions will be primarily preventive, but they will also undertake minor curative and first aid procedures both in the health posts and through home visits.

There are well-demonstrated synergistic interactions between malnutrition and infections in producing high infant and child mortality and in causing growth retardation. The immunization activities, carried out with the assistance of the provincial Chief Vaccinator and his teams, are therefore expected to be of even added benefit when offered with nutrition and environmental sanitation activities than they would usually be.

The community health workers will introduce their communities to the basic ideas of environmental sanitation, stressing the importance of water supplies and waste disposal, with emphasis upon practical measures. The community organizations, formed as part of the DEIDS program, will be active in organizing and carrying out water supply and sanitation projects, with increasing activity, as financial and technical assistance becomes available from the government for such projects.

Guidance in these matters will be provided by sanitary inspectors retrained under another national program, as well as by other government workers in the field of Environmental Health.

The health of mothers, infants and young siblings is adversely affected by the common rural pattern of frequent repeated pregnancies and births. Some of these effects will be ameliorated by the other components of the program, but a reduction in the frequency of births would provide direct health benefits to both

target groups. Family planning information and services integrated with pregnancy and delivery care and with other services, will make this possible. The family planning activities of the community health workers will be an integral part of their services and will be coordinated with the activities of other voluntary and government agencies. The Ministry's Department of Population has expressed strong interest in the use of these community health workers as providers of basic family planning information and services to the rural population. In designing the family planning aspects of the community health workers curriculum and activities, full advantage will be taken of the experiences gained in using malaria eradication personnel and other similar workers in family planning programs. Use will also be made of materials developed for use in the dissemination of family planning and health information by radio during the last four years.

Emphasis in the DEIDS project is on broadening and strengthening the base of the health care pyramid by increasing the number of persons in rural areas who have basic health services available to them. However, the functions of the community health workers must be integrated with the rest of the system, through the health subcenter, in such a way as to maximize the health efficiency of all parts of the system.

Thus, the project plan will tackle the two main barriers to health services delivery in the rural areas, namely lack of a service infrastructure and lack of integration of the main components of health services.

Another aspect of the project's strategy which deserves special mention is the flexibility envisaged to allow for changes and use of new approaches in response to feedback from the concurrent evaluation of the operation. Some of the project innovations to the present health services in Ecuador are:

1. The extensive use of community health workers as the primary deliverers of health care. The present pilot promotoras project has trained only about twenty workers who have not yet become part of the Ministry's health services

structure. The vastly increased number of this cadre of personnel will be fully integrated into the Ministry of Public Health.

2. The active involvement and participation of the communities in health services delivery, to be accomplished through health councils and agricultural cooperatives, is new to the country. The communities will be organized and motivated to select and support their health workers, and will provide the physical facilities for the health posts.

3. The utilization of parish priests, school teachers and local government leaders in the organization and delivery of health services.

4. The establishment of a working relationship between the community health worker and the local traditional health practitioners. For example, some of these practitioners may be selected by the communities for training as community health workers.

5. The development of methods and materials appropriate for training individuals with as little as 2-4 years of formal education to function as health workers, and the evaluation of the training program.

6. The concept of taking health services to rural communities and homes instead of waiting for clients to come to health facilities.

7. The extension of the scope of rural health services, with emphasis on prevention, through the integration of maternal and child health, nutrition, family planning and environmental health, and with evaluation of the integrated services.

8. The reorganization of services and retraining of health workers including reassignment of tasks to various levels of health personnel in keeping with the realities of rural health care and the philosophy of the project.

9. Institution of close and effective supervision of health activities at all levels.

10. Establishment of standardized health information and vital events registration systems.

11. Establishment of an evaluation unit at the Provincial Health Office level to monitor the health services and provide rapid feedback for better management.

12. Evaluation of the total project and its integral parts to assess cost-effectiveness, and provide the basis for replication of the project throughout the country. The results of the DEIDS Project may preclude the need for the much more expensive health posts (Puestos Mínimos de Salud) now contemplated in the Five Year Health Plan.

F. Course of Action

The course of action and the time phasing is shown in the accompanying chart. Many of the activities, for example baseline data collection and initial KAP studies, extend over periods of 4 to 5 years but in different parts of the project area. This is because the project will be starting in an area of Cañar Province and progressively extend to other parts of the Province and then to Azuay and Loja Provinces. Before each area is added to the Project these activities (e.g. baseline data collection) will be carried out until the entire project area is covered. Furthermore, many of the activities will be carried out "pari passu".

Also included in a PERT network presenting in graphic form the plan of implementation of the project.

At the beginning of the project, several activities will be started:

1. Baseline Data Collection and Analysis, comprising:
   a) Mapping of project area
   b) Population census and demographic analysis
   c) Physical, economic, social and other characteristics
   d) Registration of births and deaths
   e) Initial KAP surveys on health, family planning and nutrition
   f) Environmental health facilities and practices
2. Functional and Task Analyses leading to job descriptions for the various personnel categories.
3. Training curricular design based on job descriptions.
4. Development of training methods and materials.
5. Preparation of the Training Manual.
6. Reorganization and standardization of health records systems at the provincial health office, health subcenters and community health posts. These will be designed to provide information on:
   a) Health service statistics on maternal care, child care, immunizations,

b) Family planning statistics including record of each person accepting contraception, amounts of family planning supplies provided, classified by method, parity, age, education and interval since previous pregnancy.

c) Nutrition Statistics, which will include weight charts, nutritional status, infant feeding methods, weaning practices.

d) Coverage statistics, which will include the number of the target population reached in an area, and the total number of the target population derived from the census.

A network of about 720 community health posts will be established. Each health post will be directed by a community health worker who will pay home visi and is trained by the DEIDS Project training team to serve 1,000-1,500 inhabitants. They will deliver the following services both in the health posts and in homes, and through Mothers' Clubs organized in the community:

1. Maternal and Child Health Services consisting of:
   (a) Counselling on child care and child rearing
   (b) Minor curative and first-aid emergency services
   (c) Referral to the health center for more difficult problems.
   (d) Immunization services
   (e) Prenatal and postnatal services
   (f) Midwifery services for the uncomplicated cases
   (g) General health education
2. Family Planning Services

The network of community health workers will provide the needed infrastructure and the vehicle for the delivery of family planning services not only to the health subcenters but also to the homes in the rural areas, consisting of:

(a) Family planning information and motivation

(b) Dispensing of the desired contraceptive methods that could be accomplished in the home or the community health post.

(c) Referral to the health subcenter for the more complicated contraceptive procedures.

(d) Follow-up of the acceptors

(e) Continuing review of the non-acceptors.

3. Nutrition Services

The DEIDS Project through the network of about 720 community health workers will provide the vehicle for nutrition services consisting of:

(a) Nutrition counselling and education

(b) Curative services for patients with malnutrition

(c) Monitoring of the nutritional status of the "at-risk" groups, through weight charts

(d) Promotion of breast feeding

(e) Counselling on infant weaning using low-cost locally available high protein-calorie vegetable multimixes

(f) Influencing the agricultural practices of the community through demonstration low-cost home gardens, growing the more desirable nutritious food crops.

4. Environmental Health Services

The community health workers, assisted by the sanitary inspectors at the health subcenters, will provide the following services:

(a) Environmental health information

(b) Personal hygiene information

(c) Advice and assistance with latrine construction

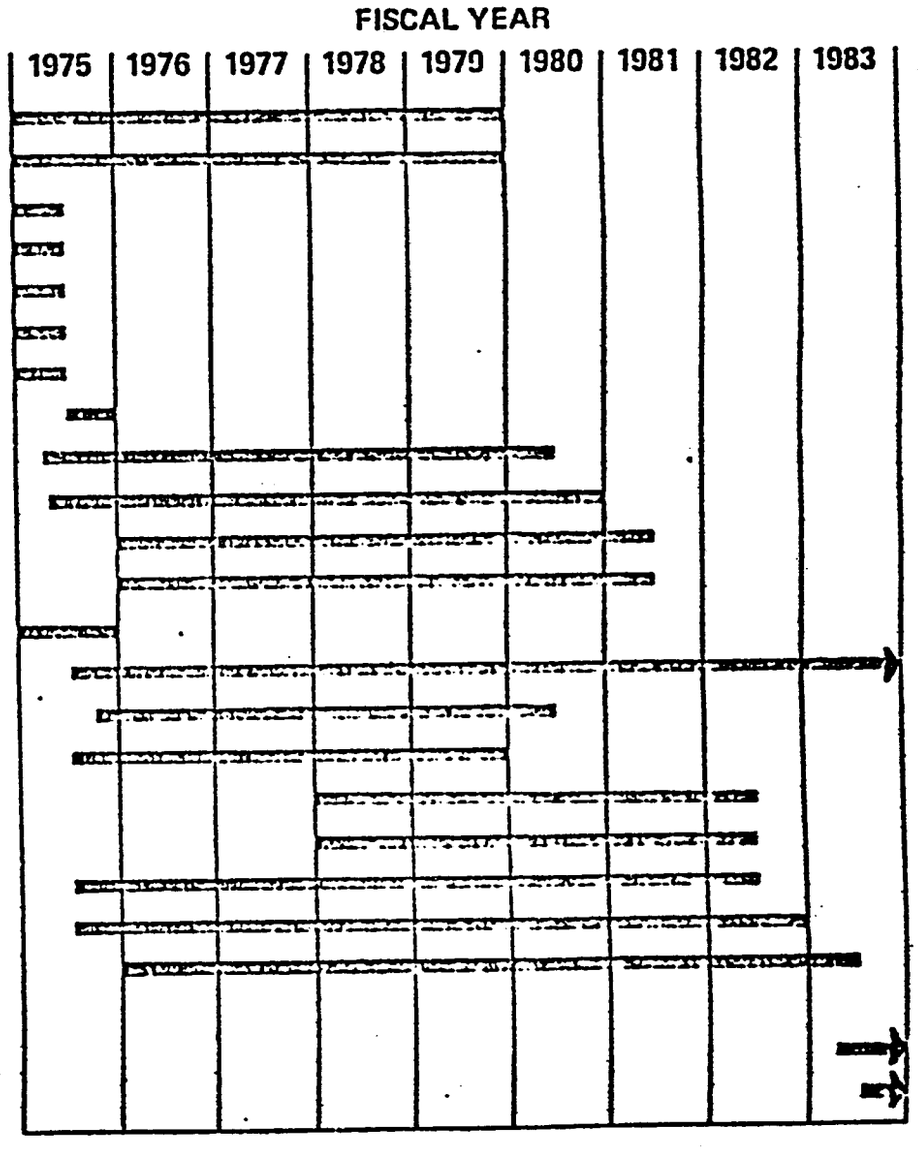
(d) Methods for rendering drinking water safe, e.g., boiling.

PROJECT REVIEWS

It is very important that regular project review sessions be scheduled as an integral part of the project's course of action. Such sessions should be held every six months for the first three years of the project and annually thereafter, with representatives attending from all the institutions participating in the project. Most of these sessions should be held in Ecuador, but it would be most desirable for two of the sessions to be held on the UCLA campus during the project's duration, partly to broaden the understanding of the Ecuadorian participants of the support activities going on at UCLA.

Annually, the Ministry of Public Health will convene meetings at which the activities, progress, and problems of DEIDS will be discussed. These meetings will have in attendance MOH personnel from other provinces and regions, Ecuadoreans outside the Ministry and representatives of neighboring countries as deemed appropriate, as well as APHA and AID staff involved in DEIDS. Such meetings will also serve for on-sight observation of the activities in progress.

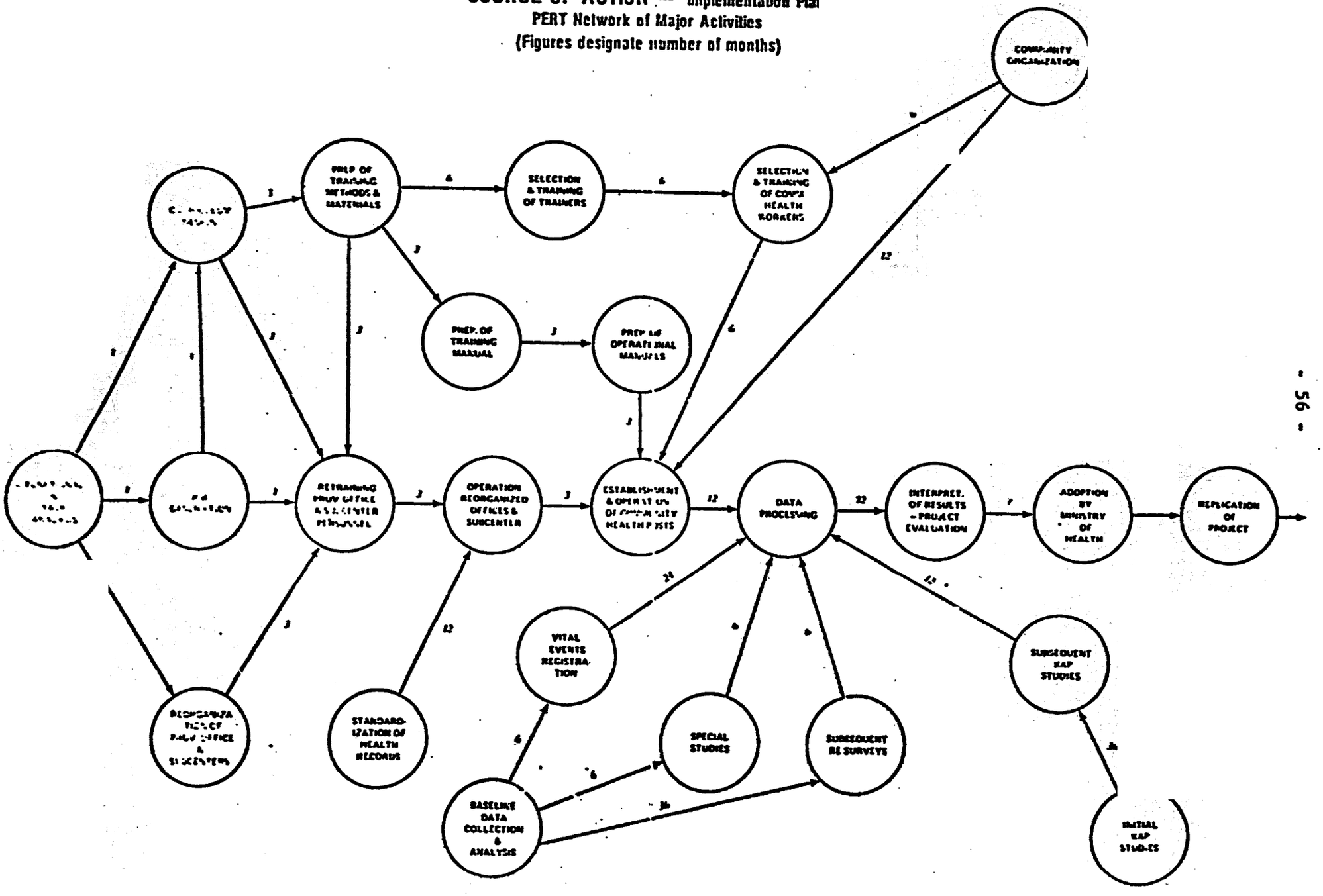
COURSE OF ACTION



COURSE OF ACTION — Implementation Plan

PERT Network of Major Activities

(Figures designate number of months)



III. LOGICAL FRAMEWORK FOR SUMMARIZING PROJECT DESIGN

Project Title: ECUADOR RURAL HEALTH PROJECT

Project Number: _____

From FY 1975 to FY 1983

Date: January 1974

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS
Goal: To improve the general level of health in rural areas of Ecuador, especially for mothers and young children	**Indicators of Goal Achievement:** In the Project area: 1. % Maternal Mortality decreased 2. % Maternal Morbidity decreased 3. % Infant and young child Mortality decreased 4. % Infant and young child Morbidity decreased 5. % Morbidity and Mortality due to infections, communicable and other preventable diseases decreased 6. % Mortality and Morbidity related to malnutrition decreased 7. % Age-specific fertility rate decreased 8. Later age at first pregnancy achieved 9. Intervals between births prolonged
Purpose: To develop an effective health delivery system that will increase the accessibility and acceptability of health services, including MCH, nutrition and family planning services in rural areas of Ecuador, primarily for mothers and young children within the resources of the country, so that it can be replicated elsewhere in Ecuador.	**End of Project Status:** 1. The Provincial Health Offices in the Project area effectively planning, programming and directing development of health activities in their areas of jurisdiction through: a) An established program for training and retraining of personnel b) All levels of health personnel integrated into planning and programming c) An effective system of budgetary programming and auditing d) An effective administration within all levels of the Ministry of Public Health, (i.e. the national, regional, provincial, cantonal, parochial and communal) related to the project area e) An effective and functional system of personnel administration and supervision at all levels f) Coordination with other health providers and related institutions g) Communities integrated into the processes of health planning, programming and evaluation and participating in the delivery systems 2. An effective evaluation unit in the MOPH evaluating the health delivery system includi a) Trained staff b) A Health Information System for data collection c) Adequate health records, kept in all subcenters and health posts d) Rapid data processing and provision of feedback information 3. Rural MOPH subcenters (in the project area) a) Providing adequate supervisory assistance for community health workers b) Acting as referral centers c) Coordinating supplies of medicine and other materials to the community health workers d) Paying greater attention to preventive services e) Increasing services in MCH, Nutrition, F.P., and Environmental Sanitation f) Providing regular doctor visits to the health posts for supervision and consultation 4. A network of rural community health workers in community health posts integrated into the regular MOPH Health System, and reaching 60-70% of the target population of 300,000 with access to health services a) 720 communities with equipped Health Posts b) An adequately trained rural community health worker in each post c) Number of people reached with health services and through home visits and functionin Mothers' Clubs, delivering the following services d) MCH counselling and curative services e) Nutrition counselling and curative services f) F.P. information, motivation and services g) Environmental Health information h) Minor curative and emergency first aid treatment i) Referral to health subcenter and regular doctor j) Health Education
Outputs: 1. Baseline Data Collection	**Output Indicators:** 1. a) Mapping of project area b) Population census of communities completed, including age, sex, etc. by household c) Educational status of communities (including languages spoken) determined d) Family income and occupation status, including land use, collected e) Community organizations identified and community health councils developed f) Mortality survey completed g) Morbidity survey completed h) Health beliefs, practices and sources of health care determined, including traditional medicine practitioners i) Immunization status determined j) Food habits and taboos determined k) Family planning and fertility baseline data collected l) Environmental sanitation situation and necessities determined
2. Training methods and materials developed	2. a) Personnel functions, tasks, and job description defined b) Curriculum designed c) Audio-visual aids and games developed d) Other training materials developed e) Training manual developed f) Operational manuals developed for Health Subcenters and Health Posts
3. Personnel trained	3. a) Training staff selected

	e) Community Health Workers selected and trained
4. Community health posts established and equipped	4. a) Communities motivated to support and participate in the program b) Community organization formed c) Health facilities built d) Health facilities equipped and medicines in place e) Working relationship established between Community Health Workers and traditional health practitioners
5. Specific services program organized in subcenters and health posts	5. The following services operating: a) Maternal and Child Health (including midwifery) b) Nutrition c) Family Planning d) Immunization e) Environmental Sanitation f) Homemaking and Home Economics
6. Provincial Health Office and Subcenter system reorganized and personnel retrained	6. a) Tasks reassigned and new job description developed b) Staff retrained and integrated into planning and evaluation of programs c) Personnel administration and supervision operational procedures developed and approved by the Ministry d) Contents and methodology of health education defined for i) health services personnel ii) the communities e) Outreach and follow-up health services program developed f) Budgetary programming and auditing system developed
7. Cost Analysis system developed	7. a) Development costs determined b) Training staff and training costs identified c) Start up costs of project separated from continuing costs d) Data collection, evaluation and analysis completed e) Component parts of project re-designed to improve cost-effectiveness ratio and make more applicable the expansion of the project
8. Results evaluated	8. a) Standardized health information system set up b) Vital registration system established c) Periodic sample surveys completed d) Data processed e) Results interpreted f) Recommendations from project resulted in a change in the Five Year Health P

Inputs	Input Categories
USAID PROJECT	
1. Cost of Project	1. Total Annual Cost (in US$000)
2. Manpower	2. a) Academic (man-months) b) Non-Academic (man-months) c) Consultants (man-months)
3. Training courses and Seminars	3. a) New Health Workers (number of months) b) Retraining of old staff (number of months) c) Special courses - motivational training (number of weeks)
4. Participant training	4. a) Long Term (man-months) b) Short-Term (man-months)
5. Commodities	5. a) Program support materials (US$000) per annum) b) Training Materials and Services (US$000) per annum) c) Evaluation Materials and Services (US$000) per annum) d) Equipment and Medicines for Health Subcenters (supplementary) and Health Posts (US$000) per annum) e) Travel (US$000) per annum)
6. Other Direct Costs	US$000 per annum
COUNTERPART CONTRIBUTION	
A. Ministry of Public Health	
1. Cost of Project 2. Manpower	1. Total Annual Cost (in US$000) 2. a) Staff for Project (man-months) b) Community Health Workers (120 new and 20 old) i) Number ii) Remuneration (Cost in US$000)
3. Training	3. a) Facilities in the Health Subcenters (number) b) Facilities in the Hospitals (number) c) Supervisory Staff from Health Subcenters (man-weeks)
4. Commodities	4. a) Project Office (2 rooms) in Cuenca - space and telephone (cost in US$000) b) Provincial Health Office - space and telephone (cost in US$000)
OTHER AGENCIES	
A. Peace Corps	
1. Manpower - Training	a) Nurses (number) b) Health Educators (number) c) Nutritionists (number) d) Audio-Visual specialist (number) e) Statistician/Computer [illegible] (number)

						MEANS OF VERIFICATION	ASSUMPTIONS
[illegible]	FY1976	FY1977	FY1978	FY1979	FY1980	1. Continual Project Evaluation	
[illegible]	5	7.5	10	12.5	15		
[illegible]	5	7.5	10	12.5	15	2. Review of records and report	
[illegible]	8	12	16	20	24		1. Rural health services continue to be a priority of the Government of Ecuador
[illegible]	8	12	16	20	24		2. There is a relatively stable political situation
[illegible]	15	20	25	30	35		3. The economy remains stable with no serious inflation or depression

[illegible]formance Targets

[illegible]	FY1976	FY1977	FY 1978	FY 1979	B O P		
			Cañar Pr.	Azuay Pr.	Loja Pr. 3 Prov.	1. a) Observation visits b) Inspectioning Office Activities c) Review of office records and reports	4. Rural populations, which will have representation on the Health Sub-center Committees in the development, and functioning of SEIDS, will accept the community health workers and the services offered.
			Cañar	Azuay	Loja	2. a) Review of Evaluation Staff operations b) Inspection of health records c) Records and Reports	
					3 Prov.		
			Cañar	Azuay	Loja	3. a) Field visits b) Observation of health center activities c) Inspection of records d) Review of reports	
					3 Prov.		
					3 Prov.	4. a) Field visits b) Observation of activities c) Inspection of records d) Review of reports	
			Cañar	Azuay	Loja		
60	180	300	420	540	720		
60	180	300	420	540	720		1. There is cooperation and collaboration of the communities in the project
[illegible],000	120,000	210,000	280,000	360,000	480,000		
"	"	"	"	"	"		2. The Government of Ecuador will modify its rural health services delivery system in accordance with the findings of the project, if they prove to be more cost-effective
"	"	"	"	"	"		
"	"	"	"	"	"		
"	"	"	"	"	"		3. The Government of Ecuador will continue its present policy of offering family planning as an integral part of general health services
"	"	"	"	"	"		
"	"	"	"	"	"		
"	"	"	"	"	"		

[illegible]ining Targets:

[illegible]1975	FY1976	FY1977	FY 1978	FY 1979			
60	180	300	420	540	720	1. a) Baseline study records b) Review of reports	4. Ministry of Public Health, doctors, nurses and other professionals accept the legitimacy of para-medical personnel providing basic health services

RAP Azuay Loja

3. a) Review of training curricula
b) Inspection of training records
c) Review of training reports
d) Review of training and operational manuals

X	180	300	420	540	660
X	180	300	420	540	660
60					
60					
	180	300	420	540	660

Canar Azuay Loja

3 Prov.

3 Prov.

a) Field visits
b) Review and analysis of administrative policies and procedures in the Provincial Health Office, Health Subcenters, Health Posts and the community
c) Inspection of records in the subcenters and Health Posts
d) Review of reports

7, 8.
a) Review and analysis of health records in the health subcenters and community health posts.
b) Review and analysis of routine statistical reports
c) Review and analysis of reports and sample surveys and other special studies

BUDGET AND IMPLEMENTATION SCHEDULE

	FY1976	FY1977	FY1978	FY1979	FY1980
2357	57	57	57	57	57
b405	405	405	405	405	405
c 12	12	12	12	12	12
3a)12	12	12	12	12	12
b 8	8	8	8	8	8
c 8	8	8	8	8	8
4a)	36	36	36	36	36
b 24	12	12	12	12	12
5) 52.8	52.8	52.8	52.8	52.8	52.8
b 37.8	37.8	37.8	37.8	37.8	37.8
c 12.5	12.5	12.5	12.5	12.5	12.5
d 14.2	14.2	14.2	14.2	14.2	14.2
e 24.8	24.8	24.8	24.8	24.8	24.8
6) $1	$1	$1	$1	$1	$1
1.					
2)96	96	96	96	96	96
b 40	200	320	440	560	680
4a 4	8	8	8	8	8
b 2	3	3	3	4	5
c 48	96	96	96	96	96

1. DEINS Project Documentation
2. Project vouchers
3. Project records
4. Project reports

1. There is enough flexibility in the Ministry of Public Health structure to allow for reorganization and retraining of personnel
2. The Government of Ecuador meets its commitments to the Project.
3. The Peace Corps continues to support the Project with manpower for training

ECUADOR DEIDS PROJECT

II. NARRATIVE ACCOUNT

SECTION A: GOAL

Sub-Section A1: Goal

The Development and Evaluation of Integrated Delivery Health Systems (DEIDS) Project has as its goal:

> To improve the general level of health in rural areas of Ecuador, especially for mothers and young children.

This goal adheres to the national health policy and Five-Year Health Plan of the Government of Ecuador. Having recognized the lack of health services and medical care systems, and the scarcity of human and economic resources, in the rural areas, which contain more than 60% of the country's population, the Government of Ecuador has as one of its priorities the creation and organization of health systems which will distribute the resources and extend services to the rural areas of the country. Ecuador's priority areas include:

(a) a reduction of deaths due to preventable causes
(b) nutrition programs for vulnerable groups
(c) basic sanitation programs in the rural areas
(d) extension of services network for maternal and child care
(e) development of statistical information systems needed for planning, evaluation and decision-making

The stated goal of the DEIDS project is consistent with the national goals with emphasis on maternal & child health, nutrition & family planning.

Sub-section A2: Indicators of goal achievment

The project's goals will be realized when the following is achieved in the project area:

(1) Decrease in maternal mortality rate.

The maternal mortality rate in Ecuador, which is currently running at 2.3 per thousand, is amongst the highest in Latin America. This is mainly due to the fact that the vast majority of births (nearly 100% in rural areas) are unattended by trained personnel. Improvement of pre-natal, post-natal and midwifery services will help to lower this appalling mortality rate.

(2) Decrease in maternal morbidity rate.

As a result of a lack of supervision in pregnancey and delivery there are many preventable conditions which take a toll of the mother. These include toxemia of pregnancy, anemia of pregnancy, and a generally poor state of nutrition all of which have a deleterious effect on pregnancy and its outcome. Provision of basic care and health services for these women will reduce the morbidity rate.

(3) Decrease in infant and young child mortality rate.

The main causes of death are parasistic infestation, diarrheas and other gastro-intestinal diseases, malnutrition anemias, respiratory diseases, (including pneumonia and tuberculosis) and other communicable and infectious diseases. Many of these conditions are preventable. By reducing the prevalence of these conditions, the mortality rate of infants and young children will be lowered.

(4) Decrease in infant and young child morbidity rate.

The principal causes of morbidity in infants and young children parallel those of mortality. Reduction of the prevalence of these disorders is an expected result.

(5) Decrease in fertility

The annual population growth rate of Ecuador is currently about 3.4%, and is among the higest in the world. The population will double itself within twenty years, and it is doubtful that economic growth will keep pace with this rapid growth in population. The family planning component of the project will be directed toward

(a) reduction of specific fertility rate,

(b) having first pregnancy at later age, and

(c) prolongation of intervals between births.

Sub-section A3: Goal Targets

The targets set are:

(a) a reduction of 15% in the maternal mortality and morbidity rates at the end of the project.

(b) a reduction of 24% of infant and young child mortality and morbidity rates at the end of the project.

(c) a reduction of 35% of morbidity and mortality due to infections, communicable and other preventable diseases at the end of the project.

(d) other indicators

There were no projections available for mortality and morbidity related to malnutrition, age specific fertility rates or any of

the other family planning indicators. These will be formulated early in the operational phase.

Sub-section A4: Means of verification

Verification will be achieved through the continual project evaluation & review of the records and reports of the project.

SECTION B: PURPOSE

Sub-section B1: Purpose

The stated purpose of the project is:

To develop an effective health delivery system that will increase the accessibility and acceptability of the health services, including maternal and child health, nutrition and family planning services in rural areas of Ecuador within the resources of the country, so that they can be replicated elsewhere in Ecuador.

The plan for achieving this purpose is to develop a multi-purpose health delivery system, which will provide an infrastructure for the health services. This will entail the reorganization of the Provincial Health Office and the Rural Health Sub-centres in the project area and the development of administrative and managerial skills in these institutions to support the services.

The health delivery system will be used as a vehicle for delivering the component parts of the integrated health services. It is proposed that a network of rural community health workers (Promotores de Salud-like individuals) will be established. They will be

chosen from the community by the community and trained in the local health subcentre by the DEIDS project training team. After the training, the community health worker will be based in a health post in the community, the building provided by the community but the basic equipment by the Project.

Sub-section B2: End of project status

(1) An effective Provincial Health Office in the project area In accordance with the plans of the Ministry the project will assist in the development of capabilities for planning, programming and directing the development of health activities under the jurisdiction of the Provincial Health Office in the project area. The following steps will be taken in this regard:

(a) Establishment of a program for training and retraining of personnel. Apart from the professional staff, very little formal training is given to the personnel in the Provincial Health Office. Even professionals are trained in separate unrelated institutions without much consideration to subsequent roles they will be fulfilling. The project will establish training and retraining programs which are job-oriented and which foster a team approach. (Each individual member of the team knows what the other members are doing and so is in a position to refer or defer responsibility to the appropriate member of the team). This would

be accomplished by the relevant training of new personnel and setting up regular in-service workshops and seminars for existing staff.

(b) Integration of all levels of health personnel into planning and programming. Working on the premise that if staff are involved in planning and programming, their co-operation and commitment to the implementation will be more readily available.

(c) Establishment of an effective system of budgetary programming and auditing. Setting up of programs in keeping with the budgetary restraints will bring such programs closer to reality and the process of auditing will guard against preventable losses and promote maximum output of the programs.

(d) Enhancing the effectiveness of administration within all levels of the Ministry of Public Health. As stated above, the Ministry of Public Health is committed to the process of decentralization. However, the extent and the exact mechanism for the attainment of this goal is still in the process of being formulated. In the project area, areas of responsibility and the chain of command will be clearly established from the national level through the regional, provincial, cantonal, parochial and communal levels.

(e) Establishment of effective and functional system of personnel administration and supervision at all levels. As needed new job descriptions will be written for personnel in the project area. Supervision will ensure that minimum standards of performance are maintained.

(f) Cooperation with other health providers, including traditional health practitioners (midwives, curanderos, druggists, herb doctors, etc.) and western-oriented practitioners to try to integrate them into the delivery system. Every effort will be made to win the confidence of the traditional health practitioners. A working relationship would be established between the community health workers and the traditional health practitioners in such a way that rivalry will be minimized. The possibility of giving formal training to the traditional health practitioners will be explored.

(g) To achieve coordination and cooperation with other agencies and institutions which are working in the health family planning and nutrition field in the same area, the Provincial Health Office will identify all health agencies and institutions and an effort made to coordinate health activities of the project and other activities in the Province.

(h) Community involvement in the process of health planning, programming and evaluation. A health delivery system

which attempts to affectively serve the community must have participation by the community for success. Community involvement and participation will be fostered and encouraged.

(2) An effective evaluation unit in the Provincial Health Office. At present, evaluation of programs and services at the provincial level is non-existent. The DEIDS project could make a much needed contribution be establishing this capability. Among other things, it would give direction to the programming and planning for health services. An evaluation component is needed to enable correction and adjustments in programs on a dynamic basis. This unit will be responsible for data collection, processing and evaluati of programs. The establishment of an evaluation unit will involve the following:

(a) Trained Staff

At present there is no personnel with the knowledge or skill in evaluating programs. Candidates within the Ministry will receive the requisite training in the concept and skill evaluation.

(b) System for health data collection.

At present there is no systematic method of collecting health data. A standardized system for the collection of health information will be established by the project. This system will involve compatible data collection in health centers, health subcenters and health posts, although modified according to the kind and level of services

offered. Pre-coded forms will be used as much as possible so that they can be subjected to automated data processing. The forms will be consistent to those used at the national levels.

Training of health personnel will include record keeping. Supervision will be maintained to ensure that records are kept up to date in all health facilities.

(c) Rapid data processing and provision of feedback information

The evaluation unit will collect and analyze the data and provide rapid feedback information for planning and management.

(3) Reorganization of rural health subcenters in the project area. The rural subcenters are inadequate in terms of both numbers, and scope of services provided. The project will reorganize the subcenters and retrain the personnel in order to improve the quality and quantity of services offered. The current Five-Year Health Plan mentions proposed building of Minimal Health Posts ("Puestos Minimos de Salud") which will be smaller editions of Health Subcenters ("Subcentros de Salud") designed for the smaller parroquias. Where these exist in the project area, their functions would be regarded as similar to the subcenters and their reorganization will be along the same lines. However, the establishment of the Community health worker category functioning in the health post

furnished by the community may preclude the need for large-scale construction of the Minimal Health Posts and training personnel to make them. This activity would be very expensive. Reorganization will include the following:

(a) Adequate supervision for the community health workers

The subcenters will serve as the support base for health workers. It is from the subcenter that adequate provision will be made for the supervision of community health worker activities. This requires training of supervisory staff, transportation, and other facilities. It is proposed that part of the stipulated duties of the doctor and nurse operating at the subcenters will be to make regular supervisory visits to the community health posts.

(b) Referral center for the community health workers.

The community health workers, the primary health care providers, require readily available referral centers for their patients' problems. The subcenters will fulfill this function.

(c) Supplies for the community health workers.

The subcenters will serve as a center for the distribution of medicines and supplies to the community health workers. The community health workers will account for for the medicines and supplies which they use.

(d) Emphasis on preventative services.

The present activities in the subcenters are largely

curative. Greater emphasis will be given to preventive service, counselling and health education activities.

(e) Increased scope of services

Added services will include mch, family planning, nutrition and environmental components. Pre-natal and post-natal care and midwifery services for the uncomplicated cases as well as counselling, immunization and curative services will be included.

At present, in the rural subcenters, family planning services are practically non-existent. As part of the integrated health system of the project, family planning counselling and services would be made available not only to post-partum or post-abortal women but also on a voluntary basis to all users of the health subcenter.

Nutrition counselling will be among the activities of the subcenters, with special attention to the needs of children at the time of weening. Food donated by CAR and similar organizations will be distributed more discriminately, the malnourished children having the highest priority. In areas where malnutrition is prevalent, nutrition rehabilitation centers, (out patient and/or residential types), should be set up in connection with the health subcenters.

Environmental health information would also be provided at the health subcenters, including demonstrations

on latrine construction and maintaining safe supplies of water

(4) Establishment of a network of community health posts, manned by a trained rural community health worker.

The most practicable means of taking health services to the majority of the rural population is through the establishment of a network of rural community health posts manned by trained community health (outreach) workers integrated into the regular Ministry of Public Health system. The following steps are proposed:

(a) About 720 communities will be equipped with health posts. This number has been derived from a formula provided by the Ministry of Public Health, which stipulated that a health worker would serve a population of about 1,000 or on the average there would be five health workers per parroquia

(b) A trained rural community health worker will direct each community health post. (These community health workers will be selected from the community by the community. It is hoped that by so doing the workers are more likely to stay in the community and be accepted and respected by its members. Training would be conducted at the local health subcenter rather than in the city in order to avoid the high staff turnover created by the lure

of the city life and to help make training more relevant to rural needs).

(c) Functions will include home visits and the organization of Mothers' Clubs as a means of performing health counselling and health education. The community health workers will deliver the following services:

1. Maternal and child health counselling and curative services which would include pre-natal, post-natal care and midwifery services (for the uncomplicated cases.)
2. Child health counselling.
3. Immunizations.
4. Nutrition counselling and curative services.
5. Family planning information, motivation and services.
6. Environmental health information.
7. Minor curative and first aid emergency treatment
8. Referral to health subcenters and to the regular doctors of the patients:
9. General health education.

Sub-section B3: Performance targets

(1) Within three years of Project initiation in each province, The Provincial Health Office will be reorganized, functioning, and providing many of the aforementioned services through

its subcenters and community health posts. This should take place in Canar province by the fiscal year 1977 and in Azuay and Loja provinces by 1979.

(2) An effective evaluation unit in the Provincial Health Office will be operational in each province in the project area by the end of the project.

(3) The rural health subcenters reorganization in the project area will be completed within three years of the initiation of the DEIDS project in each of the provinces.

(4) Rural community health workers will be progressively added to community health posts.

The first six months of the Project's efforts will be directed to preparation of curricula, recruiting staff and equipping health posts. Actual training of the community health workers will begin the second half of the year. Four simultaneous training courses lasting six months are planned, with 15 students in each course, producing sixty community health workers during the first year of the project. In subsequent years, when training could be conducted throughout the year, the number would be 120 annually, with 720 community health workers having been trained by the end of the project.

The number of people served by health posts is calculated on the basis on one health worker per 1,000 population. Assuming that the health worker reaches 66% of the target population, it is estimated that at least 480,000 people will be reached.

3) The economy remains stable and there is no severe inflation or depression.

4) The Health Subcenter Committee for the DEIDS Project has on its membership the health subcenter staff (nurse and/or auxiliary nurse; sanitary inspector), representatives of community organizations (mothers' clubs, etc.), community health workers, as well as the Project Coordinator and Project Chief of Party. Thus, the directors, purveyors of services and recipients of services will all be brought together in the development and functioning of the delivery system. It is hoped this active involvement on the part of the community will assure acceptance of the services given and of changes that might be indicated.

Sub-section B4: Means of verificatio

(1) The Provincial Health Office

(a) Observation visits

(b) Inspection of office activities

(c) Review of office records and reports

(2) Evaluation unit

(a) Review of evaluation staff operations

(b) Inspection of health records.

(c) Records and reports of the evaluation unit.

3) Health subcenter activities

(a) Field visits

(b) Observation of health center activities

(c) Inspection of records

(d) Review of reports

(4) Community Health Posts

(a) Field visits

(b) Observation of activities in the communities

(c) Inspection of records

(d) Review of reports

Sub-section B5: Assumptions

For linkage of the purpose to the achievement of the goa the following are essential:

(1) Rural health services continue to be a priority of the Government of Ecuador.

(2) There is a relatively stable political situation.

SECTION C: PROJECT OUTPUTS

Sub-section C1: Outputs

The major kinds of results which can be expected from project inputs include:

(1) Baseline data collected.

(2) Training methods and materials developed.

(3) Personnel trained.

(4) Community health posts established and equipped.

(5) Specific service programs organized in community health posts.

(6) Provincial Health Office and subcenter systems reorganized and personnel retrained.

(7) Cost analysis systems developed.

(8) Results evaluated.

Sub-section C2: Output Indicators - Magnitude of Output

(1) Baseline data collected

Health information presently available in Ecuador consists almost entirely of data taken from hospital records and, in some cases, health subcenters. The records reflect the principal causes of death and illness in the hospital and clinic populations. There are no records for non-clinic population of the rural areas and those are the principal target for the DEIDS Project. It is therefore necessary under the project

to collect careful and extensive baseline data against which project accomplishments can be measured. After each community is identified as a site for the health post and training of the community health worker, a team of field workers will be sent to collect data. The following include some of the areas to be covered:

(a) Mapping of project area.

There is no accurate information currently available about either the number of the communities, or the number of inhabitants in many rural areas of Ecuador. The only exception to this is the area covered by the Malaria Eradication Program (SNEM) whose area of operation covers only the extreme western tip of the project area bordering on the coastal geographical belt. It is therefore imperative that the project area be mapped.

(b) Population census.

The first national census of Ecuador was taken in 1950 and recorded a population of 3,202,757. The 1962 census showed 4,476,007, and the 1971 estimate was 6,384,200, excluding nomadic Indians. The coastal region contained about 46% of the population, the Sierra about 51% and the Oriente about 2%. The remainder (about 0.5%) lived on the Galapagos Islands.

(c) Educational status of the communities

It is necessary to have information on the educational and literacy levels of the communities in the project area including the proportions of the population who speak Spanish or Quechua or are bilingual. This information would affect the preparation of health education and family planning materials for use in the health subcentres and the health posts. It would also affect the actual training program for community health workers. If the community is largely Quechua-speaking the selected community health worker will have to be bilingual in order to undertake the training program in Spanish and yet will have to communicate with his or her people in Quechua.

(d) Family income and occupational status, including land use.

This information would be used to assess the economic status of the various communities which in turn would influence the structure of the health services established. Following the collection of demographic information detailed above, the project evaluation unit will undertake a more detailed study of the following:

(e) Community organizations and community health councils.

The proposed health delivery system is community based and therefore requires adequate community organization to support its operation. Each community's organizational structure will be studied and leaders or potential

leaders identified. Leaders could be found either through the Padre of the Teniente Político or from some other source in the community. It will be necessary to ascertain whether the existing community organization will be a suitable base for health activities. If there is no community organization in existence or the existing one is unsuitable for this purpose, it will be necessary to encourage the development of the community health councils. This health council should not only be given the responsibility, but also some measure of authority for operating the health system in the community.

(f) Mortality and morbidity survey.

The main causes of death & illness in the community will be determined at least on a sample basis.

(g) Each community's health beliefs, practices and attitudes to ill health and sources of health care will be determined.

(h) Immunization status.

The immunization status will be determined.

(i) Food habits and taboos.

The factors that infuence nutrition will be studied.

(j) Family planning and fertility baseline data.

Information will be gathered about knowledge, attitudes, and practices (KAP).

(k) Environmental status

Information will be gathered about potable water latrines and methods of waste disposal.

(2) Development of training methods and materials. This would be done in several stages:

(a) The proposed functions of all levels of personnel, including those of the community health workers will be clearly defined and followed by analysis of their normal functions and their tasks in order to formulate a job description for each category of personnel.

(b) A relevant training curriculum, based on these functions, will be designed.

(c) Training techniques, audio visual aids, educational games and other training materials will be developed.

(d) A training manual will be prepared, to ensure standardized training for all of the training teams in the project.

(e) An operational manual will be developed for personnel in the health subcenters and in the community health posts, which will lay down guidelines for their activities.

(3) Training

(a) The training staff will be selected.

There will be four training teams at the beginning of the project, each consisting of the following: 1 Ecuadorian nurse who will be a field professor from the School of Nursing; 2 nurses from the Peace Corps; 1 health educator or nutritionist from the Peace Corps; and 1 Ecuadorian community development worker. The teams will be

supported by the other project staff.

(b) Trainers selected and trained.

There will be a one week orientation and training course for the trainers to enable them to understand the concept of the project and their duties. This course will be organized with assistance from CEMA (Centro de Evaluacion, Motivacion y Asesoria), which has a great deal of experience and success in motivation and fostering the team spirit.

(c) Community health workers selected and trained.

Health workers will be selected from the community by the community. The duration of the training program will be based on the curriculum that is yet to be developed. However, it is estimated that it would take a period of about 6 months to provide adequate training in all of the various project components.

(4) Establishment of the community health posts.

(a) A community organization, if it is not already in existence, will be formed and its attention brought to health matters.

(b) The physical facilities for the health posts will be identified or, if necessary, built by the community.

(c) The health facilities will be equipped with supplies and medicines.

(d) Working relationship will be established between the Community Health Workers and the traditional health practitioners.

(5) The following specific service programs will be organized in subcenters and health posts:

(a) Maternal health, including prenatal, postnatal and midwifery services.

(b) Child health services

(c) Family planning information, motivation and services

(d) Inmunization services

(e) Nutrition counselling and curative services.

(f) Environmental health information.

(g) Home-making and home economics.

(6) Reorganization in the Provincial Health Office and subcenters.

(a) Job descriptions will be developed and necessary tasks reassigned to achieve the objectives of the DEILS project.

(b) Staff will be retrained and integrated into planning and evaluation of programs.

(c) Personnel administration and supervision. Operational procedures will be developed by the project and approved by the Ministry.

(d) The contents and methodology in teaching health education will be defined for (i) health services personnel and (ii) the communities.

(e) Community outreach and follow-up health services programs will be developed.

(f) Budgetary programming and auditing systems will be developed.

(7) Cost analysis system developed in the following stages:

(a) The development costs will be determined

(b) The cost of training the staff will be identified

(c) The start-up cost for the project will be separated from the continuing costs.

(d) Data collection, evaluation and analysis will be undertaken.

(e) The component parts of the project will be re-designed to include the cost effectiveness ratio and thereby make the expansion of the project in other parts of the country more feasible.

(8) Results evaluated.

Results of the project will be evaluated using the following:

(a) Standardized health information system.

(b) Vital registration system

(c) Six-monthly sample surveys

(d) Data processing

(e) Results interpreted

(f) Recommendations from project results in a change in the Five Year Health Plan

Sections 7 and 8 will be further elaborated in the section on evaluation.

Sub-section C3: Output Target

(1) Collection of baseline data.

Paralleling the targets of health post establishment, sixty community interviews will be done in the first year of the project and 720 communities at the end.

(2) The compilation of training methods and materials will b done in the first few months of the project.

(3) Selection of the training staff and their instruction will be completed during the first six months of the project. Community health worker training will commence at the beginning of the project's second six months.

(4) Community Health Posts will be established and equipped (sixty in the first year and 720 by the end of the project).

(5) Initiation of specific service programs in the subcenters and the community health posts will keep pace with the establishment of the posts and the training of the health workers.

(6) In each of the provinces, Provincial Health Office and subcenter reorganization will be completed within three years of project initiation.

(7) and (8) The evaluation activities will be completed by the end of the project.

Sub-section C4: Means of verification

(1) Baseline data

(a) Baseline study records

(b) Review of reports

(2) Development of training methods and materials

(a) Review of training records

(b) Inspection of training records

(c) Review of training reports

(d) Review of training and operational manual

(3) to (6) Reorganization of the subcenters, Provincial Office training and setting up of services in the health posts.

(a) Field visits

(b) Review and analysis of administrative policies and procedures in the provincial health office, health subcenters, health posts and the community.

(c) Inspection of records in the subcenters and health posts.

(d) Review of reports

(7) and (8). Evaluation

(a) Review and analysis of health records in the health subcenters and the community.

(b) Review and analysis of routine statistical reports.

(c) Review and analysis of reports of sample surveys and other special studies.

Sub-section C-B5: Assumptions

The following must be assumed if the outputs are to lead to fulfillment of the purpose of the project.

(1) There is cooperation and collaboration of the communities in the project.

(2) The Government of Ecuador has modified its rural health service delivery system in accordance with those findings of the project which prove to be more cost-effective than present operations.

(3) The Government of Ecuador continues its present policy of offering family planning as an integral part of general health services.

(4) The Ministry of Public Health doctors, nurses and other professionals accept the usefulness of paramedical personnel in providing basic health services.

SECTION D: INPUTS

The Inputs Section will be divided into three main groups of donors:

(i) DEIDS Project

(ii) Government of Ecuador

(iii) Other Agencies

Subsection D1: Inputs, D2: Input Categories, D3: Budget and Implementation Schedule

DEIDS Project

(1) Cost of Project

The total annual cost to DEIDS Project will be about $500,000, which includes limited evaluation as indicated in the Section on Evaluation.

(2) Manpower

(a) UCLA- Initially, it is estimated that there will be about 57 man-months committed to the project, mainly in Ecuador. This includes the UCLA personnel resident

in Ecuador, which will consist of a Chief of Party (physician), a Public Health Nurse-Midwife and a Training and Evaluation Officer.

(b) Ecuador- The initial estimate is that about 405 man-months will be committed. This will include offic administrative and support staff, and field staff for training, supervision, evaluation and other project activities.

(c) Consultants- will be required mainly from UCLA, to work in Ecuador and advise on particular aspects of the projects. This input has been initially estimated at about 12 man - months. It is proposed to use both Senior and Junior Consultants, depending on project requirements

(3) Training Courses and Seminars

(a) The Community Health Workers- Training will be done simultaneously by four project training teams in different locations. This activity will be carried out continuously, i.e. 12 months a year. Although the duration of the course still has to be determined, it is estimated at about 6 months. There will be four courses the first year and 8 separate courses a year thereafter with about 15 students per course.

(b) Re-training of Old Staff. Special courses and seminars will be held for the existing staff of each Provincial Health Office and each health subcentre. The length of the seminars will vary, but for the subcenters

it is estimated at one month. Brief refresher courses will also be held every 6 months for each group of trained community health workers.

(c) Special Motivational Courses. It had been found very useful to hold a special course in motivation and group dynamics at the beginning of each training course given relative to the pilot Promotores program. This practice will be adopted by the DEIDS project. The course lasts one week and CEMA (Centro de Motivación y Asesoría) has made a very good job of it.

(4) Participant Training

The project will need a substantial number of Ecuadorian key personnel to operate it and continue the concepts of the project after its termination, and also for the replication of the project activities. This type of personnel is in very short supply at present. Therefore, it is essential that suitable Ecuadorian candidates be given training in Public Health and other special areas throughout the life of the project. The training facilities for these are not available in Ecuador at present. They will have to be sent to other countries in Latin America or the U.S. for training. It is estimated that long-term training (more than 6 months) will require 36 man-months and short-term training (6 months or less) will need 24 man-months at a cost of about $32,000 annually.

No budgetary provision has been made in the DEIDS project, because of limitations. However, training funds will be sought

from other sources.

(5) Commodities

(a) Program support materials include office equipment, transportation costs relative to training and evaluation activities and other items required for the project, estimated at $52,800.

(b) Training Materials and Services include classroom materials, teaching materials and aids, living quarters, food and costs for the trainees, estimated at $37,700.

(c) Evaluation Materials and Services include IBM plates, cards and fees, computer rental, keypunching, programming, etc. estimated at $12,500.

(d) Equipment and Medicines include supplementation for the health subcentres and the materials needed to equip the community health posts, estimated at $14,200. Once the health delivery system under DEIDS is shown to be desirable and replicable, those costs can easily be assured by the Ministry of Health.

(e) Travel includes costs of travel project staff and consultants. It is estimated at $24,000

(6) Other Direct Costs include communication, mailing, office supplies, conference costs, office equipment maintenance and shipping of equipment, estimated at $51,000.

Government of Ecuador

The main source from the Government of Ecuador is the Ministry of Public Health.

(1) As seen on page 96, it has been estimated that the Ministry of Public Health will be expending at least $233,700 for DEIDS in its first year. This will not mean the addition of new personnel, thereby burdening the Ministry with unexpected costs, but rather the utilization of personnel already on duty in the region for the DEIDS activities. Only the DEIDS Project Coordinator is a newly created post, but this man will be mobile as DEIDS extends. The others will remain in Canar Province after DEIDS extends to other provinces.

This estimate does not include the costs related to the service facilities which will continue and increase from year to year. It also does not include the inputs by the local communities each of which will be donating an existing building or constructing a new one for the use of the community health workers, as well as giving their time to serve on committees, in mothers' clubs, etc.

The Minister of Health early in DEIDS discussions expressed his willingness to raise the projected budgets for the DEIDS area for any one year to the total projected prior to DEIDS for that same area in the subsequent year. This would allow a small cushion for extraordinary expenses.

All expenses assumed for Year I by the Ministry would certainly be continued in ensuing years since the personnel are regular civil service employees now in situ. This is exactly in line with the DEIDS concept.

(2) Manpower

(a) Staff for Project. The Ministry has made a committment for 96 man-months to administrative aspects of the project. The categories of personnel are Project Co-ordinator (physician, full-time on the project), a secretary, and a chauffeur. In line with the expectations of the DEIDS Project, that the personnel already in the experimental region be utilized, the services of the following employees of the Provincial Health Office are also assigned to the program by the Ministry: nurse, social worker, statistical assistant and health educator.

(b) Community Health Workers. The Ministry has indicated that it will officially fully integrate this cadre of workers into its health services structure, and assume responsibility for them in terms of salaries and other costs. It was strongly argued that, judging from experience in the pilot Promotores project, unless these health workers were paid a salary, it would be impossible to motivate them to work full time and to feel responsible to the Ministry of Health requirements. The Ministry is now considering how much to pay them and the mechanism for the

payment. The number of such workers would be 20 from the Promotores pilot project and an additional 120 each year, with a total of about 720 at the end of the project.

(3) Training

(a) Ministry of Health

The Ministry will make available for the training courses, the facilities in the health subcentres and hospitals. In addition, it will provide supervisory staff from the health subcentes. However, as already stated, this would be difficult to arrange, in view of the severe shortages of trained staff at the subcentres.

(b) Peace Corps

The main donor at present in this category is the U.S. Peace Corps. They will provide the majority of the skilled personnel for training. It should be stressed that the training program is dependent upon this contribution. It is expected that as Ecuadorian nationals are trained to carry out the needed functions, the involvement of the Peace Corps will be diminished. The Peace Corps has promised 8 Nurses (RN) preferably with Public Health training, 2 Health Educators, 2 Nutritionists, 1 Audio-Visual Specialist and 1 Statistician.

(4) Commodities.

The commodities provided by the Ministry include Office Space with telephone installed in Cuenca and at the respective Provincial Health Office.

Subsection D4: Means of Verification

These inputs will be verified from:

(1) DEIDS Project Documentation

(2) Project Vouchers

(3) Project Records

(4) Project Reports

Subsection D-C5: Assumptions

The Outputs will be produced when the following assumptions are realized:

(1) Re-organization and training of personnel is done.

(2) The Government of Ecuador meets its comittments to the Project.

(3) The U.S. Peace Corps continues to support the Project with manpower for training until nationals are trained to take over; or failing that, alternative source of support could be found.

SECTION E: EVALUATION

Introduction

The nature of the DEIDS program is one of dynamic planning based on educated decision, with pragmatic trial and error as a working methodology. It is not based on a series of controlled experiments. Thus, the evaluation aspect of the program is one of "process" more than of "outcome" measurement.

Major issues to be explored by the limited evaluation system

(1) Levels of health and nutrition services actually delivered by the program.

(2) Reduction in maternal and infant mortality.

(3) Levels of acceptance and continued use of family planning achieved by the program.

(4) Characteristics (age, parity, method) of the acceptors and continuing users.

(5) Child spacing achievements.

(6) Reasons for use or non-use of the service.

(7) Overall cost of organizing and maintaining the program.

Evaluation Activities

(1) Collection of Baseline Data

It is proposed that collection of detailed baseline data of the project area take place, to support whatever depth of evaluation is eventually undertaken. The following is an outline of the areas to be covered.

(a) Mapping of project area

(b) Population census and demographic analysis

(c) Physical, economic, social and other characteristics

(d) Registration of births and deaths

(e) Initial KAP surveys on health

(f) Initial KAP surveys on family planning

(g) Initial KAP surveys on nutrition

(h) Environmental health facilities and practices

These will be done by the Project Evaluation Unit, assisted by mappers, census takers and interviewers, employed for the purpose.

(2) Service Statistics

These are records of the day-to-day activities occuring in the service delivery outlets and provided by the health personnel on client records form, register and monthly reports.

(a) Health statistics, comprising

(i) Maternal care forms

(ii) Pregnancy reporting

(iii) Child care forms

(b) Family planning statistics

(c) Nutrition statistics

(d) Coverage statistics

(3) Processing Health Statistics and Family Planning Data

Summary tables will be produced from the monthly reports, on such items as characteristics of acceptors of maternal and child care services and family planning. This activity will be undertaken by the Provincial Office Evaluation Unit in collaboration with the Project Evaluation Unit.

The Project Evaluation Unit will also address itself to the major issues listed at the beginning of the section, and carry out the documentation evaluation of the areas mentioned.

ECUADOR DEIDS PROJECT

Budget Estimates for 1st Five Years*

Description	1st period same as detailed budget	2nd Year	3rd Year	4th Year	5th Year
PERSONNEL					
In Ecuador					
UCLA	71,500	76,890	82,720	88,924	95,593
Ecuadorean	45,900	45,900	49,342	53,042	57,020
In U.S.A.					
Academic	),100	44,720	47,988	51,587	55,456
Non-academi(	;,600	48,131	51,742	55,622	59,793
Fringe Benefits	),282	37,787	40,617	43,662	46,937
Allowances	,3,265	36,327	39,681	43,337	47,336
EQUIPMENT	79,694	78,783	59,964	65,960	72,556
TRAVEL	24,045	27,020	29,696	32,665	35,931
OTHER DIRECT COSTS	68,700	67,240	85,340	93,874	103,261
TOTAL DIRECT COSTS	422,086	462,798	487,090	528,673	573,883
INDIRECT COSTS	78,074	88,099	97,938	107,731	118,504
GRAND TOTAL	500,160	550,897	585,028	636,404	692,387

TOTAL FOR THE FIRST FIVE-YEAR PERIOD . $2,964,876.00

* The yearly increments reflect normal increases in the cost of living.

EXPENDITURES OF MINISTRY OF PUBLIC HEALTH RELATIVE TO DEIDS*

(Estimates for 1st Year of Project)

		Annual ($)
1.	**Personnel**	
	a) Project Coordinator (MD)	4,000
	b) Nurse	2,400
	c) Social worker	1,800
	d) Statistical assistant	1,500
	e) Secretary	1,200
	f) Chauffeur	1,200
	g) Health educator	1,800
	h) Auditor	1,800
	120 Community health workers - remmuneration @ $40/month	57,600
2.	**Training**	
	a) Facilities in the health subcenters b) Facilities in the hospitals c) Supervisory staff from health subcenters	106,500
3.	**Commodities**	
	a) Project office in Cuenca - space and telephone installation	2,400
	b) Provincial Health Office - space and telephone installation	1,500
	c) Construction of five new Health Subcenters	50,000
	TOTAL	$233,700

*this does not include costs related to service facilities nor the costs of inputs by the local communities.

PEACE CORPS

Training Personnel

8 nurses

2 health educators

2 nutritionists

1 audio-visual specialist

1 statistician/systems analyst

NOTE:

These have been discussed and agreement secured from Mr. Edmund de Jarnette, the Peace Corps Director in Ecuador. He has already started recruiting to meet this commitment. Should it turn out that this commitment cannot be met, it will be necessary to seek training personnel from other sources through the DEIDS project.

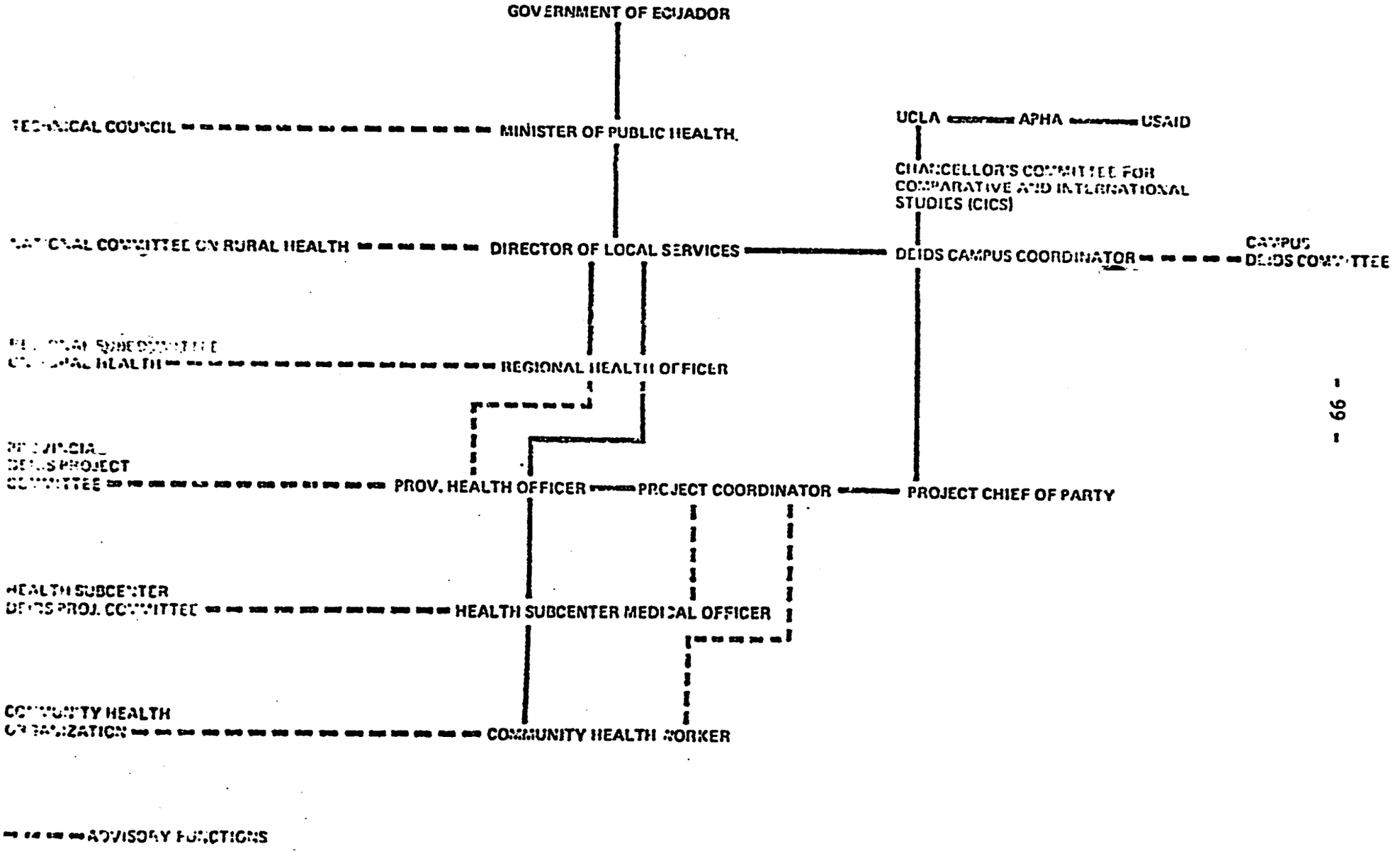
V. APPENDICES

A. DEIDS Project Organization

Beginning during the reconnaissance phase of DEIDS in Ecuador, the Ministry of Public Health demonstrated great interest. This was manifested in the high level of Ministry staff who met with the reconnaissance team members and who continued their interest throughout Phase II. As the planning evolved appropriate committees were formed so that the necessary decision-making and advisory elements are in force for Phase III development activities.

The Minister of Public Health, Dr. Raúl Maldonado Mejía, met with our Reconnaissance Team on a number of occasions, with the pre-Phase II Team and with the Phase II Planning Group. He was kept abreast of developments by the APHA visiting staff and by UCLA consultants all along the way and his approval was sought by his staff before crucial decisions were made.

DEIDS PROJECT ORGANIZATIONAL CHART



B. Ecuadorean Committees Involved in DEIDS

1. Ministry of Public Health - TECHNICAL COUNCIL

Chairman: Dr. René Calle, Director of Technical Services

Members : Dr. José Alvarez, Director General of Public Health
Dr. Julio Larrea, Director of Local Services
Dr. Sixto Valdéz, Director of Administrative and Acting Subsecretary of Health Services
Dr. Joaquín Purcallas, Country Representative of Pan American Health Organization
Dr. Oswaldo Egas, Chief of Health Planning Division
Dr. Gustavo Martínez, Chief of Epidemiology Division
Dr. César Troncoso, Chief of Nutrition Division
Dr. Hugo Corral, Chief of Population Division
Dr. Luis Camache, Chief of Development and Health Division, Ministry of Public Health and Head, Department of Preventive Medicine, Social Security
Lcdo. José Pérez, Sanitary Engineer, Chief of Environmental Health Division
Dr. Walter Fortún, Rural Health Advisor, Pan American Health Organization
Maria Baragán, Chief of Nursing Division

Function: The Technical Council, composed of the Director General of the National Health Services, the Directors of the three Services directly under him, and the Chief of the major Divisions under the Services, is the overall policy group of the Ministry in relation to DEIDS.

2. Ministry of Public Health - PLANNING COMMITTEE

Chairman: Dr. Julio Larrea

Members : Dr. José Alvarez, Director General of Public Health
Dr. René Calle, Director of Technical Services
Dr. Oswaldo Egas, Chief of Health Planning
Dr. Walter Fortún, Rural Health Advisor, Pan American Health Organization
Dr. Vicente Ruilova, Chief Health Officer of Southern Region
Dr. Bolívar Salinas, Chief Health Officer of Cañar Province

Function: The Chiefs of the various Departments of the Ministry participated in the planning sessions relative to their respective areas of responsibility.

3. Ministry of Public Health - NATIONAL COMMITTEE FOR RURAL HEALTH

Chairman: Director General of Public Health

Members : Director of Local Services
Chief, Division of Rural Health
Chief, Nursing Division
Chief Health Officer of each Health Region
Representative, Association of the Faculty of Medical Schools
Representative of each Medical School in Ecuador

Function: This Committee, established by Legal Decree, is involved with Rural Health Policy within the Ministry.

4. SOUTHERN REGIONAL SUBCOMMITTEE FOR RURAL HEALTH

Chairman: Chief, Regional Health Office

Members : Regional Chiefs of - Epidemiology Division
Development and Health Division (including MCH, FP and Nutrition)
Health Education Division
Environmental Sanitation Division
Nursing Division
Representative of - Medical Faculty
Medical School
Nursing School
School of Obstetrices
Rural Medical Officers
Rural Nursing Officers
Representative of each Provincial Health Office.

Function: This committee serves as a forum for needs in rural health in the Southern Region (where the DEIDS Project is to be implemented). It serves in an advisory role and can make suggestions to the Ministry.

5. DEIDS PROJECT COMMITTEE OF CAÑAR PROVINCE

Chairman: Chief Provincial Health Officer for Cañar

Members : Project Coordinator
Project Chief of Party
Provincial Chiefs of - Epidemiology Division
Development and Health Division (including MCH, FP and Nutrition)
Nursing Division
Environmental Health Division
Health Subcenter Medical Officers

Function: This Committee serves as an administrative coordinating group in the actual work situation.

6. HEALTH SUBCENTER COMMITTEE FOR DEIDS PROJECT

Chairman: Health Subcenter Medical Officer

Members : Project Coordinator
Project Chief of Party
Health Subcenter Staff - Nurse and/or Auxiliary Nurse
Sanitary Inspector
Representatives, Community Organizations
Representatives, Community Health Workers

Function: This Committee brings together the directors, purveyors of services and recipients of services (in the form of representatives of the community organizations).

C. Chronological Account of DEIDS in Ecuador

October 24 - November 2, 1972

DEIDS Reconnaissance Visit to Ecuador. Team composed of: Dr. Renato M. Royo, Dean of Studies, School of Public Health, Puerto Rico; Mr. David E. Wilson, International Management Consultant; Dr. Donald T. Rice, Associate Director, DEIDS, APHA, and Dr. Herbert T. Dalmat, Assistant Director, DEIDS, APHA. During this visit, the consultants and APHA visitors were accompanied by Ministry of Public Health key staff to health facilities in two of the four Health Regions of the country. Meetings held with Ministry of Public Health, technical Advisory Committee and many other government agencies.

December 12, 1972

APHA, together with consultants who accompanied our staff on site visits to Panama, Honduras, Ecuador, Nicaragua, chose Ecuador as the most appropriate country for DEIDS among those we considered from Latin America.

January 7, 1973

AID/W was formally advised of APHA's decision and it was requested that USAID/Ecuador be advised. Request was also sought through AID channels for concurrence of the MOH for Phase II of DEIDS - Planning of the Project.

February 13, 1973

Received formal agreement from AID/W for APHA to carry out Phase II in both Ecuador and Panama.

March 1973

AID/W notified USAID/Ecuador that that country was chosen for DEIDS.

April 18, 1973

Official notification that the MOH of Ecuador was anxious to have Phase II go ahead in his country. Minister wrote official letter to this effect.

May 18, 1973

School of Public Health of UCLA chosen to supply necessary consultants for Phase II Planning.

June 6-14, 1973

Pre-Phase II Planning Visit to Ecuador. Team composed of: Dr. Elwin Svenson, Assistant Chancellor UCLA and Executive Officer, Committee on International and Comparative Studies; Dr. Aaron Ifekwunigwe, Assistant Professor of Public Health and Pediatrics, UCLA, and Dr. Eugene Boostrom, Community Medicine, School of Public Health, UCLA; APHA staff consisting of Drs. Hood, Rice, and Dalmat. This visit was carried out to determine if the University and the Ministry of Public Health of Ecuador were satisfied to work together.

July 17, 1973

Dr. Ifekwunigwe, UCLA staff member responsible for Phase II (Planning), prepared a written proposal for the planning phase.

July 26-27, 1973

Dr. Merrill and Dr. Dalmat, APHA staff, met with staff of UCLA to discuss proposed "plan for planning".

August 24, 1973 - December 20, 1973 (except for 3 weeks during this period)

Dr. Ifekwunigwe and his consultants (for varying time periods) from the University of California worked on Ecuador Plan for DEIDS with Ecuadoreans assigned by the Minister of Health. (Dr. Dalmat in Ecuador for the preparation and initiation of this activity, August 16-28.)

VI BACKGROUND DATA

BACKGROUND INFORMATION

I. GEOGRAPHY

Ecuador, the second smallest independent state in South America (next to Uruguay), is bounded on the west by the Pacific Ocean, on the north by Colombia and on the east and south by Peru. Geographically, Ecuador is a region of great contrast. It has semi-desert lands and steaming tropical jungles, low-lying coastal belts and Amazonian plains separated by mighty ranges of the Andes which provide a galaxy of snow-capped peaks within a few miles of the equator. It has an area of 104,506 square miles.

Ecuador is divided into four main geographic regions: the Sierra Region, or Highlands, the Coastal Region, the Oriente Region, and the Galápagos Islands.

Of Ecuador's four geographic regions the area of chief commercial production is the coastal area. It is occupied by people who take their politics seriously and includes Ecuador's largest city, Guayaquil. The Andean highlands, in the Sierra region are occupied mostly by people of pure or nearly pure Indian ancestry. The highland population is groups in about ten intermontane basins, each more or less isolated. It is in the midst of this high country that Ecuador has its capital, Quito. The third physcial division of the country, the Oriente, is very thinly inhabited and largely inaccessible. The discovery of oil deposits in the area will undoubtedly change this pattern.

1. The Highlands - The highland region is made up of a series of more or less separate clusters of people each located in and around the margins of one of the intermontaine basins. These basins are between the two cordilleras of the Andes at elevations between 7,000 and over 9,000 feet.

Outside of Quito and Cuenca, the second and third cities of Ecuador in terms of size, the population is predominantly Indian. In Quito and Cuenca are concentrated the relatively small proportion of people of Spanish ancestry. Among these people are the owners of large tracts of land in the high basins, usually the most productive parts of these basins. The pure-blooded Indians are concentrated on the poorer lands or may work as tenants or as wage laborers on the large properties. The poorer lands that are left to the Indians are the more porous soils and the drier areas of the basins, and the steep slopes of the bordering mountains.

Land use throughout the highland region depends to a great extent on altitude. In the deeply cut valleys that lie well below the general level of the basins there are plantations of sugar cane. The best lands of the basins, however, are used for the growing of maize and the pasture of dairy cattle. This combination of maize production and dairy pasture is found all the way from the basin of Ibarra in the north to Loja in the south. The greatest concentration of dairying is in the basin of Quito and the basin of Cuenca. Still higher and on the poorer lands left to the Indians the chief crops are potatoes and barley, which the Indians use for their own food supply. So great is the pressure of people on the land that these crops are grown high above the basins on the steep slopes of the bordering mountains. On the slopes of Mt. Pichincha west of Quito, Indian subsistence farmers occupy every available bit of land above the Quito basin up to elevations of nearly 12,000 ft. Potatoes can be grown to an average elevation of 10,500 ft. and to an extreme elevation of 11,800 ft. Still higher, the grass-covered slopes below the snow line are used for the pastur of sheep. The high basins are tied together by a railroad, all-weather automobile highways and airplane service.

2. The Coastal Region - The second of the two major regions into which Ecuador may be divided is the coastal region, which lies between the western base of the Andes and the Pacific Ocean. Within this region there are two major subregions and two smaller subregions. The largest concentration of people, and the area in which most of Ecuador's export products originate, is in the lowland of the Guayas and along the eastern side of the Gulf of Guayaquil. This region centres on Ecuador's largest city, Guayaquil. The population of this area is predominantly mestizo, a mixture of Spanish and Indian. Production comes chiefly from large estates on which there are tenant farmers or on which workers are paid wages. The wet lowland upstream from Guayaquil, drained by the four tributaries of the Rio Guayas, has long been used for the production of cocoa. In fact this is one of the best places in the world for the growth of the cocoa tree. But long use of inadequate methods of cultivation and resulting high costs of production make it difficult for Ecuador to compete with the cocoa area of Africa and Brazil. Although it is still one of the cocoa-producing areas of the world, it is no longer a major one.

The crop that brought speculative prosperity to Ecuador after 1940 was the banana. Banana plantations invaded the cocoa area and extended southward along the western piedmont of the Andes, east of the Gulf of Guayaquil.

3. Oriente Region - The third major physical division of Ecuador is Oriente, the part that lies east of the Andes. Oriente is a little-known area, difficult of access from either west or east. Compared with the country farther east in Peru, this Andean piedmont is somewhat high in elevation. Along the eastern base of the mountains there is a zone of upended strata forming cuestas (steep ridges facing the Andes), and in the midst of the dense tropical rain forests east of the cuesta belt there are isolated

mesas. The tropical jungles and flat valleys are along tributaries of the upper Amazon basin.

4. The Archipiélago de Colón (Galapagos Islands). - The Galapagos form an archipelago officially known as the Archipiélago de Colón. It is made up of five larger and nine smaller islands of volcanic origin covering a total area of almost 3,000 square miles. They are sparsely inhabited and do not form an essential part in the life of Equador. The waters around them have provided some financial benefit in the form of fishing rights by foreign companies.

II. HISTORY

There are three distinct periods in the history of Ecuador; pre-Colonial, Colonial and Republican.

1. Pre-Colonial Period - The present Ecuadorian territory was not associated with any of the great aboriginal cultures. It lay on the outskirts, a land of passage, between the Caribbean and Colombian cultures to the north and the Inca Empire to the south. No major remains have been found of relatively advanced aboriginal civilizations, even though there was gold in the rivers and mountains, the land was much more fertile than that of Peru, and the coast was less impenetrable than the jungles and marshland of Columbia. In three places on the coast archeologists have discovered small objects of clay and gold, in one of them carved stone seats as well, but there is not enough evidence that great aboriginal cultures flourished in this region. In the Sierra, close to the present frontier with Columbia, pottery has been found, and some more objects were discovered in the south, but apart from these, there is little else.

CHART I

Area and Population of Ecuador

Political divisions and capital cities*	Area (Sq. Mi.)	Population (1962 census)					Population (1971 est.)
		Urban	% of total	Rural	Total	Density per sq.mi	
Regions							
Provinces							
COSTA (Coast)							
El Oro (Machala, 32,770; 63,000)	3,053	67,455	42.0	93,195	160,650	52.6	251,200
Esmeraldas (Esmeraldas, 33,555; 62,900)	5,680	39,619	31.7	85,262	124,881	22.0	184,800
Guayas (Guayaquil, 515,489; 835,800)	7,368	574,197	58.6	405,026	979,223	132.9	1,464,000
Los Ríos (Babahoyo, 21,314; 23,200)	3,076	51,288	20.5	198,774	250,062	81.3	370,800
Manabí (Portoviejo, 38,226; 49,700)	7,602	124,974	20.4	487,568	612,542	80.6	843,400
ORIENTE (East)**							
Morona-Santiago (Macas, 1795; 2,200)	....	4,442	17.4	21,061	25,503	....	42,500
Napo (Tena, 3,480; 1,600)	....	1,809	7.5	22,444	24,253	....	40,400
Pastaza (Puyo, 3,723; 3,700)	....	2,290	16.7	11,403	13,693	....	22,800
Zamora-Chinchipe (Zamora, 1,352; 1,700)	....	1,885	16.4	9,579	11,464	....	19,000
SIERRA (Mountain)							
Azuay (Cuenca, 74,765; 79,100)	3,221	69,722	25.4	204,920	274,642	85.5	320,200
Bolívar (Guaranda, 14,685; 11,900)	1,238	15,422	11.7	116,229	131,651	102.2	183,800
Cañar (Azogues, 9,731; 9,300)	1,614	14,801	13.1	97,932	112,733	69.8	138,000
Carchi (Tulcan, 21,980; 23,200)	1,531	27,260	28.8	67,389	94,649	59.9	122,800
Chimborazo (Riobamba, 61,411; 55,200)	2,312	59,878	21.6	216,790	226,668	119.2	384,000
Cotopaxi (Latacunga, 24,400; 17,500)	2,261	24,294	15.7	130,677	154,971	69.2	241,500
Imbabura (Ibarra, 35,187; 38,500)	3,458	47,538	27.3	126,501	174,039	50.3	217,500
Loja (Loja, 30,409; 39,900)	4,419	48,751	17.1	236,697	285,448	64.2	398,600
Pichincha (Quito, 362,111; 551,200)	5,976	374,308	63.7	213,527	587,835	98.4	876,200
Tungurahua (Ambato, 53,372; 78,000)	1,366	62,413	34.9	116,296	178,709	130.8	263,000
ARCHIPIÉLAGO DE COLÓN							
Territory							
Archipiélago de Colón (Galápagos Islands) (San Cristobal, 336;...)	3,075	....	....	2,391	2,391	0.8	3,800
Total	109,483	1,612,346	36.0	2863,661	4476007	40.9	6 ,384,200

*For capital cities, first population figure is 1962 census, second is 1971 estimate.
**The total area of Oriente Region is 52,129 sq. mi. The average density at the 1962 census was 1.4 per sq. mile; province breakdown is not available.

Numerous Indian tribes -- some historians list nearly fifty -- settled along the coast, in the Sierra and the Amazonian hinterland. Each had customs and beliefs differing from those of its neighbors, and these are noticeable even today. In none of the historical periods from the earliest times was unity achieved among these Indians, the deepest cleavage always existing between the tribes of the coast and those of the mountains.

During the first thousand years of the Christian era dozens of minor tribes kept up a continuous warfare. According to the Ecuadorian historian Oscar Efrén Reyes, two families seem finally to have emerged in a more dominant position:

> "that of the Duchicelas, among the Puruhaes Indians, and that of the Shyris, among the Quitus: family governments, as it seems, hereditary and almost strictly decorative, with military leadership in times of war, but without any initiative or influence over the social, economic and religious life of the tribes which composed the 'kingdom'".

The Incas did not push northward until the second half of the fifteenth century, the time, that is, when Christopher Colombus was already born and the end of all Indian kingdoms was approaching.

After long struggles, the Inca Tupac Yupanqui succeeded in conquering the southern provinces of present-day Ecuador some time around 1480. His son Huaina-Capac in cruel battles reached farther north and sealed his conquest by the old expedient of marrying the daughter of the vanquished king, in this case Paccha, the Shyri princess.

Some of the outlying tribes, however, especially those of the lowlands, were never subjugated. As to the rest, less than fifty years of Inca rule were hardly sufficient to impose on them the unifying influence of the religion, language, and the highly planned social and economic system of the Inca conquerors. In a deeper sense, present-day Ecuador was never properly incorporated into the Tahuantinsuyo, the Inca "Four Parts of the Earth".

According to tradition, Huaina-Capac on his death in 1526 divided his Empire, leaving the northern kingdom of Quito to his and Paccha's son, Atahuallpa, and Cuzco and the south to his son Huascar, offspring of a previous marriage to an Inca princess. These two, soon after their father's death, went to war, each to defend his claims as sole ruler. It was Atahuallpa who proved victorious. Ecuadorians find in this fact one of the first powerful affirmations of their nationality against the always renewed pretensions of Perú, and celebrate in Atahuallpa the first great Ecuadorian The historical writer Pío Jaramillo Alvarado called Atahuallpa the "Creator of the Quitonian nationality", referring to the kingdom, not the city of Quito. And as the historian and journalist Barrera said, "the Shyris, or simply the Ecuadorians, not only knew how to resist the Incas, but they absorbed the conquerors and turned them into rulers to their own benefit". He said that "Quito stands up to confront Cuzco, and it is this rivalry, which will continuously reveal itself throughout the centuries and which determines the real reason for the frontier dispute".

While the two Inca brothers were still fighting, the first Spaniards had already carried out explorations on the Ecuadorian coast, in 1527, but it was only five years later that the conquest began. By then Atahuallpa had been proclaimed sole ruler of the Tahuantinsuyo. No time was left him to enjoy his power. He was betrayed to the Spaniards and strangled.

2. <u>The Colonial Period</u> - The various Ecuadorian tribes were again conquered only after long and bitter warfare. Sebastián de Benalcázar, from Extremadura, one of Francisco Pizarro's brilliant lieutenants, was the first to set foot in the town of Quito, left in ruins and ashes by the retreating Indians under their great leader Ruminahui. On the site of the ancient town, Benalcázar founded the "Villa de San Francisco de Quito" on December 6, 1534. A year later he founded Guayaquil, on the coast, but

twice the town was destroyed by the Indians. Francisco de Orellana, another of Pizarro's envoys, rebuilt it the third and last time on the present site. Other Spaniards came to replace the founders, and with them monks, priests, and nuns who arrived to stay in Quito and the half-dozen towns which were established before the 16th Century had drawn to an end. In the capital they built the most sumptuous of churches and so many monasteries and convents that these gradually occupied the greater part of the center and made Quito "the Cloisters of America" and "the Sanctuary of Colonial Art".

According to the Ecuadorian historian Alfredo Pareja Diez-Canseco, "it was the Catholic clergy who founded the first establishments for primary education and the teaching of arts and crafts, who organized the seminaries where the humanities were taught, who created the universities, brought the first printing presses and published the first books, looked after the libraries and the archives and made the first musical instruments...for the churches".

Quito and the other Sierra towns progressed more easily than the Coast, because the climate was more favorable and the Indians more docile. As far back as 1463 Quito had been made the seat of a Royal Audiencia. Its importance lay primarily in agriculture. Land was distributed in huge grants those Spaniards, among others the Jesuit priests, whom the Crown wished to distinguish. Yet it was not so much the land that was the measure of value, but the number of Indians who went with it. Their care and Catholic instruction was supposed to be pious duty of the Spaniard encomendero, the big landowner, in exchange for whose paternal services the Indians were obliged to cultivate his land, render personal services in his country and [illegible] and work in his textile mills and mines.

The Spaniards brought new agricultural products to Ecuador. A Franciscan monk, Fray Jodoco Ricke, planted the first wheat. Sheep were

soon so numerous that the Ecuadorian wool industry prospered and Ecuadorian cloth was exported in great quantities, apart from supplying the home market.

For centuries the Indians of the Sierra submitted without protest to their conquerors. Only the jungle Indians of the Oriente fought fiercely against the white man who, often under the leadership of priests, tried to establish small towns at the edge of the jungle. The Indians of the coast did not show willingness to be subjugated by and work for the white man either. Negro slaves had to be brought to work on the few plantations.

In Quito there was brief trouble only in 1592 and the following year in connection with some taxes, but afterwards peace reigned for nearly two centuries, until in 1765 the people rose once more on several occasions, mainly for economic reasons, and few Indians were involved. Four Indian peasant risings of major importance took place, however, between 1770 and the end of the eighteenth century in other parts of the Ecuadorian Sierra.

About 1781, another great Ecuadorian, always mentioned next to Atahuallpa, rose to prominence: Francisco Eugenio de Santa Cruz y Espejo, born in Quito in 1747, of an Indian father and a mulatto mother. According to Oscar Efrén Reyes, "Espejo was considered a real scholar for his time. He was a medical doctor who introduced new methods and was an enemy of quackery. He was also the first American journalist and writer of fame. His political ideas, for which he was persecuted, imprisoned, and exiled, and for which he died in a dungeon were not written down. Espejo advocated the following: complete emancipation from Spain; autonomous government for each colony, republican and democratic in character; and nationalization of the clergy." Although he did not live to take part in the War of Independence, he stands at its threshold. Spanish domination had entered its final phase when he died.

Less than thirty years after its foundation in 1563 Quito was elevated to the seat of a Royal Audiencia, with jurisdiction over what is more or less the present Ecuador, and including the territories of the Oriente which might still be discovered beyond the regions of La Canela and Quijos. This Royal Audiencia was twice abolished, twice restored. Until 1739 it was incorporated in the Viceroyalty of New Castille (Perú), except for a brief period of twelve years (1710-22) when it was incorporated into the northern Viceroyalty of New Granada (Columbia). In 1739 jurisdiction over the Royal Audiencia of Quito was again shifted north, to New Granada. Thus things remained until the War of Independence, in the third decade of the nineteenth century, freed all these countries from Spain and established Ecuador as an independent State.

3. The Republican Period - Rebellion had been in the air all over the Andes for years, expressed in a series of isolated uprisings and stimulated by events from abroad: North American independence, the French Revolution, the invasion of Spain by Napoleon, and the general influence of new scientific and political ideas. At first the intention was to establish the colonies as provinces under the Spanish Crown, but later developments, and especially the brutal methods of suppression used by the Spaniards made the different colonies in northern South America combine their forces under Simón Bolívar, the Liberator, to achieve complete independence. For Ecuador, the decisive battle took place on May 24, 1822, on the slopes of Mt. Pichincha.

For eight years after finally obtaining its freedom, the former Audiencia of Quito joined its two northern neighbors, Columbia and Venezuela, in the Confederation of Gran Colombia, which owed its existence to the genius and visionary faith of Bolívar. But the three countries did not wait for the

Liberator to die before they dissolved their union. First Venezuela, then Ecuador (1830) seceded and established themselves as separate republics.

The choice of Ecuador as the name for the new country gave rise to protests later on. Thus a distinguished historical writer, Pío Jaramillo Alvarado affirmed:

> Not to call "Republic of Quito" the country which through centuries of its existence was known as Kingdom of Quito, State of Independent Quito, and to call it falsely Republic of Ecuador, was a mistake.

The man who should have been Ecuador's first President, Field-Marshall Antonio José de Sucre, the venerated victor of the Battle of Pichincha, was assassinated. His place was taken by another Venezuelan general, Juan José Flores, a rough audacious man whom many accused of being responsible for Sucre's murder. His regime was a military dictatorship with no program but that of staying in power. Off and on, President Flores dominated the political scene for fifteen years. The next fifteen saw five Presidents come and go and the breakdown of any semblance of a national Government. During most of this period the endeavor was to replace foreign militaris by a native type. The Jesuits, among the richest of the landowners, were expelled, nearly a century after the Spanish Crown had first done so. In 1852 slavery was abolished, but if affected only the numerically limited negro population.

The next fifteen years were again dominated by a single man: Gabriel García Moreno, a Conservative and the first outstanding statesman Ecuador produced. Deeply aware of the chaotic state of his country, he attempted above all to unify it. Nationalism might have served the purpose, but it would first have to be created, and García Moreno could not wait. So he made use of an idea which already existed: Catholicism. An austere man himself,

he saw in Catholicism a disciplinary force which might help to create a strong united Ecuador. He invited the Jesuits to return, and leaned on the Church and the landowners for support against the militarists. García Moreno remains the most controversial figure in Ecuadorian national life. He is generally regarded as one of the two greatest presidents in the history of the republic, and considered the outstanding representative of the Conservative Party.

Between 1859 and 1875, Ecuadorian politics had meaning only as it related to García Moreno. Early in the 1860's he undertook the reformation of the Church in the country. His intense Catholicism led him to seek an extension of rigid hierarchy to the social order and his concept of the state was essentially authoritarian. For him such concepts as liberty and equality were synonyms for anarchy, and were evils to be avoided at any cost. During his time religious intolerance became law in Ecuador, Church and State were reunited, and only practicing Roman Catholics were permitted to be citizens. His conservative dictatorship marked the apogee of the political power of the Church in the history of the country.

In 1875 Gabriel García Moreno was struck down by the assassin Faustino Lemus Rayo. The ensuing twenty years were marked by excessive political instability and frequent dictatorship. During this period Ecuador had two constitutions, one written in 1878, the other in 1883. These relaxed the theocratic authoritarianism of the preceding era, although the Church remained the dominant political force in national life.

A new epoch came into being with the Radical-Liberal revolution of 1895, led by General Eloy Alfaro. During the Radical-Liberal period, which endured until 1944, steps were taken to reduce the political power of the Church. Religious orders were banned in the country, and religious qualifications for

the exercise of political and civil rights were terminated. Although Roman Catholicism remained the sole permitted religion, only native-born clergy were allowed to operate in the republic. During the Radical-Liberal era, so-called "revolutions" occurred with decreasing frequency, but the closing years of the period were marked by a sharp deterioration in the integrity of the electoral process. In the contemporary period, the influence of the traditional political parties has declined since 1944, and the Church has regained a portion of its former power.

The years following 1925 belong to the most agitated of the country's history. From amidst the confusion, three men stand out: José María Velasco Ibarra, Carlos Arroyo del Río, and Galo Plaza. José María Velasco Ibarra was born in 1893. He rose to political prominence in the National Congress of 1933 as President of the Chamber of Deputies. He was known as the caudillo of Ecuador for several decades. He became President of the country five times between 1933 and 1972. An Ecuadorian journalist has described him as "lean and ascetic, inflamed by vehemence...Dr. Velasco is doubtlessly the man nearest the masses. Like them, he acts emotionally, in fits and starts. This is the secret of his success, apart from his extraordinary personal magnetism. On two occasions he has been the Man of Providence for the country. Both times he failed...caught in the net of his own contradictions." He was a man of apparently inexhaustible energy who travelled to the farthest corners of the country, built a school here, a bridge there, convinced the people of his personal honesty and described to them in passionate speeches the many ills from which the country was suffering.

Dr. Carlos Arroyo del Río, a wealthy company-lawyer from Guayaquil, is considered another representative of the coastal "plutocracy." He became the President of Ecuador in 1940. The following year the Peruvians invaded the southern coastal provinces on the pretext of the century-old dispute.

An offer made to the President by all political parties for cooperation in a national Government to present a united front to the enemy was rejected by Arroyo del Río. Ecuador was defeated as a result, and made to sign a Protocol of Peace through which the country lost her rights to vast regions of the Oriente. When he tried to impose a completely impossible Liberal as Government-backed candidate for the next Presidential election, the people rebelled. Velasco Ibarra was brought back from exile.

A series of interregnums followed until elections were held in 1948, and Galo Plaza, the candidate of an ad hoc group composed of people from many parties, was elected. As his political creed President Plaza reaffirmed, in his farewell speech to Congress in 1952, that he was happy to have proved "that it was possible to govern Ecuador through the (constitutional) institutions, freely, and democratically." Galo Plaza had firmly resolved from the outset that he would finish his term and he did. Many of his critics held that to this end he subordinated most other considerations. His successor was agin, José María Velasco Ibarra.

Dr. Velasco owed his victory to two main factors: the dissolution of the traditional political parties, and the fact that the Conservative candidate finally presented, reminded the majority of the electorate by his belligerent Catholicism, too much of García Moreno. Ecuador is a Catholic country, but half a century of Liberalism has had a profound effect. Velasco Ibarra's support at this time came from a Falangist-inspired organization known as Arne, which arose spontaneously wherever he went; and indirectly, from the many who were waiting for what was going to happen.

The resumption of Conservative power came in consequence of the presidential election of 1956. Camilo Ponce Enríquez defeated his ad hoc opposition and was named President for the four-year period ending in 1960. The Ponce administration was relatively peaceful. Once more, with ad hoc support

lasco Ibarra was re-elected in 1960. Deserted later by his ad hoc organi-
tion, he defied and baited the hostile political parties. His opponents,
th the aid of the newly politicized air force, staged a coup de etat
ich overthrew his government in 1961. Vice-President Carlos Julio Arosemena
sumed the presidential office.

President Arosemena, the son of the Guayaquil banker and philantropist
o had served briefly as interim president in 1947-1948, also depended upon
l hoc organizations for his political support. His backing was moderate in
ture, but it also drew from rightist and leftist sectors, thus rendering
e government's policies difficult. On the one hand his administration
sisted tax reforms and leaned heavily upon the conservative air force; on
e other, under his rule Ecuador was among the few Latin American governments
ampioning a conciliatory inter-American attitude toward the Castro regime in
ba. Under pressure from every side, his government had to modify both of
ese policies, embarking on a modest program of tax reform and severing
lations with Cuba under military pressure. He was finally overthrown by
military coup in July, 1963.

The coup had the support of the top leadership of all three service,
d the military junta which assumed the executive functions was headed by
a naval captain, Ramón Castro Jijón. The junta pledged to draw up a new
fundamental law and return the country to civilian rule. However, the armed
forces, split and split again over what decisions to make with regard to the
problems that confronted the military government, such as how to draft a
constitution that would guarantee that Velasco Ibarra could not return to
power. They drifted without a clear policy. After more than two years in
office, the members of the junta yielded to popular sentiment and fled to
asylum in foreign countries.

After the short interim Presidency of Clemente Yerovi Indaburu (March-Nov., 1966), and the two-year term of Otto Arosemena Gómez, Velasco Ibarra was elected once more in 1968, defeating both Conservative and Liberal candidates, but this time by the narrowest of margins, and it seemed clear that the fifth term of Velasco, then in his late 70's would be his last.

In June 1970, Velasco Ibarra assumed dictatorial powers and cancelled the 1967 Constitution in favor of the 1947 Constitution, which provided for a strong executive. In July 1971 the government announced that presidential and congressional elections would be held in June, 1972. But before this, President Velasco Ibarra was ousted in a military coup. Brig. General Guillermo Rodríquez Lara assumed the presidency February 16, 1972 as head of a "nationalist and revolutionary government," cancelling the presidential elections scheduled for June 4, 1972.

The contemporary Ecuadorian scene exhibits a number of characteristics. This is the time of pronounced economic development in the country. Although Ecuador's standard of living is still among the lowest in the Western Hemisphere, the growth rate of the national economy is accelerating sharply, and the symptoms of development have been much in evidence in the last two decades. The production of bananas grew from virtually nothing to become Ecuador's leading export activity. U.S.-owned fruit companies led the way by transferring their activities to the Ecuadorian coast as a consequence of the losses suffered in their Central American operations from banana diseases. The foreign companies limited their own activities, preferring to concentrate on shipping and marketing the stems, most of which are bought from small local growers.

Principal Ecuador Export Commodities: 1971

Bananas	51.0%
Coffee	15.3%
Cocoa	10.7%
Others	23.0%

(Source: CIA, Statistical Abstract of Latin America, 1971.)

PRESIDENTIAL TERMS: ECUADOR, 1940 - 1972

CARLOS ARROYO DEL RIO, Aug. 17, 1940 - May 30, 1944

1944 May 29: President Carlos Arroyo del Rio resigns in the face of military opposition. Jose Maria Velasco Ibarra gained the presidency and called for an election on June 15. Velasco Ibarra is elected.

JOSE MARIA VELASCO IBARRA, May 31, 1944 - Aug. 23, 1947

1947 August 23: Velasco Ibarra is removed by a military coup led by Defense Minister Col. Carlos Mancheno C., who proclaims himself president on August 24.

COL. CARLOS MANCHENO C., Aug. 24, 1947 - Sept. 3, 1947

September 2: Col Mancheno is removed by a military-civilian coup.

MARIANO SUAREZ VIENTIMILLA, Acting President, Sep. 3, 1947 - Sep. 15, 1947.

CARLOS JULIO AROSEMENA TOLA, Acting President, Sep. 15, 1947 - Aug. 31, 1948

1948 June 6: Presidential election. Galo Plaza Lasso, Movimiento Civico Democratico Nacional (MCDN), and M. Sotomayor Luna, Partido Conservador (PC), are elected President and Vice-President respectively.

GALO PLAZA LASSO. Sep. 1. 1948 - Aug. 31. 1952

1950 June 6: Chamber of Deputies election. MCDN loses majority.

1952 June 2: Presidential election. Velasco Ibarra, Federacion Nacional Velasquista (FNV), is returned to power. Opposition candidate, Ruperto Alarcon Falconi - PC, contests the election.

JOSE MARIA VELASCO IBARRA, Sep. 1, 1952 - Aug. 31, 1956.

1954 June 1: Congressional election. Partido Liberal and Partido Conservador increase their strength in the legislature; Partido Liberal Radical loses plurality.

1956 June 3: General election. Close totals lead to 30-day blackout of all election reports. Camilo Ponce Enriquez, Alianza Popular a coalition of Partido Conservador and Movimiento Social Cristiano, is elected by a small plurality. Raul Clemente Huerta, Frente Democratico Nacional (comprised of Partido Liberal and Partido Socialista) charges fraud. Congress supports the Supreme Electoral Tribunal ruling and declares Ponce Enriquez President.

CAMILO PONCE ENRIQUEZ, Sep. 1, 1956 - Aug. 31, 1960

1958 June 3: Chamber of Deputies election. Alianza Popular retains plurality with Concentracion de Fuerzas Populares second.

1960 June 6: General election. Former President Velasco Ibarra, FNV, is elected for the fourth time, defeating ex-President Galo Plaza Lasso, Frente Democratico Nacional; Gonzalo Cordera Crespo, Partido Conservador, and Antonio Parra, Union Democratico Nacional (a coalition of leftist parties). FNV wins plurality in both houses.

JOSE MARIA VELASCO IBARRA, Sep. 1, 1960 - Nov. 7, 1961

1961 November 7: Velasco Ibarra resigns in the face of growing opposition from the Armed Forces. His Vice-President, Carlos Julio Arosemena Monroy, is proclaimed President by the Congress.

CARLOS JULIO AROSEMENA MONROY, Acting President, Nov. 8, 1961 - July 11, 1963

1962 June 4: Chamber of Deputies election. Frente Democratico Nacional wins plurality.

1963 July 11: President Arosemena is ousted by military coup. Four-man milita junta takes power. The Congress is dissolved; the 1964 presidential elect is cancelled; and the Communist party is outlawed.

MILITARY JUNTA:
CAPT. RAMON CASTRO JIJON (NAVY), COL. LUIS CAHERA SEVILLA (ARMY), LT. COL. MANUEL FREILE (AIR FORCE) AND COL. MARCOS GANDORA (NATIONAL DEFENSE COUNCIL), July 11, 1963 - Mar. 31, 1966.

1966 March 29: The Junta is replaced as military high command restores greater civilian control. Clemente Yerovi Indaburu is named interim President by the major political parties. Congress is restored.

CLEMENTE YEROVI INDABURU Interim President, Mar. 31, 1966 - Nov. 16, 1966

October 12: Congressional election. Partido Conservador wins majority.
November 13: Congress elects Otto Arosemena Gomez Provisional President.

OTTO AROSEMENA GOMEZ, Nov. 17, 1966 - Sept. 1, 1968

1967 May 25: A new Constitution is promulgated.

1968 June 2: Presidential election. Former President, Jose Maria Velasco Ibarra, Movimiento Frente Popular Velasquista, is elected.

JOSE MARIA VELASCO IBARRA, Sept. 1, 1968 - Feb. 16, 1971

1970 June 22: Velasco Ibarra assumes dictatorial powers and cancels the 1967 Constitution in favor of the 1947 Constitution, which provides for a strong executive.

1971 July: The government announces that presidential and congressional elections will be held on June 4, 1972, with the new President to assume office on August 31, 1972.

1972 February 16: President Velasco Ibarra is ousted in a military coup. Brig. Gen. Guillermo Rodriquez Lara assumes the presidency as head of a "nationalist and revolutionary" government and cancels the presidential elections

scheduled for June 4, 1972.

BRIG. GEN. GUILLERMO RODRIGUEZ LARA, Feb. 16, 1972 - Present.

Source: UCLA, Supplement to the Statistical Abstract for Latin America.

The oil boom is changing the economic nature of the country, thus oil will probably soon surpass all other exports commodities.

The traditional export-oriented agriculture in the Coast has been characterized by small and medium holdings, together with efficiently-farmed larger scale properties. In the Sierra the dominant holding is still the traditional estate which produces principally basic food crops for its own and for local consumption by centuries-old methods used by an Indian work force.

Government activity stresses the importance of long-term coordinated development plans in order to provide continuity, as expressed in the goals of the national 5-year plan: Plan Integral de Transformación y Desarrollo, 1973-77. Development is considered by the Government as:

> a process implying deep structural transformation destined to modify the traditional behavior of the national economy and society...offering the permanently relegated groups a higher degree of participation in the elaboration and execution of the decisions which affect them...Towards the attainment of these goals, a series of concrete policies and projects are included in the programs of education, health care, potable water and sewage disposal, housing and human resources. Thus, for example, as far as health is concerned, we aspire, by 1977, to be able to provide medical coverage to 1,473,000 Ecuadorians, in relation to 738,000 who are covered in the present.

4. Literature and Art - During the Colonial Era, "The School of Quito" was making the country famous all over the Pacific side of the continent. It centered almost exclusively in the religious institutions. Until the middle of the last century, a deep Catholic mysticism dominated life and society in Ecuador, with the Church as the center of thought all over the Sierra in particular. Whereas in towns like Lima people of wealth lived in luxury, Quito was extremely frugal, but spent fortunes on religion. Churches and monasteries were covered with gold and works of art. Indians, mestizos and criollos (persons born in the New World of Spanish parents) worked on the

buildings and their decoration, guided and inspired by foreign monks. Quito's cloisters are in fact museums of fine art.

As religious fervor cooled or was left to the masses, the mystic "School of Quito" disappeared. Modern Ecuadorian art goes hand in hand with the literary movement and reached its peak in the work of Oswaldo Guayasamin. Like other contemporary Ecuadorian artists, he passed through a phase known as feismo (uglicism), a strongly expressionist manner exaggerating the physical shortcomings of the Indian, with an implied revolutionary message. Later, his range both artistically and in content became much broader.

Modern Ecuadorian literature is well know even beyond the Spanish-speaking world. Of numerous writers and poets, the first of real importance was Eugenio Espejo (1747-1796). In the nineteenth century Juan Montalvo was perhaps the most outstanding, a liberal who wrote in the classical style of Spain, but who also used his pen as a weapon in the long war he waged against dictator-President García Moreno. But literature on the whole was then still rather academic, and the first novels were imitations even when they used an apparently Ecuadorian background. Later the costumbristas began describing the customs of the man in the street and the peasant, more often than not as something rather funny.

After World War I, something almost amounting to a revolution took place in the field of literature, which reached its height between 1930 and 1935. Like the radical political movement, it started on the coast. Angel F. Rojas who belongs both to the new literary and political movements, says in respect to the Ecuadorian novel:

> "The contemporary fictional production of Ecuador has a mainly social content. It prefers as a subject the Indian and the montuvio, in the sense of mass-man rather than as a individual.

Even though all the novelists among us belong to the middle class, they have not chosen this class as the principal theme."

The Indian novel developed from poetic to political romanticism, from crude realism, to a more balanced and artistic treatment of men and facts. At first, authors from the Sierra followed Zola. After the First World War, Russia gave the impetus. In 1934 Jorge Icaza published Huasipungo, which has since been translated into all the major and some of the minor languages of the world, and in the opinion of unbiased experts, is the best novel to come out of Ecuador. It describes the events that incite a group of Indian peasants to rebellion against the estate owner and the authorities, to defend their rights to the land.

On the coast, three young men became prominent when they published together a collection of short stories under the title of Los que se van (Those who go away). They were Joaquín Gallegos, Enrique Gil Gibert, and Demetrio Aguilera Malta. Although each of them later made a name for himself, together with Alfredo Pareja, José de la Cuadra, and Angel F. Rojas (a native of Loja), they worked as a group which became known as the "School of Guayaquil".

Not all contemporary writers have been left wing. The "Grupo América" was a kind of Ecuadorian P.E.N. Club founded in 1931. It was a slightly academic, socially influential organization of extremely respectable poets, essayists, novelist, journalists of democratic, somewhat conservative convictions. Their greatest merit became their untiring work for internationa collaboration, which made them act as hosts to intellectuals from all parts of the world.

In the past, nearly all important books by Ecuadorian authors had to be published abroad. With the establishment of the Casa de la Cultura Ecuatoriana in 1945 the situation changed, since the House of Culture is devoted to the

_____ __ ___ branches of Ecuadorian literature. Apart from literary activities, the House of Culture also organizes concerts, lectures, art exhibitions, etc., to which the public is admitted free of charge. It has an important branch in Guayaquil and smaller branches in several provincial capitals.

III. PEOPLE

1. Distribution - The estimated 800,000 Indians living in Ecuador when the Spaniards arrived were, like all other American Indians, members of the Mongoloid stock. The Spanish conquest saw the introduction of two new racial elements: the Caucasian Spaniards and African Negroes who were brought in as slaves. The non-Indians in the country are still a minority. The white population of Ecuador has been estimated at between 8% and 27%, with the lower figure probably being more nearly correct. The Spaniards and Negroes first settled on the coast, displacing many Indians who moved to the highlands. Unlike the Spaniards, the Negroes remained almost entirely on the coast. Those who escaped from slavery either formed small communities of their own or intermarried with the local Indian population. By mid-20th century the proportion of the coastal population having Negro blood was estimated to be as high as 45%. Besides pureblood Negroes and mulattoes, there are also montuvios, who are persons of Negro-Indian ancestry. The Indians of the coast are much reduced in number and racially mixed. All have lost their tribal identity except for the Cayapa and Colorado, who together number no more than 2,000.

The composition of the highland population is estimated at 28% white, 30% pureblood Indian and 40% mestizo. Many so-called mestizos are probably pure Indians physically because the word mestizo is commonly used to refer to a person of mixed Indian and Hispanic culture, regardless of his race. The

Oriente is peopled almost exclusively by full-blooded Indians.

Several families of languages were spoken in coastal and highland Ecuador before the arrival of the Incas. But, except for Chibchan, which was spoken by several tribes in the north, it has not been possible to identify any of these early languages with certainty. After the Inca conquest, Quechua, the language of the empire, was introduced and became well established. The Spaniards found Quechua useful for administrative purposes and promoted its spread at the expense of the surviving native languages. By the end of the 18th century Quechua was universally spoken in the highlands. While Spanish is the official language of modern Ecuador, Quechua is spoken by the greatest number of people.

2. Religion - Roman Catholicism is the traditional religion of Ecuador, having been established with the Spanish conquest. For a time after the middle of the 19th century, the government was so closely tied to the church that only practicing Roman Catholics were recognized as Ecuadorian citizens.

Since the advent of the Liberals to power in 1895, church and state have been separate. Education has been secularized, though the church has been granted the right to conduct schools; church property has been confiscated; and freedom of religion is guaranteed by the constitution. Extremely friendly relations, however, continued to exist between church and state, and Roman Catholic religious orders have been particularly active in Ecuador. Quito, the seat of the archbishopric, has often been cited for its numerous churches, with their treasures of art and sculpture. Protestants first went to Ecuador after 1895, and they achieved some success in Guayaquil. Both Catholic and Protestant missionaries have been active among the Indians of Oriente.

3. Population and Census Facts - The first national census of Ecuador was taken in 1950 and recorded a population of 3,202,757. The 1962 census showed 4,476,007 and the 1971 estimate was 6,384,200, excluding nomadic Indians. The coastal region contained about 46% of the population, the Sierra about 51% and the Oriente about 2%. The remainder (about 0.5%) lived on the Galápagos Islands.

Although the people of Ecuador are frequently referred to, in popular parlance, as belonging to different "races", it is more accurate to describe their social groups as classes. The distinctions among them are based on the languages they speak, the cultures in which they participate, their styles of dress, whether they live in rural or urban areas, and, to a certain extent, the region in which they live. The "whites" are people who, regardless of their skin color, speak Spanish, participate in the Spanish rather than the Indian culture, and usually live in the cities. Mestizos participate in both cultures. Indians speak indigenous languages rather than Spanish and tend to be rural rather than urban dwellers. Thus defined, Indians account for about 60% of the population, mestizos 25% to 30%, and "whites" at most 15%.

Immigration statistics indicate that, since the achievement of its national independence in 1830, Ecuador has not attracted significant numbers of European immigrants, although the country has on occasion made official attempts to draw new citizens from Europe. During World War II war refugees were invited to settle in the country; and, throughout the period of Hitler's rule in Germany (1933-45), about 1,000 Europeans, many of them Jews, came to Ecuador as immigrants. All in all, however, there was probably less emigration into Ecuador after independence than into any other country of South America.

4. Education - Though primary education is free and compulsory for children from 6 to 12 years of age, opportunities for school attendance are limited by the shortage of schools and of teachers, especially in rural areas. In 1955 a sizeable school construction program was initiated, and the need for increased aid to education was reflected in the national budget. Approximately 10% of the national budget is alloted to education.

The illiteracy rate in Ecuador is about 68%. To help improve this situation, the government organized a national literacy training program in 1967. At present, radio is the most effective channel of information. Although the press is a responsible one (4 leading daily newspapers) the impact it can make on the country as a whole has been limited by illiteracy and poorly developed transport and communications systems.

Education is theoretically compulsory between the ages of 6 and 12 years, but attendance is affected by available places and a high dropout rate. Public schools are free; private religious schools play an important part in providing places. There are seven universities.

Ecuador's seven universities are autonomous. The most important are Central University of Ecuador (1796) at Quito and Guayaquil University (1867). The universities of Cuenca (1868) and of Loja (1896) serve the southern sections of the Sierra. A Catholic University, headed by Jesuits, was opened in Quito in 1946. There are polytechnic schools at Quito (1869) and Guayaquil (1959).

The key element to the quality of the output of the Ecuadorean education system is the primary school system. As long as it reaches only 57% of all children, and gives them less than acceptable levels of education, the secondary, technical, normal, and college level schools can make small headway toward preparing the citizenry for the task of development.

IV. ECONOMY

Economic development in Ecuador has been regional and often local rather than national in scale. Contrasts are especially apparent between the Sierra and the coast. The Sierra lacks the agricultural land needed for expanded production and suffers from a surplus of unskilled labor. The coast, on the other hand, has an abundance of land but lacks the labor force needed for its efficient utilization. The Sierra produces mostly grains, fruits, and vegetables, chiefly for domestic consumption, whereas coastal agriculture is commercialized and enters extensively into international trade exporting bananas, cocoa, coffee, and rice.

Although only about 5% of the land is under cultivation, Ecuador is predominantly agricultural. About one-half of the economically active people are employed in agriculture, with the next largest group (one-fourth) employed in handicrafts and manufacturing industries. Cultivated land is about equally divided between the Sierra and the coast. The Sierra, however, contains a larger percentage of land unsuited for cultivation because of cold, ruggedness and aridity.

The principal staple foodstuffs grown in the Sierra are maize (corn), potatoes, barley, wheat, and beans. Maize, which along with barley constitutes the basic diet of the Sierran working population, is the most extensively planted crop, though it is exceeded by potatoes in quantity of production. It is also a principal staple foodstuff grown in the coastal region, along with bananas, rice, sugar and sweet potatoes. Fifteen percent of all land under cultivation is devoted to maize and barley. Barley grows at elevations up to 11,500 ft., as do potatoes. Wheat production is concentrated in the zone from 7,000 to 10,000 ft. Wheat yields are extremely low as a result of inefficient methods, lack of fertilizers, irregularity of rainfall and other

factors. In fact, yields of nearly all Sierra crops are low. The most productive inter-Andean basins are those around Ibarra, Quito, Ambato and Cuenca. Some irrigation systems have been built to modify problems of water supply and porous volcanic soils.

Although bananas had been exported from Ecuador from the 1920's, large-scale commercial production did not take place until after 1945, stimulated by high prices and production decreases in Caribbean countries caused by plant diseases, hurricanes, and labor trouble. The construction of new roads in the Pacific coastal region aided the industry greatly. Ecuador became the world's principal exporter of bananas, maintaining this position even though reductions in shipment occurred in the 1960's, principally to the United States.

Beginning about 1870, Ecuador produced significant quantities of the world's finest cocoa and occupied first place in production until the 1920's. In the peak year of 1916 nearly 50,000 metric tons were produced. Serious outbreaks of Monilia disease in 1916 and of witches' broom disease in 1922, however, caused the abandonment of many of the huge plantations in the Guayas lowland.

The largest coffee-producing areas of Ecuador are the hilly sections near the coast northwest of Guayaquil and the flanks of the Andes to about 5,000 ft. elevation southeast and east of Guayaquil. In contrast with cocoa, coffee trees are planted usually in small plots rather than on large plantations. Production more than doubled during the two decades preceeding the mid-1950's especially in response to the sharp rise in world market prices after 1945 and had doubled again by the 1960's.

Rice, a staple food in the coastal region and also much in demand in the Sierra, fluctuated greatly as an export crop. It figured significantly in the national economy when cocoa failed, though its value was erratic.

Industrial development in Ecuador has been confined largely to the manufacture of consumer goods for a relatively small domestic market. Manufacturing embraces principally the preparation of foodstuffs, textiles, shoes, furniture and small wares destined for local markets. Ecuador, like many other Latin American nations, is essentially an exporter of raw materials chiefly agricultural, and an importer of manufactured goods.

Mining has not played as important a role in Ecuador's economy as it has in the other Andean countries. The most extensive mineral exploration has been done in Oriente, where potentialities of petroleum deposits were considered favorable. Between 1937 and 1949 two companies worked together in t Amazon basin, but withdrew because their findings did not warrant the construction of costly pipelines to transport oil from that isolated region. In 1967 very significant quantities of oil were discovered near the Colombian border in Napo province, and eastern Ecuador witnessed a great increase in the exploitation and development of its petroleum resources.

Petroleum deposits also have been exploited in the coastal region. Petroleum was discovered before World War I on the arid Santa Elena peninsula, north of the Gulf of Guayaquil. British and Canadian oil companies started work after 1918 and one of the British companies also had little success and its concessions were taken up in 1951 by a United States company, which opened a small refinery in 1953. This, in turn, was sold to Ecuadorian interest in 1962. Several Ecuadorian oil companies have also been active. An 11-mile pipeline from Ancon to the port of La Libertad, constructed by a British concern, linked the Pacific coast deposits. The deposits of the Oriente are being developed and have been linked with the Pacific port of Esmeraldas.

During the 1970's forecasts of Ecuador becoming another Venezuela were strengthened by the fact that most major oil companies displayed great interest in oil discovery, taking concessions or signing "associate" drilling contracts with the state. Texaco, which leads the consortium of companies, forecasts a daily production of 250,000 barrels. This would be enough to increase by half Ecuador's current annual foreign exchange earnings of roughl $240 million, assuming the government retains 60% of the profits. (One government economist has said that the regime is planning to invest the bulk of its oil revenues in agriculture and industries that could compete with those of neighboring countries) and to develop its social structure.

V. GOVERNMENT STRUCTURE

Ecuador, the smallest and weakest of the states formed from the breakup of Gran Colombia, during its turbulent political history as a constitutional republic developed a conservative centralized government giving considerable power to the president. The history of the country has been marked by the conflict of Conservatives and Liberals, represented in large part by sectional differences that exist between the Sierra and the coast, and the conflict of the state with the strong temporal power of the Roman Catholic Church.

1. Constitution - The constitution of Ecuador adopted in 1946 was largely the work of Conservatives, though it maintained all of the basic Liberal principles and social goals. A new constitution adopted in 1967 called for a unitary republic with the usual legislative, executive, and judicial branches. It also called for a wide range of rights, duties and guarantees, including traditional personal, political and property rights, as well as guarantees of education, labor, and social security. Other provisions were agrarian reform duties and the responsibility of the state

in planning the orderly and continuing development of the economy.

According to the 1967 Constitution, the senate and the chamber of deputies comprise the congress. Senators, totaling 54, are elected for four years. The 19 main provinces elect two senators each and the Galápagos Islands (Archipiélago de Colón) one; and in addition 15 "functional" senators are elected by special economic or cultural groups, representing education, agriculture, business, industry, labor, the armed forces, civil police, journalism and learned societies. Deputies are elected for two years. The provinces elect a minimum of two deputies each -- one deputy for each 80,000 inhabitants and fraction in excess of 40,000; the Galápagos Islands elect one. The president and vice president are elected for four years and are not elegible for immediate reelection. All candidates for national offices must be Ecuadorian-born citizens; the minimum age qualifications are 25 years for deputies, 35 years for senators and 40 years for the president and vice president. All are elected by direct, secret vote. Suffrage is granted to men and women over 18; voting is compulsory.

2. Local Government - In 1960 there were 19 provinces and the territory of Galápagos Islands. The provinces were divided into 108 cantones, which, in turn were divided into 893 parroquias ("parishes") -- 192 urban and 701 rural. Each province is ruled by a governor, each canton by a jefe político and each parish by a teniente político.

The Galápagos Islands are administered through the Ministry of National Defense and are, technically, a naval command. Ten of the provinces belonged essentially to the Sierra and five to the coast. The largest in area are Napo, Pastaza, Morona-Santiago and Zamora-Chinchipe, the four sparsely populated Oriente provinces, and Guayas and Manabí in the Pacific coastal region.

The largest Sierra provinces are Pichincha, which includes considerable Pacific low-land area, and Loja. The largest in terms of population were Guayas (979,223), with Guayaquil; Manabi (612,542); and Pichincha (587,835), with Quito.

The continental territory of Ecuador is divided into nineteen provinces Each of these is administered by a governor who is appointed by the President of the Republic and represents national rather than provincial interests. Each governor is aided by a popularly elected provincial council, which protects regional and local, rather than national, concerns and is presided over by a popularly elected "prefect". For its internal government, each province is divided into a number of cantons, each canton being headed by a political chief appointed by the national president on the recommendation of the appropriate provincial governor. Cantones are in turn divided into parishes, each governed by a political lieutenant, also appointed by the president with the collaboration of the appropriate governor and political chief. Elected councils also exist at the cantonal and parochial levels. The national government's control of the provinces and their subdivisions is fairly complete, being administered through the Ministry of the Interior.

Municipalities have been established in cantons which contain urban communities. Every municipality which is not a Sierra or Coastal provincial capital has an elected seven-man municipal council functioning without a mayor, the ceremonial head of the municipality being the presiding officer of the council. In twelve of the fifteen Sierra and Coastal provincial capitals there are nine-man councils and separately elected mayors (alcaldes) who are not members of the councils. Each of the three largest cities of the Republic - Guayaquil, the nation's chief port; Quito, the national capital; and Cuenca, "the Athens of the South" - has an eleven-man council and a separately elected mayor who may not participate or vote in meetings of the

council. The members of all municipal councils are popularly elected by a variation of the list system of proportional representation for two-year terms. The fifteen mayors have two-year terms and are popularly elected at the same time as the councils.

The constitutional and political position of the Ecuadorean municipality is anomalous. In the unitary organization of the Republic the municipality is is a sense an agent or tool of the national government; yet a considerable degree of autonomy rests with the municipality. Municipal autonomy is an Ecuadorean reality. Its roots are deeply embedded in the history of the country and have become interwoven with problems of regionalism and particularism.

VI. HEALTH

1. Status and Problems - Ecuador's public health program has made remarkable improvement through national efforts and international cooperation. The eradication early in the 20th century of yellow fever, which had retarded the development of Guayaquil, was the beginning of progress in improving health conditions. Considerable progress also has been made in combating malaria and tuberculosis. In cooperation with the United States Institute of Inter-American Affairs, Ecuador virtually eliminated malaria as a cause of death (as late as 1942 nearly 25% of all deaths were caused by that disease). In cooperation with the World Health Organization, the country also introduced programs to prevent and control tuberculosis, which in recent times caused one-fifth of all deaths. Public health measures were also instituted to control venereal diseases, small pox, typhus and plague. The increased availability of potable water has contributed appreciably to the health of the republic.

Ecuador has a high rate of infant morta ty. It has been estimated that about 140 out of each 1,000 infants die in their first year and that only about 40 of every 100 children born survive the age of five. Some progress was made in the reduction of infant mortality, however, through various general public health measures and through the establishment of a few maternity hospitals and child-health clinics in Guayaquil, Quito and some of the larger towns.

Malnutrition is also prevalent in Ecuador. The diet of the vast majority is not only deficient in proteins, vitamins and minerals, but the total intake of food is extremely low. A great majority of the inhabitants can afford only about one-half the daily intake of calories considered necessary by health authorities. The lack of roads to open up new food-producing areas, the relatively low literacy rate and poor habits of hygiene contribute to malnutrition in a country apparently well suited to support a relatively high level of health. Such foods as milk, eggs, and vegetables are luxuries for the people who produce them.

2. Morbidity and Mortality in Ecuador Taking the official reported figures on morbidity and mortality only as relative indicators of reality, they say the following: that respiratory and other infectious and parasitic diseases are responsible for half of the deaths in the country; whooping cough, measles and tetanus still claim an inexcusable number of lives, and poor nutrition, lack of environmental sanitation, and inaccessibility of the modern health care system to most of the population are among the highest determinants of morbidity and mortality in the nation.

Public health efforts in Ecuador have had significant successes: the death rate has been halved in the past several decades. Smallpox, yellow fever and yaws campaigns achieved the eradication or control of these diseases.

But basically, the causes of morbidity and mortality have changed little in decades and the principal causes of death today are easily preventable by public health efforts in programs of vaccination, environmental sanitation, nutrition, MCH, and Family Planning.

Official Health Statistics for Ecuador, 1969

General mortality	10.9/1,000 population
Maternal mortality	2.3/1,000 live births
Perinatal mortality	29.3/1,000 live births
Infant mortality	91.0/1,000 live births
1 - 4 age group mortality	16.6/1,000 in age group
Under 5 age group mortality	30.7/1,000 in age grou
Percentage of deaths due to ill-defined causes and senility	21.3 %
Percentage of deaths without medical certification	57.98%
Percentage of deaths due to infectious disease	48.21%
Percentage of total deaths in the under-five age group	52.79%

Source: Ministerio de Salud Publica, Proyecciones Cuadrianales, 85, 202.

The general mortality rate of 10.9 is quite low, only slightly higher than that of the United States. As shown in the demography data, such a low current rate is the result of a long fall which has halved the rate since 1930. As expected, a breakdown of crude death and infant mortality rates by region shows the Sierra region to have the highest rates. These measurements have improved for the two most populated regions from 1962 to 1966.

Mortality and Infant Mortality Rates, By Region, 1962 and 1966

	Mortality Rates/1,000 population		Infant Mortality Rates/ 1,000 live births	
Region	1962	1966	1962	1966
National total	12.9	11.2	95.9	90.4
Sierra	15.1	13.7	109.6	100.8
Coast	10.5	8.6	83.2	80.3
Oriente	9.1	9.3	54.7	56.7
Archipelago	1.2	6.5	153.8	25.0

Source: Secretaría General de Planeación, book II, vol. III, p. B2.

Ecuador's maternal mortality rate fell from 2.6/1,000 live births in 1963 to 2.3 in 1969. In most of these years, Ecuador's was the second or third highest in the Americas. Only about 20% of births in Ecuador in these years had professional attention. The infant mortality rate of 91/1,000 live births also shows the result of a very long decline from around 160 in 1930 to about 100 in 1960. The percentages of deaths caused by non-specific causes and without medical certification reflect both the incompleteness of statistics and the lack of medical care. The over 49% of deaths resulting from infectious diseases indicate the dearth of preventive medicine and the fact that Ecuador still suffers more from traditional than modern causes of death. The over 50% of deaths in the under-five age group reflect the poor medical care, nutrition, and sanitation among this group. It also indicates an obvious area of concentration for present public health programs.

In 1940, malaria and tuberculosis were said to be the leading causes of death. Today they remain important causes.

3. The Ministry of Public Health (Ministerio de Salud Publica)

Since 1963 there has been a concentrated effort both in the public and private sectors to find a solution to the problem of Public Health in Ecuador. International advice has been sought and received on several occasions. Finally, the Ministry of Public Health was created in 1967. It coordinates and intends to integrate all health activities as part of one of the objectives of the General Development Plan. The Ministry is in charge of the problems of nutrition and other services relating to health promotion, protection and care of all its citizens. Chart #2 shows the structural division of the Ministry.

Four health regions (Central, Coast, South and Manabí), geographically cutting the nation across the traditional regions were created as the principal subdivisions of the Ministry. The reorganization aimed for centralized planning and technical standards with decentralized execution. Separate regional plans are to be closely coordinated by the Ministry, as well as various programs involving other health agencies and ministries.

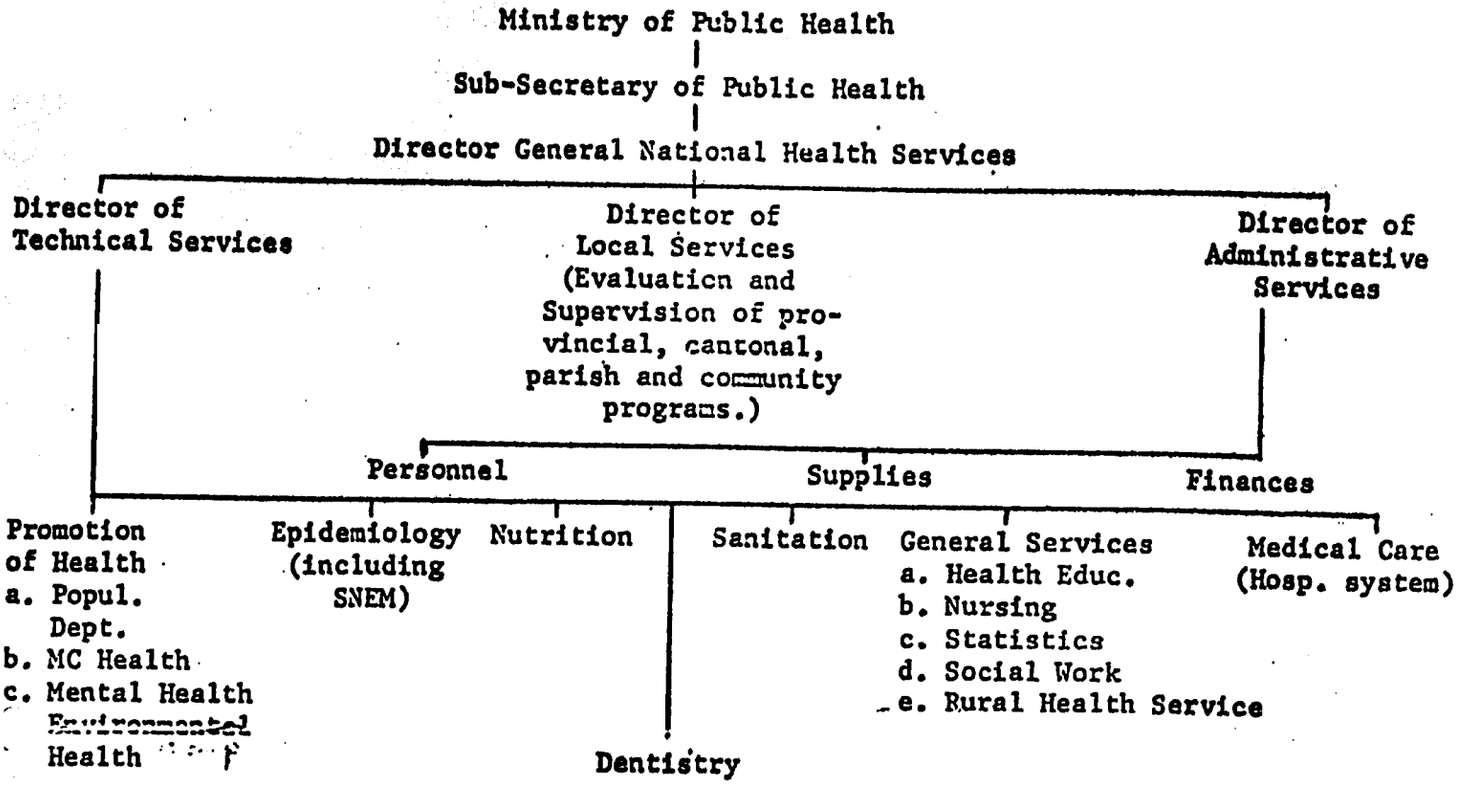
The Health Sector (sector de salúd) under the Ministry of Health is understood as the sum of public and private entities which carry out health activities, be it as service providers, a product of basic social capital, or collaborators with the National Health authorities.

The Ministerio de Salud Pública (MSP) is a relatively young institutio in the process of consolidating recent activities (for example, it has increased its share of the nation's hospital beds from 3% to approximately 50% by taking over the responsibility from the Ministry of Social Welfare in December 1973 the Ministry incorporated the anti-TB League under its jurisdiction as well as completing a national Five-Year Health Plan.

Recent efforts have been made to decentralize administrative functions. According to Decree No. 232 issued in April 1972, each of the four health regions was empowered to: (a) study and evaluate regional health needs: (b) plan the coordination of area-wide health programs; (c) provide adequate technical services to provincial health offices; and (d) evaluate program results. The Austral Regional Health Office, together with the University of Cuenca Medical Faculty, has undertaken several in-the-field investigations.

The functional chain of command at the national level goes from the Minister through the Sub-Secretary of Health (vice-minister) to the Director General of Public Health who has immediate responsibility for all MSP programs. There are three program areas: The National Directorate of Technical Services, with susidiary Divisions of Health, Promotion (including MCH and a special Department of Population), Epidemiology, Nutrition, Environmental Sanitation, Rural Health Services, Dentistry, General Services (Nursing, Social Work, Statistics, Health Education), and Medical care (hospital systems); the National Directorate of Administrative Services includes the Divisions of Finance, Personnel and Supplies; and the National Directorate of Local Services has the function of supervising and evaluating programs at the Regional, Provincial, Cantonal, Parish and Community levels. This structure is shown graphically in the following simplified chart.

Chart II



On a country wide basis there are four administrative regions (Central, Southern, Coastal and Manabi) encompassing a total of nineteen provinces. Regions and provinces have similar structures to those of the national level, and although there is discernible thinning out of personnel as the level decreases, functional responsiblities are duplicated as well. The Director of SNEM (National Malaria Eradication Service) is responsible to the Southern Regional Director.

The regional directors have supervisory responsibilities for unequal numbers of provinces and cantons which vary in the accessibility of the facilities and communities, as well as in the concentration of populations, ethnic groups, etc. The lack of travel funds and transportation facilities have precluded adequate supervision.

The provincial chiefs have under them a chief of medical care, an epidemiologist and the directors of health centers.

Further operational levels supervised by provincial directorates are the cantonal hospitals of which there are 32 (24 of which are nearing completion), parish sub-centers, health posts and dispensaris.

4. Budget for Health

A. Current budget of GOE = $240,000,000

B. Appropriation for Health = 24,000,000

C. Percentage of total budget dedicated to Health = 10%

The Government of Ecuador has been going through a reorganization process to integrate the activities of many of the ministries in terms of an overall plan for economic and social development, including the areas of education, housing, and health. A five-year plan for health has supposedly been approved and financed for the next two years.

5. Social Security (IESS)

While the MSP has fully integrated the medical care facilities, formerly under the Ministry of Social Welfare, with its preventive services, some of its services overlap and compete with the vastly more wealthy Social Security system (IESS). The latter operates four large hospitals of 1,200 beds (with the possibility of expansion by 450 more), 8 small hospitals and 35 dispensaries for its 330,000 insured members. The system's chief drawback has been that it provides no health coverage for dependents except maternity benefits. Social Security also gives workmen's compensation as a result of employment-related injuries, and old-age pensions. The new policy of the IESS is that the "social security should be progressively extended to cover all the

working population in both the urban and rural areas and should give services to the entire family rather than to only the insured worker". It is planned that within the next seven years, care will extend to all mothers and to children up to the age of 18. It is also planned that the IESS will cooperate with the MSP by paying for the use of Ministry facilities in areas where IESS has none. IESS is also contemplating payment to the MSP for preventive services, such as immunizations, malaria protection, and flouridation of water which is not now provided to insured persons.

6. Armed Forces

Another major health delivery system is that of the Armed Forces (MD). It does not actually duplicate MSP services, inasmuch as its only clientele are the active and inactive military members of the armed services and their families. There are now approximately 12,000 men in active service and for each such person there are 4-5 inactive persons with families. Nonetheless, the program does represent a "competing" service, in that priorities are established independently and funds and facilities are administered autonomously, thus causing a dispersion of scarce national budgetary resources. The Minister of Public Health would like to integrate the military system into the MSP, but acknowledges that under the present circumstances increased coordination is a more practical goal. Results of this effort can be seen, particularly in the field of family planning, where the military's nine centers and nineteen sub-centers for family planning are providing services to the civilian population. The Air Force serves inaccessible rural civilian areas by evacuating emergency cases and offering dental care.

7. Andean Mission

The Andean Mission (Mision Andina) started as a U.N. supported organization in 1954 to try to integrate the Indian peoples of Ecuador, Bolivia and Peru into the dominant culture of their respective countries. The plan

was to achieve this integration through betterment of housing, roads, food, education and health. Ecuador nationalized the Andean Mission functions in 1960, and in 1970 it became an integral part of the Ministry of Social Welfare and now it is based in the Ministry of Agriculture. During its earliest stages the staff consisted chiefly of doctors and paramedical staff since health was stressed. Later, engineers, agronomists, agriculturists and educators were also brought in.

The Mission first started in small communities of 300 - 1,200 persons, but they are now working in larger ones comprising 10,000 - 15,000 persons in which health services are integrated with cooperatives and with fish and wildlife activities. In each of their seven zones, there is one doctor, one nurse, one sanitary inspector, one dentist, and a variable number of auxiliaries. The auxiliaries live in the areas while the professionals usually live in the main city of the province. The medical program provides vaccinations (diptheria, whooping cough, tetanus, and at times, polio), maternal and child care, and environmental sanitation (latrines, septic tanks, and wells). The Ministry of Public Health makes vaccines available. There has been some talk of integrating this service into the MSP. Symbolic of beginning integration is the fact that training of staff is now being done in Quito and Cuenca by the MSP.

8. National Malaria Eradication Service (SNEM)

This was a separate program under the MSP until 1969 when it was integrated into the MSP structure as one of the programs within the Division of Epidemiology of the Directorate of Technical Services. With malaria going from about 1,350 cases in 1968 to 50,000 cases in 1969 as a result of monetary difficulties and concurrent relaxing of activities, the Government of Ecuador quickly made funds available and restructured the SNEM organization. The number of cases has now been reduced to about 10,000. USAID extended its loan, covering parts of SNEM operations until the end of 1972 and is currently assisting the MSP in utilizing the existing infrastructure of the malaria

eradication program for dissemination of family planning information in rural areas.

In the malaria zones of Ecuador, SNEM has one voluntary collaborator for every six hundred people. These collaborators were chosen by the spraying teams as they made their rounds during the attack phase. They would ask in each home which person in the village would be the best one with whom to leave medicines and slides for the collection of blood. At the end of the cycle of spraying the nominations were tabulated and the most popular person was approached to be the collaborator. The collaborator has two main functions, to make blood slides of all people who come down with fever and to give them presumptive malaria treatment. The slides are then sent to the zonal headquarters for examination and if a slide turns out to be positive, the person is followed up by the auxiliary, the full time paid SNEM worker of that area.

The auxiliary visits all of the voluntary collaborators every month. He also visits homes in specified areas to determine if all patients with fever have gone to the collaborator for blood test and treatment. The auxiliary also visits schools for health education. The auxiliaries are supervised by sector chiefs and there is an overall supervisor for each five or six sectors. Above the supervisor is the chief of the zone, which may contain as many as fifteen to twenty sectors.

9. Family Planning

A. Family Planning Activities - There is a Department of Population in the Ministry of Public Health, charged with the responsiblity for family planning activities. Through it, about 113 urban and rural centers have been equipped with family planning materials up to May 1972

It has also been engaged in training of the health personnel to provide family planning services. The department plans to further extend its services and to reach the rural areas, but the biggest problem is the lack of infrastructure for delivery of services.

There are a wide variety of feelings and attitudes about family planning programs and services in the country. From initial discussions it is probably safe to say that there is no one church, political, university, agency, individual, or any other point of view regarding family planning services, but that these are varied even within different formal and informal parts of society and the country. For example, the Mother Superior in one hospital in Cañar Province stated that they had done 39 tubal ligations in post partum patients since the beginning of the year and appeared to be pleased, or at least not displeased with that fact. The Madre of the other hospital in the area disapproved.

It appears that services were more available in urban areas than in rural areas. In the coast, there are reports of self-induced or illegally induced abortions. Hospital records do not indicate the manner of a septic abortion.

It does not appear that in Cañar Province it would be any more difficult than expected to include family planning services along with other maternal and child health services, as long as such services are given on a voluntary basis. Currently, in the Southern Region the largest family planning service operation is the University Hospital in Cuenca and is operated under the auspices of Planned Parenthood.

B. History of Service - 1966-1972 IPPE was vanguard in family planning in Ecuador. There are 2 clinics in Guayaquil, 1 in Cuenca and 1 in Quito. In 1968 the Ministry of Defense became interested in family planning and implemented services in health centers, hospital and rural areas. Services are provided to both military and civilian personnel. UNFPA recently began financing a portion of the program. In 1973 there were 23 service facilities with 4 mobile units functioning in Ecuador. In 1974 there will be 29 service facilities functioning in the country.

In 1968 the MSP had 133 service facilities operating in the country. By 1972, 113 of these were offering family planning services. The Andean Mission has 5 service facilities operating in the country. The Women's Medical Association (having few doctors only) operates 2 clinics in Quito and 1 in Santo Domingo. It is currently financed by Family Planning International Assistance. The Midwife Association has 1 clinic in the Maternity Hospital in Guayaquil. The National Family Planning Evaluation Unit in Quito is funded by AID.

Five thousand health people have received some training (4-5 days) in family planning. Others have received training for longer periods. In Quito and Guayaquil, post-partum facilities will be used as training sites.

Three of 23 facilities (MS) allow midwives to do examinations. Method ratios in Ecuador: IUD 70%, oral 20%, other 10%. Hospital septic abortion statistics do not distinguish between miscarriages and induced abortion, estimated (low) in Ecuador in 1971.

C. Voluntary Organizations - The IPPF affiliate in Ecuador (APROFE) has four clinics in operation in Quito, Guayaquil, and Cuenca. This organization has trained large numbers of professionals and paramedicals in activities related to family planning for its own program, for the MSP program, and for private services. It has been a major force in family planning information programs to the public through the press, radio and movies.

10. CARE and CRS are integrating their child feeding programs into a nutrition project under the National Nutrition Institute, to coordinate the work of all related agencies to bring about adequate nutrition for pre-school children. CARE, CARITAS, and the Brethren Church are carrying out small projects in rural areas to promote training of community leaders, to integrate peasant youth to the process of socio-economic development, and to encourage the communities to make improvements by their own efforts.

11. LEA, Red Cross, SOLCA - Three voluntary organizations supported almost completely by government funds are the Tuberculosis League (LEA), the Red Cross, and the League Against Cancer (SOLCA). Although the activities of these organizations were not discussed in detail, there seemed to be general agreement that the funds could be better utilized if they were spent through the national health delivery system. In this regard, the Tuberculosis League (LEA) was integrated into the MSP by decree in December 1973. One successful project of the SOLCA has been the assumption of responsibility for the examination of all Papanicolaou smears taken during examinations related to family planning services in the government health centers. AID had made long-term technical assistance available to train necessary technical personnel for this project.

12. External Assistance/Multilateral - The Pan American Health Organization (PAHO) has a number of technical people stationed in Ecuador. The Country Representative has been working with the MSP in the development of its Five-Year Plan which will have as a major goal the extension of health services to rural areas. A Regional MCH/Population Advisor has been involved in the Ecuador Five-Year Plan for family planning activities. PAHO also has malaria advisors in the country and is planning to assist in improving the epidemiological capabilities relative to eradication of malaria.

The United Nations Fund for Population Activities (UNFPA) is giving support to the Ministry of Defense for its family planning program, which until recently, had been receiving help from the U.S. AID Mission in Ecuador. The UNFPA is now negotiating with the Ministry of Public Health for support of its family planning program.

The United Nations Development Program (UNDP), through the Food and Agriculture Organization (FAO), is supporting a four-year program to strengthen the National Agricultural Extension Service. The UNDP has also been cooperating through technical assistance in the control of eradiciation of hoof-and-mouth disease.

The Inter-American Development Bank (IDB) has made technical assistance available for agrarian reform programs of lands owned by the Roman Catholic Church. To date Ecuador has obtained from the IDB over $28,000,000 for supplying potable water and improvement of sanitation in urban areas. A large investment has also been made with IDB funds for the reorganization of the administration and curriculum in institutions of higher education and for expanding their facilities. Technical assistance has been made available for improvement of technical training.

The World Bank (IBRD) has made large loans for road construction in the southern region, which will facilitate extension of health services to more remote areas.

Bilateral - United States-USAID has made major inputs into the Ecuador programs for family planning, nutrition and malaria control. USAID began its support for a project on responsible parenthood in 1966, collaborating with both the MSP and the MD. This helped to develop the MSP Population Department, to increase the number of health centers giving FP services, to train large numbers of doctors nurses, social workers, and auxiliaries, to develop programs for audio-visual input, to install an evaluation system and include population content in training of primary and secondary school teachers.

USAID support of malaria eradication activities through loans has terminated recently although it is expected that additional supplies of DDT will be made available to the program. There is also a USAID-supported project designed to utilize SNEM infrastructure for family planning education and promotion.

USAID is now supporting a project to improve the nutrition of pre-school children with the expectation that children free from debilitating disease and malnutrition will encourage families to plan fewer children.

Another project provides for the costs of including population dynamics and family planning in the curricula of the three medical schools.

USAID has also been supporting a program with the Ministry of Social Welfare in which social workers in 81 communities are motivating rural couples to go to rural health centers, including those of the Andean Mission, for services.

Germany has been carrying out a technical assistance project of agricultural development in one province. It has also given a large loan for the utilization of subterranean water for irrigation and drinking. It has also made investments in the improvement and extension of primary and technical education.

13. Health Manpower and Womanpower

A. Medical Schools - The three oldest medical schools of Ecuador, in Quito, Guayaquil, and Cuenca, graduate about 120 physicians a year. A fourth school, in Loja, is in its third year and therefore has not yet had a graduation. The curriculum extends over seven years, which include one year of internship in a provincial hospital and a second year in a health sub-center.

B. School for Obstetrices (Mid-wives)- There are three schools to prepare these high-level mid-wives, one in each of the universities at Quito, Guayaquil, and Cuenca. The curriculum is five years long, including one year of rural practice. About 30-35 obstetrices are graduated each year. These professionals prefer to remain in the cities where there is a demand for them and where they can command a better salary.

C. Nursing Schools - There are five nursing schools in Ecuador that graduate only about 45 nurses a year. The course is three years in length plus one year of rural service.

D. Auxiliary Training - Auxiliary nurses are trained in the urban areas. Preferred candidates are those from the areas where the courses are offered. Courses are also given for x-ray technicians, laboratory technicians, sanitary inspectors, and home economics technicians.

There are approximately 2,000 physicians in Ecuador, a ratio of 3.3/10,000 population, the greatest concentration being in Quito and Guayaquil. In localities of less than 100,000 inhabitants, the physician/population ratio is 1.6/10,000. There are only 150 physicians in all rural areas.

There are approximately 520 nurses in Ecuador, a ratio of 0.9/10,000 inhabitants. In localities under 100,000 there are only 141 nurses, a ratio of 0.3/10.000.

Auxiliaries total 2,500 for the country, of which 1,100 are trained. This represents 4.1/10,000 inhabitants.

A great deal of in-country short-term training will be going on in Ecuador during the next two years to better qualify staff of different ministries to carry out family planning programs. Personnel of the following governmental institutions will be involved: Ministry of Social Welfare, Andean Mission, Rural Medicine Program, Health Center Directors, Doctors and Nurses of the MSP, School of Nursing, School of Midwifery, Doctors of the National Police, Social Security Institute, League Against Cancer, Ministry of Education, Ministry of Defense, Ministry of Agriculture, Obstetrics/Gynecology Societies of Quito and Guayaquil. Fifty-nine courses are planned for about 2,500 participants. There will also be 80 participants receiving longer-term training (up to two years) in other Latin American countries or in the United States. All of this training is supported by USAID.

VIII. HEALTH IN RURAL ECUADOR (Site for DEIDS)

Rather than discuss rural health in general throughout Ecuador, the situation, in somewhat more depth, is described below for Canar Province, the initial site in the Southern Region (Zona Austral) where the DEIDS Project will be developed. It represents an interesting initial demonstration area as it lies geographically both in the Sierras and in the Costa. Thus Canar represents both similar and different kinds of problems including topography, transportation, economy, health, etc.

Canar Province is one of five provinces (Azuay, Morona Santiago, Zamora, Loja and Canar) in the Southern Region (Zona Austral) of Ecuador -- which in turn, is one of four administrative regions in this country. It is one of the poorest and most rural provinces in a country which, as a whole, is among the least developed and least industrialized of the 20 Latin American republics.

The relative poverty and rurality of Canar Province is reflected by the fact, for example, that in 1965 among the 1664 deaths occuring, 85.5 percent were not attended by a doctor even in the final illness; this compared with no medical attendance of 60.6 percent of deaths in Ecuador as a whole. Among the 19 provinces in the whole nation, by this particular health service indicator, Cañar Province was the second from the bottom.

The population of Cañar Province in 1972 was 138,400, divided among three cantons, which are, in turn, subdivided into 28 parishes (paroquias), as follows:

Canton	Parishes	Population
Cañar	13	67,030
Azoques	11	45,170
Biblian	4	14,000

The capital city of the province is the city of Azoques in the canton of the same name; the second largest urban center is the city of Cañar in the canton of that name. (Thus Canar is the name of a province, a canton, and a

city -- not to be confused with each other.) A much larger city, Cuenca, is just a few miles south of the province of Canar in the adjoining province of Azuay; Cuenca is the capital of the entire Southern Region and contains many government, marketing, and health resources which serve the population of the Province of Cañar. A reasonably good road connects the cities of Cuenca, Azogues, and Cañar (in that order from south to north).

The Cañar province population is overwhelmingly rural and of low income, engaged predominantly in agriculture. There are varying definitions of "rural" in Ecuador; one of these defines rural as all population outside of provincial captial cities. Since the city of Azogues has about 30,000 population, by this definition, the province would be about 97 percent rural. A majority of the population lives in parishes not connected by paved roads to any urban center.

1. Leading causes of morbidity - Parasitism and diarrheal diseases (such as gastro-enteritis) as well as malnutrition and anemia are the two leading and most prevalent causes of diseases. Respiratory diseases, communicable and infectious diseases, and complications of birth and pregnancy and high fertility are also ranked as leading causes of morbidity. The following table utilizes the best available data which summarizes morbidity factors at two hospitals and two health centers with the best and most complete record systems.

PRINCIPAL CAUSES OF MORBIDITY

Health Institution	Total Cases January - June 1973[1]	% Cases Parasitism Enteritis Other Diarheal Diseases	% Cases Avitaminoses Malnutrition Anemia	% Cases Respiratory TB, Bronchial Pneumonia	% Cases Communicable Infectious	% Cases Problems Childbirth Pregnancy	% Cases All Others
Azogues Hospital[2]							
Hospitalized	1,311	27	3	10	7	--[3]	53[4]
Outpatient	1,170	38	2	9	11	4	26
Canar Hospital							
Hospitalized	1,254	41	9	20	--	--	30
Outpatient	2,940	38	7	18	17	6	14
Health Center,[5]							
Azogues	557	49	1	6	33[6]	--	11
Center, Biblian							
Adult	1,405	25	3	8	3	8	53
Child[7]	1,238	59	6	13	5	--	7

[1] In most cases, and unless otherwise indicated, data are from actual records cumulated for the first six months of 1973.
[2] Estimated data based on 1972 records for same period.
[3] Data do not include 240 live births and 12 neonatal deaths.
[4] Nearly one-fourth of this category were injuries of a traumatic nature (fractures, accidents, etc.)
[5] Nearly all outpatients were children, but no figures as to the percentage are available.
[6] Most were cases of influenza, but the exact number remains unknown.
[7] Refers to children of primary school age and younger.

2. Leading causes of mortality - The causes of death parallel those of morbidity. Because only 11.8% of deaths were medically certified in 1972 (and even those are diagnostically suspect), it is difficult to assess the relative importance of mortality rates. There is a high percentage of infant deaths -- most of which are due to malnutrition, dehydration from parasitism, and respiratory problems. In most wealthier countries, over 70% of the registered deaths occur among the population age 50 years and over. The opposite ratio prevails in Ecuador, no doubt reflecting the relatively high number of infant deaths. According to the medically certified deaths registered in the hospital of Azogues, the leading causes of non-fetal deaths were: dehydration from parasitism or gastro-intestinal disorders (20%); meningitis (14%); enteritis (10%); pulmonary TB (10%); coronary failure (10%); cerebral damage (8%); others (28%).

Professional judgement has coincided with the analysis of available data with one exception: the ranking of malnutrition and anemia. The physicians, however, said there was no real conflict as malnutrition is so endemic that unless an individual's well-being is seriously aggravated with another disease, that person receives no diagnoses and treatment. As a medical reality, however, malnutrition is closely linked with <u>all</u> principal morbidity rates. In fact, the inter-related aspect of the major disease categories should be stressed in the following listing which ranks the most important health problems in rural Cañar:

A. Primary:
1) Parasitism, enteritis, and other diarrheal diseases
2) Avitaminoses, other nutritional deficiencies, anemia.

B. Secondary:
3) Respiratory (bronchitis, pneumonia, TB, other pulmonary).
4) Complications of childbirth and pregnancy.
5) Communicable and infectious diseases.

3. Major determinants of health problems

A. Lack of environmental sanitation. <u>No potable water.</u>

A majority of the city of Azogues and the towns of Biblian an

23,000). However, there is no potable water in the entire province of Cañar. The number of water pumps in the province totals 120 (37 in Canar canton, 67 in Azogues canton and 18 in Biblian canton). Except for 21 other small communities (anejos) with piped water, the majority of the population (in nearly 200 anejos) depends on rivers, springs, creeks, or water pumps (wells) for water.

No adequate human waste disposal. The three principal towns of Cañar Province have some sewage disposal (which is untreated and runs into nearby rivers). An estimated 20,000 people benefit from this service. The remaining population must resort to the use of 116 latrines scattered throughout the province, a goodly percentage (about 37%) of which are limited to school usage. The control of human wastes, therefore, is a critical problem.

Ecological and climatic conditions. Poor housing (and a high ratio of persons per dwelling) does not permit adequate protection from the environment for the overwhelming majority of the population in rural Cañar. This undoubtedly contributes significantly to the high incidence of respiratory disease as well as communicable and infectious diseases.

Lack of education. Perhaps this is the single most important factor. Without knowledge and understanding of preventive health measures, a recognition of community health problems and services, and the adoption of sanitary practices, any effort is doomed to failure.

4. Malnutrition

A. Lack of nutrients. Scarce production of nutritious foods, despite an adequate natural resource base, hinders proper food consumption.

These nutritional deficiencies play a major role in the etiology of many of their health problems.

Beate Salz has summarized the findings of several reports on the diet of the Sierra Indians:

"Staple items, roughly in order of importance in the daily fare, are maize, barley, potatoes, quinoa, other native cereals, and tubers, wheat, a number of bean varieties, various gourds and squashes, some vegetables such as cabbage, onions and wild herbs, and always aji (a pepper). Meat is universally rare, mostly a dish for festive occasions, and ordinarily one of the few items that is bought with the exception of cuy (guinea-pig), which is kept in all Indian homes. Other food items that are bought are salt, sugar (unrefined, in the form of brown cakes, panela), and fats. Milk is hardly ever drunk fresh even where it is available, although many diary articles, including fluid milk, are handled and actually produced by the Indians; milk may be used occasionally in cooking or made into cheese".

One of the latest activities being undertaken by the National Institute of Nutrition is the use of modern broadcasting and advertising techniques adapted to Ecuadorean cultural patterns in order to educate the people on good health habits and practices. They are especially interested in the creation and production at low cost, of a nationally or regionally processed high protein-caloric multimix or weaning food formula to supplement the diet of the undernourished population - especially women and children -- based on acceptable and palatable native foods of high protein and caloric value, such as quinoa.

B. Poor economic conditions. The availability of proper foods is one problem. A corollary is the economic inability to produce or purchase for consumption the proper foodstuffs. The typical farmer, whose family lacks the proper proteins, raises a few chickens. However, he is forced economically to sell this product rather than consume it. Often he is unable to raise domesticated animals or grow adequate foodstuffs because he has no credit, little good land, or poor farming techniques.

C. Cultural factors. Even if the supply of nutritional foods were available (from a supply and "demand" point of view), the rural person is

often prevented from benefiting by cultural constraints. (Traditional food preparation which does not take full advantage of the nutritional potential of foods, and resistance to non-traditional foods are examples of such constraints).

5. Lack of medical attention.

A. Improper diagnosis. A review of morbidity and mortality rate indicates a high percentage of cases in which symptoms, not causes, are delineated. No x-ray equipment, a minimum of laboratory tests, and no medical referral system bespeak the poor diagnostic quality available.

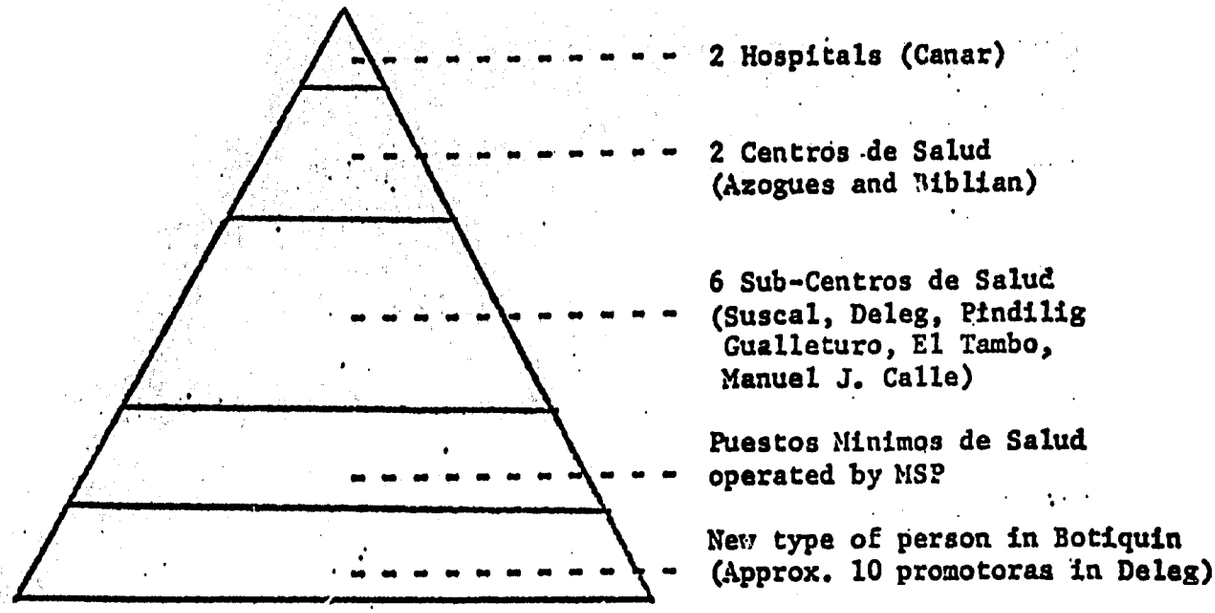
B. Ineffective medical care. Mention has been made of the lack of medical centers in the province. There is both a great misallocation of resources (personal and material) and an inefficient utilization of personnel.

C. Lack of medicines and other resources. The distribution and stocking of necessary drugs is pitifully inadequate. For example, the principal need for drugs in rural health posts is for anti-parasitic and anti-diarrheal medicines. Almost none are available. Requests for resupply are on the average 8 months in arrears. New shipments are rarely completed according to order. Also, several physicians questioned the quality of drugs received.

6. Health Services.

The health services in Cañar Province, the site for the initiation of DEIDS, are being described as an example of rural health services in general.

A. Ministry of Public Health. The health delivery system, as perceived by the MSP is pyramidal in form, with MSP service centers occupying different blocks in the pyramid. It appears as follows:



Sub-Centro - ideally has 1 MD, auxiliary nurse and 1 sanitary inspector

Puestos Minimos de Salud - ideally has 1 auxiliary nurse and 1 sanitary inspector

Promotora - Quasi-MSP related

There is a general hospital of 120 beds at Azogues, which theoreticall serves the entire province, and a cantonal hospital of 60 beds in the city of Cañar. The bed population ratio, therefore, is about 1.2 per 1,000. Both of these institutions are old, with large wards, limited equipment, and small staffs. The expenditure for all services is said to be about 60 sucres ($2.50) per patient-day. Each of these hospitals has an out-patient department and emergency room. Ultimate control over the hospitals is retained by the central Ministry of Health, in Quito, which pays salaries of all personnel directly and must give final approval to all appointments. (The hospital budget alloted to regional authorities is limited to purchase of supplies, transportation, and related non-manpower expenses).

Health centers offer the following services: 1) maternal and child health activities (including Family Planning), 2) dental care to pregnant women and pre-school children, 3) immunizations, and 4) environmental sanitation. The chief of medical care is in charge of the provincial hospital which provides:

1) adult medical care, 2) obstetrics, 3) pediatrics and 4) general surgery.

The health sub-centers for ambulatory care are located in seven of the provinces' 28 parishes, as follows:

Parish	Population
(Canton of Cañar)	
El Tambo	
Suscal	
Guelleturo	14,635
Manuel J. Calle	
(Canton of Azogues)	
Pindilig	2,260
Deleg	6,200
(Canton of Biblian)	
Biblian	2,275

Thus, a total of 25,370 people live in parishes served by Ministry units for ambulatory health care or about 18% of the provincial population. If one adds the population of the cities (or towns) served by the out-patient departments of the two hospitals, the proportion (according to the Regional Health Officer) comes to about 26%. Since a great portion of the population, even in parishes containing health sub-centers, are hardly accessible to them, however, one may estimate conservatively that about 80% of the population are without formal health services (a figure quite close to the non-medically attended deaths of 85% in 1965).

The staff of a health sub-center consists typically of a doctor, an auxiliary nurse, and a sanitary inspector. Vacancies are relatively common. While the doctors are theoretically "full-time", this means 33 hours per week, it appears that all or most of them engage also in some private practice. The subcenters' doctors are all recent medical school graduates who are satisfying their mandatory year of rural public health practice. Until recently the Provincial Health Officer, located at the provincial capital city of Azogues, is a private practitioner (surgeon) who puts part time into his administrative duties. He is assisted by a recently appointed provincial

Epidemiologist -- just returned from a year's MPH training at the University of Puerto Rico.

The functions carried out at the health sub-centers are overwhelmingly curative medicine. There appears to be little systematic provision of preventive health service to mothers and children or to others. The principal exception is a program of vaccinations against smallpox, measles, and some other communicable diseases conducted, not from the sub-centers, but from the Provincial Health Office, by a Chief Vaccinator and his four assistants. These men go throughout the province house-to-house (in the manner of DDT-spray teams in malaria control programs) vaccinating children, when they can persuade the families.

At the sub-centers there is a supply of drugs for treatment of common illnesses. Superficial inspection suggests that the inventory of drugs could be much improved, both in terms of effectiveness and economy. Patients are charged fees for these drugs, both at the ambulatory units and the hospital OPD's.

B. Promotores de Salud, a New Category of Rural Health Worker.

Since May 1973, the population of one parish, Deleg (6,200) has been served by a new type of resource: health promotoras ("promotoras de salud") housed in small one-room structures or "botiquines". These are typically young women, with elementary educations (4-6 grade) from the villages who have received a 4-month training course in limited health care by a team of volunteers including a registered nurse (RN) from the U.S. Peace Corps. In the "botiquines", as in the sub-centers, services are primarily curative in nature and the drugs available are for treatment of only common illnesses.

There are 8 small communities in the parish of Deleg served by these "promotoras", who are in turn supervised by a graduate nurse at the Deleg health sub-center. The latter young woman is a recent graduate of the University o

Cuenca School of Nursing, who is currently putting in her one year of rural service (mandated by a national law for all university trained nurses and doctors since 1970). It should be noted that, at this time, none of the other six parishes with health sub-centers are served by "promotoras" -- nor, of course, any of the remaining 21 parishes in the province.

C. Social Security - Other organized health care resources in the Province of Canar are two small dispensaries of the Ecuadorian Institute of Social Security ("Instituto Ecuatoriano de Seguridad Social" - I.E.S.S.), one each in the cities of Azogues and Canar. The I.E.S.S. program covers only insured industrial or commercial workers (not agricultural) and in 1971 there were 3,570 such insured persons in the province. Hospitalization of these persons is provided in a relatively modern IESS hospital of 60 beds located in nearby Cuenca. The IESS has recently inaugurated a new program for coverage of related small rural communities but none of these is currently located in the Province of Canar.

D. Private Sector - The remaining health service resources in the province are small private pharmacies, found in the main towns, and private physicians. There were estimated to be 10 to 20 of the latter, all in the main towns. In a few towns, dentists evidently come in from Cuenca for private service one day a week. There are also various resources in Cuenca, including the University Hospital, the Social Security Hospital, and several small "clinicas privadas" that to some small extent serve the people of Canar Province.

The most widespread health service resources of the Province of Canar are probably the local "curanderos" and midwives "parteras" who live in the villages or "communes" or "parcialidades".