

SUMMARY DESCRIPTION OF THE PROJECT

Sector Issues

- I. The rural and indigenous populations have been neglected in Ecuador.
- II. Institutional weaknesses in the Ministry of Health are legion and prevent optimal health care delivery.

Focus of Report

This report focuses on the rural poor and indigenous populations in Ecuador and recommends areas of involvement by the Inter-American Development Bank so that health may be improved in the target populations and specific institutional weaknesses may be addressed and corrected.

Recommendations for Investment:

- I. Projects that require immediate action.
 - A. A national inventory of all private and public health facilities to include the status of human resources, buildings, and equipment.
 - B. The provision of funds for a technical cooperation project to prepare a comprehensive vector-borne disease control program.
 - C. Creation of a project team to coordinate the preparation of all investment and technical cooperation proposals.
- II. Projects that may be developed over a period of five years.
 - A. An integrated project or sector loan which would incorporate the following components:
 1. Restructuring the MOH, decentralizing its activities, and supporting institutional strengthening of the most vital administrative subsystems.
 2. Strengthening the priority health programs.
 3. Reorganizing the ambulatory care network to include the rehabilitation of the existing hospital-based outpatient clinics and emergency services and laboratories, conversion of selected small hospitals to ambulatory care centers, and the construction of new ambulatory care centers.
 4. Changing the curriculum of training programs throughout the nation to reflect true needs and economic realities.
 - a. Training mid-level and allied health personnel.
 - b. Reorienting medical school curriculum to have as the highest priority the training of Family Physicians in two to three year residency programs.

- B. A vector-borne disease control program. (To include all the necessary components to replace the short- and mid-term activities and investments of I.B.)

Consultant's Remarks

Despite the multitude of problems plaguing Ecuador in general and the Ministry of Health in particular, excellent opportunities exist for Inter-American Development Bank involvement and investment in the health sector, which will result in long-lasting benefit to the people of Ecuador. There is, however, a sense of urgency in acting on these recommendations since such changes could feasibly be made only in the early years of President Borja's tenure.

CONSULTANT'S REPORT: Sector Analysis and Key Recommendations

INTRODUCTION

The Ministry of Public Health of Ecuador requested that the Inter-American Development Bank provide a consultant to undertake an Institutional Diagnosis of the Sector and identify projects of investment. This report focuses on: 1) the consultant's critical analysis of the sector, particularly with respect to the rural (and marginal-urban) poor and the indigenous population; 2) projects for investment with emphasis on timing.

The consultant's background includes yearly visits to Ecuador since 1966 of two to sixteen weeks' duration, familiarity with the structure of the health sector, familiarity with the various agencies impacting on health within Ecuador, and an intimate knowledge of health conditions in the rural areas, particularly Esmeraldas Province, the eastern lowlands, and certain highland regions. The consultant has lived and worked with indigenous populations including the Chachi and Tsatchela of western Ecuador, the Cofan, Siona-Secoya, Waorani, Shuar, Achuar, Quechua del Oriente of the eastern lowlands, and Quechua speaking populations of the high Sierra. Sixty-nine documents were reviewed by the consultant in preparation for this assignment. (For enlightened discussion of Health Sector issues in the 1980's, including population, health and nutrition, resources and their utilization, and the performance of the Ministry of Health, the reader is encouraged to consult the "Documents Reviewed" at the end of this report, particularly those documents with asterisks.) In addition to meeting the key individuals within the Ministry of Health (MOH), contacts were made with UNICEF, PAHO, World Bank and, particularly, USAID, a major donor in the sector. A four-day field visit was made to coastal Esmeraldas Province, and a three-day field visit was made to highland Bolivar Province during the consultant's visit to Ecuador in May and June 1989. (See Field Reports)

ECUADOR

A concise description of the geography of Ecuador is presented in the 1989 South American Handbook (Reference #65) and is quoted here: "Ecuador is bounded by Colombia to the north, Peru to the east and south, and the Pacific Ocean to the west, with an area of about 283,561 square km. The Andes, running from the Colombian border in the north to the borders of Peru in the south, form a mountainous backbone to the country. There are two main ranges, the Eastern Cordillera and the Western Cordillera, separated by a 400 km. long trough, the Central Valley, whose rims are from 40 to 65 km. apart. The rims are joined together, like the two sides of a ladder, by hilly rungs, and between each pair of rungs lies an intermont basin with a dense cluster of population which includes the large Quechua speaking Indian population. These basins, which vary in altitude between 1,800 and 3,000 metres, are drained by rivers which cut through the rims to run either west to the Pacific or east to join the Amazon. The whole mountain area is known as the Sierra. Both rims of the Central Valley are lined with the cones of more than thirty volcanoes. At least eight are still active.

"East of the Eastern Cordillera the forest-clad mountains fall sharply to the plains - the Oriente - through which meander the tributaries of the Amazon. This eastern lowland region makes up 36% of Ecuador's total territory but is only sparsely populated by native Indians and agricultural colonists from the

highlands. In total, the region has only 5% of the national population, but colonization is now proceeding rapidly in the wake of an oil boom.

"Between the Western Cordillera and the Pacific lies the Costa, 685 km. from north to south and some 100 km. wide. It is from this area that Ecuador draws the majority of its agricultural products for export. Guayaquil, the main city of this region, is 464 km. from the capital, Quito, which lies high in a northern intermont basin (Figure 1).

GOVERNMENT

"There are 20 provinces, including the Galapagos Islands. Provinces are divided into cantons and parishes for administration.

"Under the 1978 constitution, the vote was extended to include all literate citizens over the age of 18. The president of the Republic and vice-president are elected for a four-year term. The president may not stand for re-election. The legislative branch consists of a single Chamber of Representatives of 71 members, which meets for two months of the year."

The current President, Rodrigo Borja Cevallos and Vice-President Luis Parodi Valverde took office in August 1988. The new government has taken a series of economic measures to attack the imbalances which face the economy. The measures have included a significant devaluation of the Sucre and continued mini-devaluations, adjustments in internal prices, cuts in public expenditures, and prohibition of certain imports. Gasoline is highly subsidized as are electricity and water rates and certain interest rates. (Reference #24)

By all accounts there has been a deterioration in the social situation in Ecuador in recent years with a marked increase in student unrest, strikes, and work stoppages (particularly within the public transportation and trucking unions) and, for the first time in the consultant's memory over a 23-year period, an alarming increase in terrorist activities.

THE ECONOMY

The transformation that took place in Ecuador in the early 1970's from an essentially agricultural economy to a predominantly petroleum economy has led to marked socioeconomic changes.

Approximately 40% of the fiscal resources within Ecuador depend on exportation of petroleum. (Figure 2 illustrates the declining revenues from petroleum and the increasing importance of shrimp farming.) Shrimp farming is truly booming along the coast of Ecuador and in the late 1980's, accounts for a major percentage of non-petroleum exports. (Ecological damage to the coastal mangrove swamps by the construction of shrimp ponds on a massive scale has caught the attention of environmentalists worldwide.) Ecuador is one of the world's largest exporters of bananas, and coffee is an important cash crop. Cocoa, because of disease and more recently heavy coastal rains, has not regained the prominence that it once enjoyed as an export crop in decades past.

Gross National Product (GNP)

GNP 1987 (millions)	\$13,589
GNP 1988 (millions)	\$13,820
GNP 1989 (millions)	\$14,055
Annual GNP Growth	1.7%
GNP per Capita	\$ 1,351

POPULATION

Demographics

Population 1975	7,063,000
Population 1989	10,507,000
Population 2000	14,070,000
Population Growth	2.69% (Figure 3)
Population Density	93/sq mi
Population Doubling Time	26 years
Literacy Rate	85 %
Urbanization	52.1 %

Sixty percent of Ecuador's urban population has access to potable water, while only 30% of the rural population is assured of safe drinking water. Public sanitation is available to 60% of the urban population and only 8% of the rural population. (An additional 16% of the rural population has access to latrines.) The Quechua speaking Indians of the rural Sierra are especially lacking in access to safe water and proper sanitation. According to a 1974 survey, 60% of the population of Ecuador lived in inadequate housing.

Languages, Ethnic Groups and Religions

Although Spanish is the official language of Ecuador, as many as 2 1/2 million Indians of the high Sierra speak Quechua. (Estimates of the number of highland Indians run from a very conservative 800,000 to a more widely accepted figure of 2,500,000.) Other cultural and linguistic groups include: Awa 3,000; Chachi 6,000; Colorado 10,000; Quechua del Oriente 40,000; Achuara and Shuara 80,000; Waorani 1,600; Cofan 500; Socoya-Siona 1,000; Zaparoan 300 (Figure 4).

Ethnic groups are broken down as follows: 55% Mestizo; 25% Native American; 10% Spanish; 10% Black.

Religions: 95% Catholic; 5% Other.

HEALTH SITUATION

Despite improvement in various areas, most notably in the significant reduction in infant, child, and maternal mortality over the past three decades, health conditions overall have deteriorated in recent years. This process has accelerated since the landmark World Bank Population, Health and Nutrition Sector Review of July 1986, which called attention to the plight of the rural, indigenous, and low-income population following the economic recession precipitated by the 1986 drop in oil prices. Adding to the fiscal crisis were the disastrous floods of 1983, which destroyed much of the coastal highway system

and the earthquake of 1987, which disrupted the flow of oil from the fields of the eastern lowlands. Contributing to the stagnation at all levels within the Sector is the fact that Ecuador consistently spends less on health care than most countries with comparable per capita levels of income.

Situation of Health

Life Expectancy (M)	64.0 years
Life Expectancy (F)	64.0 years
Crude Birth Rate	35.5 / 1000
Crude Death Rate	7.7 / 1000
Infant Mortality	66.0 / 1000

In 1986, the principal causes of all deaths under five years of age were: respiratory infections (22%), intestinal infections (22%), perinatal conditions (22%). (Vital statistics are estimated to under register by more than half the neonatal deaths. Post-neonatal deaths and deaths at ages 1 to 4 years are regarded as relatively accurate.) Infant and child mortality remains at a substantial level, although it is encouraging to note that there has been a decline to approximately half the levels of 1960's. Maternal mortality is still approximately 20 times higher than in North America, although it has dropped by 40% since the 1960's. (Postpartum hemorrhage (27%), toxemia (23%), and complications arising during labor (17%) are the leading causes of maternal death.)

SELECT DATA SHOWING DISPARITIES AND TRENDS

Urban-Rural and Regional Differences in Infant and Child Mortality

There are higher mortality rates in the rural regions nationwide and the rural Sierra rates, reflecting the largely Indian population of the highlands, are the highest in the nation (Figure 5).

Infant and Child Mortality According to Mother's Education

There is a clear relationship between infant and child mortality and the mother's education (Figure 6). Mothers living in rural areas, particularly Indian mothers, tend to have the least opportunity for education and the highest infant and child mortality.

Vaccination Coverage (1988)

The range of vaccination coverage varies by province (Figure 7).

It is of interest that in the poor and relatively isolated Provinces of Bolivar and Los Rios, vaccination coverage is in the general range of the Provinces of Pichincha (Quito) and Guayas (Guayaquil). This high rate of vaccination may be attributed to the targeting of Bolivar and Los Rios by the MOH in a demonstration project to show the effectiveness of a properly designed and reasonably well-managed Primary Care Health Delivery System. (See Consultant's Field Trip to Bolivar Province)

Prevalence of Malnutrition

Marked differences in the prevalence of malnutrition exist within the country.

As may be seen from Figures 8, 9, 10, 11, differences in malnutrition exist province by province but also can be identified and mapped at the cantonal level.

Malnutrition of infants, children, and mothers is thought to be an underlying factor in at least 1/2 of all reported deaths, with the worst problems in the rural Sierra. (Not appearing in any statistical data is the serious problem of malnutrition among the Chachi Indian population of Cayapa River due to depletion of wild game and fish.)

Tuberculosis

Nationwide, there has been a steady increase in the incidence of tuberculosis (Figure 12). In certain lowland Indian populations, tuberculosis may well be the number one cause of death from infectious disease in adults. Data does not exist to prove this, but it is the strong impression of those of us who have worked with Amerindians over the past two decades that this is so. The BCG program has become inactive in many areas of Ecuador.

Malaria and Dengue

The incidence of malaria took a marked upswing after 1982 (Figure 13). Numerous deaths from falciparum malaria occur each year. (See consultant's Field Visit for Esmeraldas Province.) Nearly 50% of Ecuador's population is exposed to malaria, with the highest attack rates in the Costa region.

Summarizing the state of the Malaria Control Program, in June 1988, a USAID report concludes: "This is the first time under AID Project 518-0049 that a resurgence of malaria has occurred during a period of our intervention. It is argued in this paper that responsibility for that sad state of affairs rests with the government of Ecuador (GOE). It has failed in meeting its commitment to procure and deliver crucially important insecticide supplies (DDT). Further, GOE budget support for required administrative and technical personnel and field supplies has been inadequate. The GOE has not given the program the priority attention that it deserves. The Malaria Service, SNEM - for three decades deservedly one of Ecuador's most respected, functional bureaucracies - has fallen into apparent demoralized incompetence, slow in logistic support to the field and seemingly helpless in the face of aggravated labor problems which have virtually paralyzed crucially important, cyclical household spraying operations since mid-1986. These labor problems have been particularly aggravated in Esmeraldas, which produces about one-half of Ecuador's malaria problem."

Since the June 1988 USAID report, there is evidence that in some respects the new government has taken a more serious interest in malaria control in that DDT and other insecticides have been purchased; there is a new organizational chart, and 75 new sprayers have been hired in recent months. On the other hand, there appears to be no firm "Plan B" on the part of MOH once AID concludes its commitment to malaria control in January 1990. (Actually, some funds were held in reserve, and AID could probably continue its effort until 1991.)

A large epidemic of dengue occurred in Guayaquil in early 1988. This was of the "classic" type, and few cases of severe disease were reported. There is considerable concern within the Ministry of the possibility of the appearance of another dengue serotype with more serious consequences. There is an undercurrent of alarm within the current government of the consequences of infant and child deaths and the political fallout should a more lethal form of dengue return. (Numerous governmental and non-governmental health workers confirmed that dengue cases continue to occur.)

A computer center is now in operation at SNEM offices in Guayaquil. The potential exists for generating valuable data and tracking trends.

Leishmaniasis

It is the opinion of Ecuadorian physicians and expatriot physicians working in Ecuador (and the personal opinion of the consultant, who has worked in the area of leishmania for several years in Ecuador), that the incidence of cutaneous leishmaniasis during 1988-1989 reached "explosive" levels, particularly in areas of recent intense colonization such as the western Province of Pichincha. No one has data to prove this, however.

Onchocerciasis

Another "exotic" tropical disease which appears to be increasingly prevalent in certain regions and which leads to much morbidity, including blindness, is onchocerciasis. The incidence of onchocerciasis among inhabitants of the Cayapa River in northwestern Ecuador is high.

Miscellaneous Diseases

There are increasing numbers of cases of paragonimiasis and American Trypanosomiasis, or Chagas Disease. Intestinal parasites including ascariasis, trichuriasis, strongyloidiasis, hookworm, amebiasis, and giardiasis are, of course, prevalent throughout Ecuador as they are in all poor nations of the world.

Population Movement

Figure 14 illustrates the National Development Plan (1980-1984) and is a useful visual representation of development in that the governments of 1984 and 1988 have, for the most part, adhered to this basic scheme.

Figure 15 shows areas of colonization and agrarian reform. This map clearly shows the major areas of colonization in the lush basin north of Guayaquil and west of the Andes and the area of intense colonization in the foothills east of the Andes in the Amazon drainage area.

Figure 16 gives an overview of positive and negative migratory balance and indicates the major routes of migration present in the 1980's.

In addition to the implications for health and disease of large population movements, it should be noted that the occupation by colonists of traditional tribal lands has had a devastating effect on the health and cultural integrity of many lowland tribes.

STRUCTURE OF THE HEALTH SECTOR

Physical and Human Resources

Existing buildings in some rural provinces seem, for the most part, adequate in number, design, and overall soundness of construction. Noticeably absent in certain cantons (particularly in the Costa region), however, is any indication of an ongoing effort in maintenance of the physical facilities. Order and cleanliness have become the exception rather than the rule. Screens have disappeared from windows of wards, surgery suites, and offices in areas endemic for malaria. Beds uniformly lack sheets for the mattresses (and often lack mattresses). Thus, patients lie on bare mattresses which are stained with the excreta of previous occupants.

As an illustration of the trend of deterioration within the Sector, if one compares, for example, the condition of equipment in provincial and cantonal hospitals between the "boom" years of the mid-1970's with mid-year 1989, one is forced to conclude that throughout the country equipment has become inoperative due to a lack of adherence to standard maintenance procedures and failure to repair breakdowns. The status of supplies on hand (essential medicines, IV solutions, IV infusion kits, suture materials, anesthetics, etc.) can only be described as pitifully inadequate in rural areas. Even in large cities such as Esmeraldas, supplies and medicines are unexplainably absent, in short supply, or often outdated. (See Consultant's Field Visit to Esmeraldas Province.)

The two most important providers in terms of capacity, budget, and population coverage are the Ministry of Health and Social Security (IESS). "MOH is theoretically responsible for providing preventive services to the total population and curative services to about 75% of the population, but it reaches only half of its assigned target population. IESS, through its medical social services program (IESS/MS), covers 8.5% of the population, and through its program for farm workers (IESS/SSC) reaches an additional 4.5%."

In 1988 there were an estimated 11,000 physicians of whom 5,000 were primarily in the public sector. Three-fourths of these physicians worked in three cities (Quito, Guayaquil and Cuenca). There were also 1,300 dentists, 3,000 nurses, 12,000 auxiliary nurses, and approximately 1,800 private pharmacies.

The urban-rural differences are remarkable in that only 15% of doctors, 26% of dentists, 7% of nurses, and 13% of auxiliary nurses work in rural areas. Of special concern, only 11% of Ecuador's 391 obstetrical specialists work in rural areas.

Health Facilities and Eligible Population by
Provider Organization, Ecuador, 1983

(From World Bank Report)

Organization	Eligible Population ('000)	% of Population	Number of Hospitals	% Occupancy	Hospital Beds			Health Center Subcenters/ Dispensaries
					Number	%	Per 1,000 Population	
Ministry of Public Health (MOPH)	6,714.2	75.0	126	63.7	8,285	52.5	1.2	869 (c)
Social Security (IESS)	1,163.8	13.0	16	85.0	1,589	10.0	1.4	361 (d)
Charity Board of Guayaquil (JGB)	N/A	N/A	16	84.4	2,323	14.7	N/A	—
Ministry of Defense (FFAA)	223.8	2.5	12	--	750	4.7	3.3	—
Other Gov't (a)	—	—	2	—	86	0.5	—	—
Private Sector	850.5	9.5	202 (b)	—	2,789	17.6	3.3	—
Total	8,952.3	100.0	362	77.7	15,822	100.0	1.8	1,230

(a) Includes an Interior Ministry Hospital (50 beds) and a Municipio Hospital (36 beds).

(b) Includes SOLCA (2 hospitals with 70 beds), Child Protection Society (one 167-bed hospital), and investor-owned hospitals (199 with 2,552 beds).

(c) 53 urban health centers, 170 urban and 631 rural health subcenters, and 15 dispensaries (234 health posts are excluded).

(d) Includes 49 IESS/MS and 312 IESS/SSC dispensaries.

Source: MOPH

The following Table (1987) reveals the degree of "part-time" and "occasional" employment by physicians in Ecuador.

Entity	Doctors			
	Total	Full-Time	Part-Time	Occasional
Total Republic	9.901	3.533	4.805	1.563
Public Sector	6.957	2.747	3.934	276
Ministry of Health	3.263	1.930	1.163	170
Other Institutions	1.321	476	787	58
Social Security (IESS)	2.373	341	1.984	48
Private Sector	2.944	786	871	1.287

FUENTE: INEC: Anuario de Recursos y Actividades de Salud 1987

It should be noted that with respect to the private sector, the government has little authority over private hospitals and individual practitioners, and does not have a system for accrediting these private institutions or the physicians working in them. It should be further noted that the private sector is essentially urban-based.

USAID estimated in 1988 that there were "40 private-non-profit or perastatal institutions, including international PVOs, church and community organizations, and family planning affiliates, providing rural health services or information to approximately 700,000 beneficiaries. Furthermore, it has been estimated that there are as many 100,000 traditional healers, midwives, etc., in the country."

Traditional Medicine

An excellent discussion of traditional medicine appears in Reference #57 and is quoted here in its entirety. "In Ecuador, traditional healers are as diverse as the ethnic cultures that created them. The practice of traditional medicine (indigenous medicine, non-formal health care, popular medicine) varies from purely religious or magic interventions to use of therapeutic agents, (plant, animal and mineral products) and the manipulation of codes and symbols to alter disease states. It is part of century-old cultural patterns and is deeply rooted in the social structure of the rural and periurban communities. The immediate family constitutes the first level of care. If a medical problem cannot be resolved at that level, the patient will be referred to the scientific medicine sector or to the second level of traditional medicine made up by neighbors, relatives, the storekeeper, or the local pharmacist. The third level consists of the curandero (medicine man) and the partera (traditional midwife). The hierarchical structure of the curanderos is based on experience and knowledge; they are specialized according to their practices: generalists, spiritualists, specialists in herbal medicine or snake bites, etc. It is difficult to estimate the coverage provided by the non-formal sector. Anthropological surveys show that the sector may account for as many as 50% of first patient contacts in the country and that in some regions there is one curandero for every 70 inhabitants, thereby making it an important provider of health services. The role of healers, their relationship to the community, and the mode of payment vary widely. There is also large variation in the willingness of healers to collaborate with the modern health system. Traditional medicine as a form of primary care has attracted the interest of researchers and public health officials interested in the linkage between the modern and traditional systems. Experience in other countries with a sizeable traditional medicine system has shown the health and economic benefits from coordinating or integrating the two systems."

MINISTRY OF HEALTH

The Ministry of Public Health was established in 1967 by the Legislature. The MOH is organized along the lines of a traditional pyramidal structure (Figure 17) with three levels of attention; primary, secondary, and tertiary, with each level of attention divided into levels of complexity based on the type of facility providing care. In theory, patients are expected to enter at one of the lower levels (for example, the level of health post or health center) with referral, as necessary, to more complex levels. In fact, patients enter the system at all levels "according to their perceived needs, availability of transport, geographic proximity, and ability to pay for travel and lost time." Furthermore, referrals among levels are minimal.

Performance of the New Ministry of Health

One gets the impression that the new President's administration is committed to bringing about improvements in the health sector.

The current Minister, a personal friend of the President (although, significantly, not a member of the ruling party) is highly regarded for his vision, policies in preventive and rural health care, and his ability to work with donors. Under his leadership there is general agreement that sensible priorities have been established in the health sector. It is, however, the consensus of interested observers that some programs proposed from within the Ministry seem highly theoretical.

HEALTH PERSONNEL TRAINING

Physicians

Ecuador has seven medical schools (four state and three private). The number of annual graduates from medical schools has steadily increased from 600 in 1972 to approximately 1,300 in the late 1980's.

The World Bank Report in 1986 noted, "The annual increase of physicians cannot be absorbed by the major public health care providers - MOPH and IESS - for budgetary reasons, or by the private sector for lack of fee-paying clients. As a result, medical manpower in the cities is abundant, inexpensive, and health services have developed physician-intensive staffing patterns."

In mid-year 1989, the Minister of Health confirmed (personal communication) that, at a minimum, approximately 5,000 graduates of Ecuador's medical schools are unable to find employment as physicians.

The increases in enrollment have diminished the quality of medical education. Physician training programs also have been weakened because medical schools generally do not employ full-time physician clinical faculty. Programs within the medical schools suffer from internal politics. (At the Central University, the largest medical school, there is no streamlined system for receiving and disbursing grant monies. Indirect costs and misdirected grant monies are a significant problem.)

The Required Year of Rural Service Program

According to one report, Ecuador's rural system is more dependent on temporary personnel - recent graduates in rural service - than any other country in Latin America. Licensure is contingent on fulfilling the Rural Year. Very few of the 1,200 to 1,300 doctors who go out into rural areas each year (fewer graduate dentists and even fewer graduate nurses) really want to participate in this year of rural service. These young health care providers have little in the way of training to prepare them for the realities of practice in these remote sites. (They are often confronted with facilities which have been poorly maintained, find minimal equipment and almost no medical supplies and, in addition, face a population of a completely different racial and cultural composition than their own, for which they are totally unprepared.) There is no supervision whatsoever. A recent study on the part of the Ministry of Health revealed that 30% of rural doctors work only 150 days per year, and approximately 70% work 30 to 60 days per year. The Minister described the attitude of these young physicians as "Just

sitting around and waiting for patients to come to them. They don't go out to the schools, they have nothing at all to do with community work."

The required Year of Rural Service Program was in a state of flux at the time of the consultant's departure from Ecuador in June 1989. With much accompanying media publicity, a dramatic initiative in "Family Medicine" was announced. (See discussion of Plan Nacional.) This new initiative is "Family Medicine" in name only. In essence, doctors will get "two or three weeks" of training to perform as Family Physicians. In addition to the woefully inadequate level of training proposed, there appears to be no provision for supervision of these physicians once they get out in rural areas.

Dentists

The output of dentists from training programs is not sufficient to meet the dental needs of the population. Furthermore, there is a maldistribution of dentists with most dentists practicing in urban areas.

Medical Technologists

The demand for medical technologists is limited because of a lack of perceived need for their skills, and well-trained medical technologists are in short supply.

Nurses

There is an acute shortage of graduate nurses. Worldwide, it is generally assumed that nurses should outnumber physicians. In Ecuador, physician graduates outnumber nurse graduates by a considerable margin.

Auxiliary Nurses

The MOH has in the past had some degree of success in training auxiliary nurses (described as "the backbone of the Ecuadorian health care system") to compensate for the shortage of graduate nurses.

Indian Health Workers

Successful MOH- and NGO-supported programs of training indigenous auxiliaries and promoters have been carried out in Ecuador during the past ten years. In addition to improving the health of populations living in remote villages, the projects demonstrated that associations with a religious basis will include secular concerns among their interests.

Weaknesses of such programs include 1) lack of ongoing training; 2) lack of supervision of village health workers; and 3) inadequate funding.

A remarkable situation exists among the Shuar and Achuar of Morona - Santiago Province of Ecuador which, to the best of my knowledge, exists nowhere else in South or Central America. Nearly every village (including very small villages) has its own airstrip, and most airstrips have communication radios (many of which run on batteries which are solar charged, thus virtually eliminating the chance of failure of communication due to a weak battery). Furthermore, every village has a community-designated health educator, health promoter, or health auxiliary. Thus it is that in one of the most inaccessible regions on earth, the Amazon rain

forest, Indian health workers are able to report three times daily to a base station and request medical supplies, air ambulance service, or advice from a flight doctor who is on call at the base airstrip. Within minutes to an hour or two, aircraft with short take off and landing capabilities can be dispatched to any of 125 airstrips.

This system is made possible through community efforts in constructing and maintaining airstrips, the selection and sponsoring of training of designated health care providers, and the sophisticated infrastructure of Evangelical-Protestant and Catholic flying services. In the case of the Protestant operation, Alas de Socorro, reliable, uninterrupted service has been offered to Morona-Santiago and Pastaza Provinces for 41 years.

NATIONAL HEALTH PLAN

Ministry officials at all levels seem genuinely enthusiastic about changing the capability of the Ministry to be more responsive to the needs of the people of Ecuador, particularly the poor in the urban-marginal regions, the rural poor, and the large indigenous population. To effect needed changes, a NATIONAL HEALTH PLAN has been approved which, overall, addresses the major issues. A key component of the Health Plan is a focus on Primary Health Care. This focus is best illustrated by the Plan Nacional De Salud Familiar Integral Y Comunitaria.

Plan Nacional De Salud Familiar Integral Y Comunitaria

Limited resources require a higher priority be placed on preventive and primary care services as opposed to expensive, hospital-oriented care. Recognizing this, an ambitious plan has been formulated to reflect this appropriate reorientation in allocation of resources.

Critical Analysis of the Plan Nacional De Salud Familiar Integral Y Comunitaria:

The plan appears to be very much a Community Health model and not a true Family Health model and, in its present form, the Plan may be characterized as incredibly complex, unwieldy, and very expensive to implement. The Plan was described as "highly theoretical" by numerous individuals both inside and outside the Ministry. It is highly theoretical. Many noble sentiments are expressed but there appears to be very little in the document which concretely identifies strategies which will translate lofty goals into action given the current realities of economic/social conditions within Ecuador and the limited availability of well-trained manpower. The people in charge have a lot of ideas but no clear plan.

Much is made of training quality mid-level health care providers and physicians. The facts are that while Ecuador has in the past had excellent success in training auxiliaries and promoters in well-organized programs, at present the training program seems to have run out of steam and suffers from a lack of coordination and the will to carry out existing plans. Furthermore, it is difficult to imagine much improvement in the quality of physician graduates from the University programs given the (virtually) open admissions policy for medical schools and the relative lack of qualifying exams and norms.

As noted, the proposed Plan will be infinitely more complex and costly to operate than the current primary health care system, and one is at a loss to fathom how

the new plan will be realized when, by most accounts, the current program has floundered.

Especially disturbing is the belief by supporters of the Plan that motivated individuals of heightened social consciousness will somehow "do the right thing," even if their training for the job has been minimal, non-existent, or of low quality.

KEY RECOMMENDATIONS

Overview

Reviewing the problems confronting health planners in Ecuador, two themes emerge which seem relevant to most instances in which optimal conditions are not met:

1. Administrative Issues: Programs for administrative training need to be developed. An analysis of management weaknesses of the MOH concluded, "Frequent turnover of upper- and mid-level managers, lack of continuity, physician managers with little or no management training and lack of leadership, compound the deficiencies in the support systems. Financial, personal, procurement, and information systems are still highly centralized and bureaucratically unwieldy despite the process of decentralization which the MOH has begun and supports." (Reference #13)
2. Accountability: When one looks at a facility with an eye toward order, cleanliness, maintenance of equipment, availability of essential medicines and supplies, employee absenteeism, morale . . . one is left to wonder about the ongoing process of accountability. In fact, there appears to be virtually no enforcement of accountability throughout the sector. Whose job is it to report low stocks of essential medicines, supplies, etc? And whose job is in jeopardy if those supplies are not stocked when and where they are needed?

The following recommendations for improving the health sector grew naturally from the preceding Sector analysis. The basic problems with the health sector (where things clearly have broken down) are not limited to Ecuador, but are really the observed consequences of a faltering economy coupled with human foibles in a country whose population increase puts further strain on the already fragile infrastructure of services and health maintenance. All of these recommendations require action irrespective of Inter-American Development Bank participation.

General Considerations

If these problems are to be overcome, the following recommendations must be implemented:

1. Tie loans to performance. Given the past performance of the GOE and MOH, it is difficult to imagine any long-term benefit or success from investment or donations that does not take into account this recommendation or the one which immediately follows.
2. Insulate key administrative positions from the influence of politics. Make loans contingent upon protection of key positions from the spoils system. Use money to leverage policy.

3. Involve Indian Leaders - When working with indigenous groups, local Indian leaders need to be involved early in the planning stage. It is the consultant's opinion that the Indian village health workers' perspective on what should be done may be of more value than the perspective of a white or mestizo anthropologist who, though having considerable training, lacks the basic gut sense of understanding of Indian cultural issues. (The absence of indigenous viewpoints in the design and implementation of educational programs aimed at indigenous groups has been criticized in various NGO sector reports.)
4. Develop new epidemiologic tools to more effectively address sector needs in the light of limited resources.

It would seem relatively easy to project trends and map areas of anticipated expansion of poverty in cities and perhaps in rural areas. This investigation could be carried out through an epidemiologic model. For example, as many as several hundred colonists from the Province of Loja who have settled in the Province of Pinchincha are thought to have leishmania. One could study the effects on health of colonization projects. What diseases are involved? What are the vectors? What are the projected health consequences? Other maps might be drawn, for example, to correlate the location of IEOS rural water systems with decreased infant mortality.

The Division of Epidemiology often adheres to outmoded epidemiologic practices, and the current MOH information system seems to provide statistics to the central level more for historical and documentary, rather than decision-making purposes (Reference #13). An assessment will be undertaken during 1989, supported by PAHO and USAID, to identify information needs.

Furthermore, meaningful conclusions based on existing epidemiologic data are problematic for these reasons:

- A. Scarcity of information. While numerous reports, both governmental and non-governmental, national and international, present much useful data on a nationwide basis, information at the cantonal level (which, if available, would reflect geographic and ethno-cultural differences) is often lacking. Even though Indians make up a sizeable percentage of the Ecuadorian population, data for comparing Indian populations with the white, mestizo, or black population, is virtually non-existent.
- B. Reliability. It soon becomes apparent to anyone who reviews statistical data for Ecuador (especially if the reviewer has insight into the socio-political leanings of the author of the data) that there is much built-in bias of data. A political agenda is often justified by massaging statistics to suit the author's purpose.

The Centers for Disease Control in Atlanta, Georgia, world renowned for its Global Epidemiologic Intelligence Service, has for several years supported the training of epidemiologists. It strongly believes this is the single most vital step in making the health sector in poorer nations responsive to health planning in the context of limited resources. The

director of the program, a physician with many years of experience around the world, feels epidemiology training breaks up stratified bureaucracy.

CDC currently operates a regional epidemiology training program in Peru. Neighboring countries are invited to participate. CDC also runs short term courses in Atlanta each summer for participants from around the world.

5. Capitalize on the ties with USAID. USAID is a major donor in the sector. For example, activities involving Infant/Child Survival in Ecuador necessarily involve AID at all levels. USAID has the staff and contacts in Ecuador and is eager to work with the Inter American Development Bank.
6. Maintain close contact with the World Bank with respect to its 1989 sector review. The consultant was given indications by the World Bank Senior Project Officer that its focus will likely be in urban and urban-marginal areas. (Areas of high density, "visible," voting populations.) An Inter-American Development Bank focus on rural and indigenous populations would complement the World Bank effort.
7. Increase doctors' wages. This is essential.
8. IEOS, the Sanitary Works Institute, is a high political organization which functions less efficiently in the urban setting and more efficiently in the rural areas. Therefore, in dealing with water and sanitation, avoid working with IEOS in the urban setting. Despite its recent successes in rural areas, work with IEOS should be undertaken with caution even in these areas. Non-IEOS options (including private sector options) should be explored in coastal regions.
9. Ecuador will continue to rely heavily on the services of NGO's. There should be further integration of the MOH and NGO's. The Bank should work with NGO's when possible.
10. Involve the Private Sector, but expect collaboration between private and public doctors to be difficult. Any effort in this direction should start in Guayaquil, which is the only city identified where there is interest in such collaboration.
11. IESS, the Ecuadorian Social Security Institute, is considered by many to have a more reliable budget than MOH. IESS/SSC (Rural Social Security Directorate of IESS), expanded its operations in 1989 and further increased its positive impact on health care. With several hundred rural dispensaries, IESS/SSC is a promising avenue to explore in preventive services.

Look at expanded IESS coverage as a source of financing health care.

12. Avoid two activities also being discouraged by the Ministry of Health:
 - A. Expansion of a hospital (as opposed to Ambulatory Care Facilities) building program. Two highly placed Ministry officials stated "We are saturated with hospitals." (In view of the 50% occupancy rate in some hospitals, further expansion of hospital construction would seem ill-advised in any event, especially if limited funds are to be channeled into preventive services and into training primary care providers.)

B. Programs geared toward unnecessary study and analysis.

RECOMMENDATIONS FOR INVESTMENT

I. Projects that require immediate action.

A. National Inventory.

A national inventory should get underway immediately, before any meaningful Project can proceed. Given adequate funding, units exist within the Ministry of Health at present to carry out adequately a national survey.

1. Identify human resources.
2. Identify and map the location of all health facilities (private and public) within the country.
3. Describe each health facility with respect to square feet of space and floor plan.
4. Assess the condition of each building.
5. Inventory contents (in terms of equipment and supplies).

B. Vector-Borne Disease Control Program.

The provision of funds for a technical cooperation project to prepare a comprehensive vector-borne disease control program. (There is a need for a donor source of immediate assistance in the control of malaria and dengue. The Ministry needs money to hire field personnel and purchase supplies more than it needs analysis at the moment in the control of these two mosquito-borne diseases.)

C. Formation of a project team.

The idea is to create an atmosphere in which projects can be successfully developed and carried out.

In briefing sessions the consultant had with representatives of Inter-American Development Bank, PAHO, World Bank, UNICEF, USAID, and the Ecuadorian Ministry of Health, it became apparent that various project initiatives are underway in Ecuador by a variety of agencies with the resultant potential for duplication of effort or the risk that one or another major thrust might be ignored altogether through lack of coordination. There is an urgent need for the formation of a Coordinating Unit to function as gatekeeper.

Given the long-standing and well-documented weaknesses of the MOH in terms of administration and the ability to design a project, the formation and training of a Project Team would seem, for the moment, a higher priority than the actual design of the project. For a modest amount of money, the Inter-American Development Bank can occupy office space within the Ministry of Health, hire two professionals, two assistants, and consultants. (Due to current institutional weaknesses, consultants, both Ecuadorian and foreign,

will be required throughout the project in systems design and supervision.)

II. Projects that may be developed over five years.

A. An integrated project or sector loan which would incorporate the following components:

1. Restructurizing the MOH, decentralizing its activities, and supporting institutional strengthening of the most vital administrative subsystems.

Decentralization. One message stands out in previous Sector analyses by World Bank, USAID and PAHO . . . Bypass MOH bureaucracy when possible.

Until the bureaucracy of MOH can be streamlined to function more efficiently, it is recommended that a regionalization approach be used to direct money to the provincial level. Find ways to bypass the upper level of MOH, and direct money to the operational level.

Training of Key Administrators and Managers. Administration and management training should be made available. This need is urgent.

The first step in helping the MOH move forward would be to change the current state of disorganization and administrative chaos. (The Minister described the present situation in these terms: "My Ministry is like dozens of separate nations, each functioning totally independently. There is virtually no communication within this Ministry between one branch or a unit and another.")

Cost Recovery. It should be noted that a redirection by the MOH toward primary health care (with special attention to prevention and ambulatory care services) and away from high cost hospital and subspecialty care will, in the long run, vastly improve the overall health picture in Ecuador and substantially lower the cost of health care services.

There is a heightened interest by GOE, MOH and USAID in cost recovery at this time, including privatization schemes. All avenues of cost recovery should be explored.

Cost recovery in the for-profit subsector is virtually 100%; in the social security subsector cost sharing could be applied to contain utilization of selected services and procedures; in the segment of the rural, poor, and medically indigent, a needs-based user-fee policy could be instituted. Those who can afford to pay should be encouraged to shift to the private sector (References #13, #57).

Because of political fallout in Ecuador from a direct tax on health care, a "Fondo Apoyo" in every city or a hospital

"cobro" could be instituted. Ultimately, a change in the national law to charge for services must be considered.

Expanded IESS coverage, as previously noted, may be worthwhile pursuing as a source of financing health care.

2. Strengthening priority health issues.

It is essential to maintain close contact with USAID in any project designed to strengthen priority health issues such as maternal and child health and communicable disease control.

3. The reorganization of a national network of Ambulatory Care Services.

Pondering the dismal condition of many of the 15 to 25 bed rural "hospitals" scattered around the country, one may question the utility of these facilities in that they are almost universally under-funded, understaffed, poorly equipped, and more often than not, lacking in essential medicines and supplies. The quality of inpatient care is usually suboptimal in this setting.

A decision should be made whether to keep open, close, or convert existing rural hospitals to ambulatory care facilities (or maternal-infant health focused facilities), and needs assessment should be undertaken for appropriate rehabilitation and resupply to bring facilities up to standards.

Perform needs assessment for new construction. Focus on strictly ambulatory care facilities.

4. Training Programs.

Change the curriculum of health provider training programs throughout the nation to reflect true needs and economic realities. Specifically, there should be an emphasis on the training of auxiliary health workers and a reorientation of medical school curriculum to have as the highest priority the training of family physicians in two to three year residency programs.

Train Auxiliary/Promoter Health Workers. It has been shown time after time in poor nations and in poor regions of rich nations that adequate health care may be rendered by persons other than physicians. Well-trained mid-level practitioners and auxiliary health workers are fully capable of handling most common illnesses. The GOE should revive previously successful auxiliary/promoter training programs as the best way to ensure the presence of qualified health care providers in the rural regions and among the Amerindian populations.

The norms and outlines for such programs exist. What is largely missing at this time is the money to carry out such

training programs and a method of ensuring ongoing supervision of those village health workers.

There should be a focus on health care problems and Project Development in Indian populations. Preventive health projects with lowland Indian groups have a high potential for success due to the fact that Indian culture is community oriented. The Village Health Worker concept has met with remarkable success in jungle-dwelling Indian populations throughout Ecuador, particularly among the Shuar and Achuar of Morona-Santiago Province where a series of happy circumstances have produced what may be one of the most successful Health Promotor/Health Auxiliary programs in Ecuador.

Using the Shuar model the GOE/MOH should take the following steps to further strengthen the Shuar system and initiate new programs throughout the many areas of Ecuador populated by Amerindians:

Enroll Indians in quality Village Health Worker training programs and continue their training with regularly scheduled "refresher" courses.

Initiate a program of monthly visits to villages by physicians or nursing supervisors to assure that Village Health Workers are following guidelines and to encourage the workers and prevent burn out.

Ensure a reliable supply of essential medicines including Oral Rehydration Salts. Keeping the health posts well supplied will go a long way to ensure the confidence of the population served and keep up morale among the health workers.

Train more primary care physicians. The GOE, MOH, and Ecuadorian Medical Schools must reassess the type, quality, and quantity of physicians currently graduating from Ecuador's training programs. There is no logical option, given the economic constraints faced by the GOE, to train more primary care physicians and few subspecialists.

The MOH is on the right track in calling attention in the National Health Plan to the urgent need for an expanded role by primary care doctors in the delivery of health care in the urban-marginal and rural areas. I would make one major recommendation in this area, namely, that appropriate planners give serious consideration to a reorientation in the training program to develop an outstanding Ecuadorian FAMILY PRACTICE model of primary health care. (See the Medical Specialty of Family Practice at the end of the report.)

B. Vector-borne disease control program

This program should include all the necessary components to replace the short- and mid-term activities and investments of I.B.

There should be a focus on control, not eradication. The big problem is how to make malaria control sustainable. (It is of interest that in Puerto Rico the Rotary Club proved to be the single most important component of mosquito control. Reference #1).

Salaries should be increased at SNEM. Wages, already low in MOH, are even lower at SNEM. There has not been a review of pay systems in SNEM in years.

FIELD EXPERIENCE: ESMERALDAS PROVINCE

"The Province of Esmeraldas, in the northwest of Ecuador adjoining Colombia, has a population of some 249,000 (1985), 52% rural and 48% urban. In terms of social indicators, the Province ranks well below the national average, with high rates of malnutrition, illiteracy and infant mortality, and suffering from a lack of potable water supply, sanitation facilities and basic education" (Reference #20). Over 80% of the population is black. Two indigenous groups, the Chachi and the Awa, together numbering no more than a few thousand individuals, inhabit the northern most portion of Esmeraldas, one of the wettest regions on earth.

The consultant, who has traveled extensively throughout the Province since 1968, thought it would be useful to simply note conditions as they exist in May 1989. My visit followed by a few days the strike of all doctors in their "year of rural medicine" in Esmeraldas Province. The doctors went on strike to protest a lack of medicines and supplies, failure to receive salaries for several pay periods and general frustration with the health system.

It should be appreciated when reading the following comments that cantonal hospitals were at one time reasonably well equipped and stocked.

Limones

Centro de Salud/Hospital (Hospital Cantonal). Twenty bed. Dr. Exon Briones, Director.

Limones, described as "the mosquito and rat capital of Ecuador" (South American Handbook, 1989) is largely a saw-mill town located on an island in the mouth of the Rio Cayapa-Santiago.

Hospital grounds and building: A fence surrounds the hospital. The design and construction of the building are adequate. Screens are absent from all windows. Window panes are missing throughout the hospital. There are eight toilets of which only one works. There are two showers, neither of which work. Pure drinking water is not available, so all water must be boiled.

Equipment: The x-ray machine has not worked in eight years. The autoclave does not work. There is no scale for weighing infants. The delivery table and surgery table are ancient. The surgical table was covered with a rotted pad which turned to powder when lifted for examination. The ophthalmoscope and otoscope were inoperative.

Supplies: Oral rehydration (UNICEF), ampicillin, penicillin, chloroquine, aldomet, catapres, Lasix, mebendazole, and sulpha ointment are stocked in small quantities. Primaquine, Fansidar, spectinomycin, metronidazole, and glucantime were not in stock. A few bottles of xylocaine were found; these were outdated in 1980. Suture material was not stocked.

Doctor Briones has been director for three months. During that time, primaquine and Fansidar have not been available. According to hospital records, during the month of April at least eight persons were treated on an emergency basis and hospitalized with life-threatening cerebral malaria, and one case of dengue was recorded. (I suspect there were many more cases of malaria treated because in the village of Borbon, just a few miles away, five cases of cerebral malaria were observed in hospital the day after I visited Limones.)

Despite the fact that approximately 15 cases of leishmaniasis have come to the attention of the director, he has not had any glucantime to treat this condition. (The director believes there may be several hundred cases of leishmaniasis in the San Lorenzo, Limones, Borbon area.)

Borbon

Cantonal Hospital. Dr. Saul Lopez, Director. Dr. Lopez has worked at Borbon for five years.

Hospital grounds and building: The hospital is located on a low hill overlooking the riverside village of Borbon. There is no fence around the hospital compound. The building itself is reasonably well constructed although it needs some minor repairs. The windows lack screens. The walls inside and out could stand a coat of paint.

Equipment: A new microscope was recently donated to the clinic. No X-ray or EKG capability. No centrifuge. No pipettes. No capability of performing urinalysis or glucose testing. No stain for making malaria smears.

Supplies: On hand were small amounts of chloroquine, ampicillin, penicillin, tetracycline, Dilantin, a few bottles of xylocaine, and a few bottles of dextrose solution (at times IV solution is out of stock). The hospital was out of oral quinine, primaquine, IV quinine, glucantime, and IV infusion sets. The hospital has been out of oral rehydration packets for six months.

During the consultants visit to the hospital in Borbon, five children were in hospital with cerebral malaria. Two of the children were nearly fully recovered thanks to the availability of a small amount of IV quinine which had been given a few days earlier. Three children were, however, comatose having been admitted after the supplies of parenteral anti-malarials were exhausted. Two of the three appeared very near death.

According to the director, a MOH team has not visited the hospital in five years to see what medicines were on hand. Theft of items, large and small, is a major problem at the hospital.

Esmeraldas

Hospital Delfina Torres de Concha.

I arrived on a Saturday and was unable to meet with the director although I did meet with two physicians and a health worker who seemed knowledgeable.

Hospital grounds and building: This is a large hospital which serves a city of approximately 125,000. (The drawing area is potentially 200,000.) The grounds were well maintained, and from the outside the hospital was clean and impressive looking. Inside, however, the walls were unpainted and unwashed with little evidence of any effort to maintain cleanliness.

I was told that the hospital laboratory has the capability of performing hematocrit, hemoglobin, manual white and red blood counts, and perhaps enzyme levels. Electrolyte studies cannot be performed. The EKG was inoperative. The X-ray machine reportedly does not work.

In the emergency room there was no Ambu bag. I notice that patients in the emergency room were lying on bare mattresses. The nurse responded, "Oh, that's because all the sheets have been stolen."

In this large provincial hospital, the patient must go into town to buy suture material for repairing lacerations. I was told that patients scheduled for surgery are expected to buy suture material, gloves, gowns, and anesthetic prior to surgery.

San Lorenzo

Seventy bed MOH Hospital. Dr. Aurelio Fuentes, Director.

Approached from the sea by passing through a myriad of channels coursing through the great Mangrove Swamp which fronts on the Bahia Ancon de Sardinas, San Lorenzo is a town of approximately 13,000 and terminus of the ill-starred northern, Sierra Coastal Railway. It is in this unlikely setting that one finds what may be the best hospital in all of Esmeraldas Province.

Dr. Aurelio Fuentes, whom I first met in 1969, has been with the hospital for 33 years. His hospital has an 80% occupancy rate, high for Ecuadorian hospitals. Dr. Fuentes stated, "Other than salaries, we have no economic problems at this hospital." He attributes this happy state of affairs and the plentiful stocks of medicines and supplies to the association that the hospital has with an order of Italian nuns operating out of the City of Esmeraldas.

Dr. Fuentes' main concerns are these:

1. Personnel: There are not enough doctors to adequately staff the hospital. He needs administrative help. He has a reasonably well equipped lab which, unfortunately, suffers from the lack of a lab technician. (The nun who ran the lab was recently moved to another location.) There is no X-ray technician. None of the auxiliary nurses has a diploma. There is no EKG machine.
2. The volume of patients is at times overwhelming. Patients come not only from San Lorenzo but also from Borbon, Limones, and even the City of Esmeraldas. Patients often make the one- to two-day trip to San Lorenzo from Esmeraldas because all treatment is free at the hospital in San Lorenzo (unlike the situation at the hospital in Esmeraldas), and Dr. Fuentes is himself acknowledged to be an excellent surgeon and patients are eager to be under his care.

FIELD EXPERIENCE: BOLIVAR PROVINCE

The Province of Bolivar, in the western cordillera near the highest volcano in Ecuador, Chimborazo, has a mostly Quechua speaking population, and in terms of social indicators, the Province ranks below the national average with high rates of malnutrition, illiteracy, and infant mortality. The Province is almost exclusively agricultural and has about it an air of relative isolation. There is a high rate of out-migration. (Estimated 1987 population 166,000 down from 171,000 in 1982.)

In March 1989, the National Division of Community Development, under the direction of Dr. Jose Castro Luna, published a report on the status (at the end of the second project year) of primary health care services in this poor highland province, with the aim of demonstrating the positive results which could be achieved through a properly designed, supervised, and maintained primary health care system, which relied heavily on indigenous auxiliary health workers. The consultant visited Bolivar Province in June 1989 at the recommendation of Dr. Castro.

San Miguel

The Town of San Miguel, a Cantonal seat, is situated a few miles south of the provincial capital of Guaranda and is reached by a short drive over a good road through mountainous countryside.

Dr. Villareal, the contact person in San Miguel, works at the Cantonal Hospital and sees patients in his modest, but clean, office situated across from the park in the center of town. Dr. Villareal stated that he had had three months of training as an administrator and that, overall, he felt reasonably optimistic that things were going well in his area. He indicated that close to 100% of children had received vaccination with BCG and approximately 80% had received vaccination with DPT, measles and polio. He noted that in the Town of San Miguel there was adequate and safe water and an acceptable sewage disposal system. Dr. Villareal outlined the basic breakdown of the Province of Bolivar into five "areas" and each area having a further breakdown into "operative units" (Figures 18, 19, 20). In essence, the Provincial Hospital of Guaranda oversees the Centro De Salud of Guaranda, the Cantonal Hospital of San Miguel, the Cantonal Hospital at Chillanes, the Subcenter of Echeandia, and the health center of Chimbo. Each of these hospitals, centers of health, or subcenters is in turn responsible for oversight of smaller units. For example, the Cantonal Hospital of San Miguel oversees several smaller towns, such as Santiago, where there may be a physician or auxiliary nurse. The physician or auxiliary nurse in turn supervises promoters in Puestos De Salud in remote indigenous villages.

Santiago

Dr. Hurtado, the female physician in Santiago, was out of town attending a conference at the time of my visit. I was, nonetheless, able to tour the newly constructed Health Subcenter, which is situated on a hill overlooking the town. The facility appeared adequate in design and size considering the small population of the community. Equipment and supplies were expected to be unpacked and installed within a few weeks.

Village T.

A winding dirt road leads from the town of Santiago to the Quechua village of T. situated high on a windswept ridge. I was warmly welcomed by the village "Presidente" who acted as my guide as we ascended further up the narrow road into the clouds where we met up with the village health promotor, Mr. C.

Mr. C. is a bright, young man who provided the following information: He stated that he had been a health promotor for approximately eight years. He commented that in the early 1980's during the initial training of health promoters in the area, there were slides, films, and other educational tools, but that in recent years this sort of ongoing educational activity had fallen by the wayside. He said there had been little if any supervision or ongoing training in the past three years since a missionary working with indigenous groups, Martha Kramer, had moved to another Canton in Bolivar Province. He attributed the infrequency of visits to his village by a supervisor from the MOH to a lack of money and the unavailability of a MOH car. He noted that he was out of Oral Rehydration Salts. He also noted that the Ministry of Health does not relate well with indigenous peoples. He commented, "The Ministry of Health has lied to people so much that my people don't trust them anymore. The community has lost faith in the Ministry of Health." He confirmed that approximately 100% of individuals have been vaccinated with BCG, and a very high percentage have been vaccinated with DPT, polio, and measles.

He commented on the many latrines which were used in the community which were constructed in the early 1980's with assistance from IEOS. He said there was a water system in the village but, unfortunately, they had been out of chlorine for approximately three years.

Mr. C. felt that indigenous promoters in his region of Ecuador would benefit from the following:

1. Training on "how to communicate with the community."
2. Training courses in health related issues and money to help provide transportation to courses in San Miguel and Guaranda.
3. Regularly scheduled visits from MOH nurses and physicians for purposes of supervision.
4. Better understanding on the part of the white and mestizo community on the nature and needs of the Indian communities.

Summary of Field Visit to Bolivar Province:

While there appears to be some discrepancy between the success of the Project as outlined in Quito and in San Miguel and what actually is happening in remote villages, it is the consultant's opinion that, especially with respect to towns and cities, there is a fairly substantial system of primary health care delivery in Bolivar Province. The Project Plan as set forth by the National Division of Community Development under Dr. Castro is a good one. Overall, the activities of the National Division of Community Development led to positive results in terms of coordination, administration and regionalization. To achieve maximal results, the following items should receive serious attention: 1) ongoing training of nurse auxiliaries and health promoters; 2) ongoing supervision,

especially supervision of promoters in remote indigenous villages; 3) funds to carry out the various components of the plan.

THE MEDICAL SPECIALTY OF FAMILY PRACTICE

A few words on the medical specialty of Family Practice as it is commonly understood in Mexico, Venezuela, Argentina, Australia, the United Kingdom and North America: First, Family Practice is not General Practice. Family Practice differs from General Practice in several dimensions: the quality and duration of training of its graduates (generally a three-year residency program, or occasionally a two-year program, after graduation from medical school), and the breadth of training and skills which set Family Practice apart from the other primary care specialties (General Internal Medicine, General Pediatrics, Obstetrics). Worldwide it has been shown that appropriately trained Family Physicians (FP's) can manage nearly 95% of all patients seen.

A strong point in favor of training FP's for a new Plan Nacional de Salud Familiar Integral Y Comunitaria is that an FP can effectively fill all the health care needs which would otherwise require two or more physicians. (Well-trained FP's are able to provide an identical level of quality of care as the General Internist and General Pediatrician. Depending on the program of training, FP's often are capable of providing quality Obstetrical care for the non-high-risk obstetrical patient.)

There are, at most, only four residency-trained FP's in Ecuador. It is therefore not surprising that individuals within the Ministry and even the chiefs of major international agencies concerned with health issues, lack a clear understanding of what a Family Physician really is and the potential role for the FP in Ecuador. Thus the terms "Family Practice" and "Integrated/Whole Family Health" are bandied about without a precise understanding of the true concept of Family Practice.

Role models are needed in Family Medicine. A fledgling effort to train FP's is under way at Voz Andes Hospital in Quito with a North American trained, board certified Family Physician in charge and two highly capable Ecuadorian FP's who were trained in Mexico providing able assistance. The first Association of Family Medicine has been formed and recognized as an official entity within Ecuador. Needed at this point are capable teachers of Family Medicine to begin teaching at the Central University in Quito and the Catholic University in Cuenca, both of which have expressed interest in this concept. It is my understanding that Family Practice physicians from Colombia, Argentina, and Venezuela would be eager to help in the initial process of setting up Family Practice training programs in Ecuador. The American Academy of Family Practice (the A.A.F.P. is the world's largest association of Family Physicians) has assured the consultant that it would strongly support efforts to develop an Ecuadorian model of FP training. A program could be established for training a few Ecuadorian residents in the United States in residency programs chosen for demonstrated excellence. A Program known as IMSP (International Medical Scholars Program) allows foreign residents to take part in all aspects of training in the United States but prohibits licensure in the USA of foreign participants, thus ensuring their ultimate return to practice in their country of origin. Whatever the program, the goal would be that physicians trained outside Ecuador would return and become teachers of Family Medicine in training programs within Ecuador.

Consultants from various organizations could be crucial in initiating a plan for a Family Practice Program in Ecuador:

1. The International Center for Family Medicine in Buenos Aires, headed by Dr. Julio Ceitlin.
2. A RAP (Residency Assistance Program) consult from the AAFP. In terms of vast experience and expertise in the North American model of Family Practice, the AAFP/RAP approach offers great promise.
3. Spanish-speaking consultants from select North American Family Practice programs who would be willing to spend 6-12 months on sabbatical in Ecuador.

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- *24. Health Population Nutrition Strategic Framework. U.S.A.I.D. (This was given to me by Bill Goldman, Chief, Health Division, U.S.A.I.D./Ecuador.)
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26. Informe De Actividades Cumplidas En El Proyecto De Atencion Primaria De Salud En Bolivar Y Los Rios. 1988. Convenio MSP-FODERUMA-CARE. Dr. Jose Castro Luna. Dr. Jose Avecillas. March 1989. (Criteria of Regionaliza-

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38. Manual De Procedimientos De Abastecimientos Para Las Direcciones Porvincipales De Salud. May 1989.
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- *44. Mid-term Evaluation of the Child Survival Project (PREMI) in Ecuador. Report Prepared for U.S.A.I.D./Quito. Pretech. July and August 1988. Jaime Benaventes. (Critical, blunt evaluation of the PREMI Project in Ecuador. "Midterm" evaluation proved to be the "final" evaluation.)
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62. La Situacion de la Salud en el Ecuador. 1962-1985. M.S.P. PAHO. ININMS, OMS.
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67. Technical Advisor and Child Survival (T.A.C.S.) for Policy. U.S.A.I.D. Discusses responsibilities of T.A.C.S. incumbent. (Given to me by Bill Goldman, Chief, Health Section, U.S.A.I.D./Ecuador. Draft for internal use only.)
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COMERCIO EXTERIOR DE BIENES Y SERVICIOS (1) EN MILLONES DE DOLARES

ECUADOR 1984 A 1987

(Perfil Del Ecuador. P.A.H.O.)

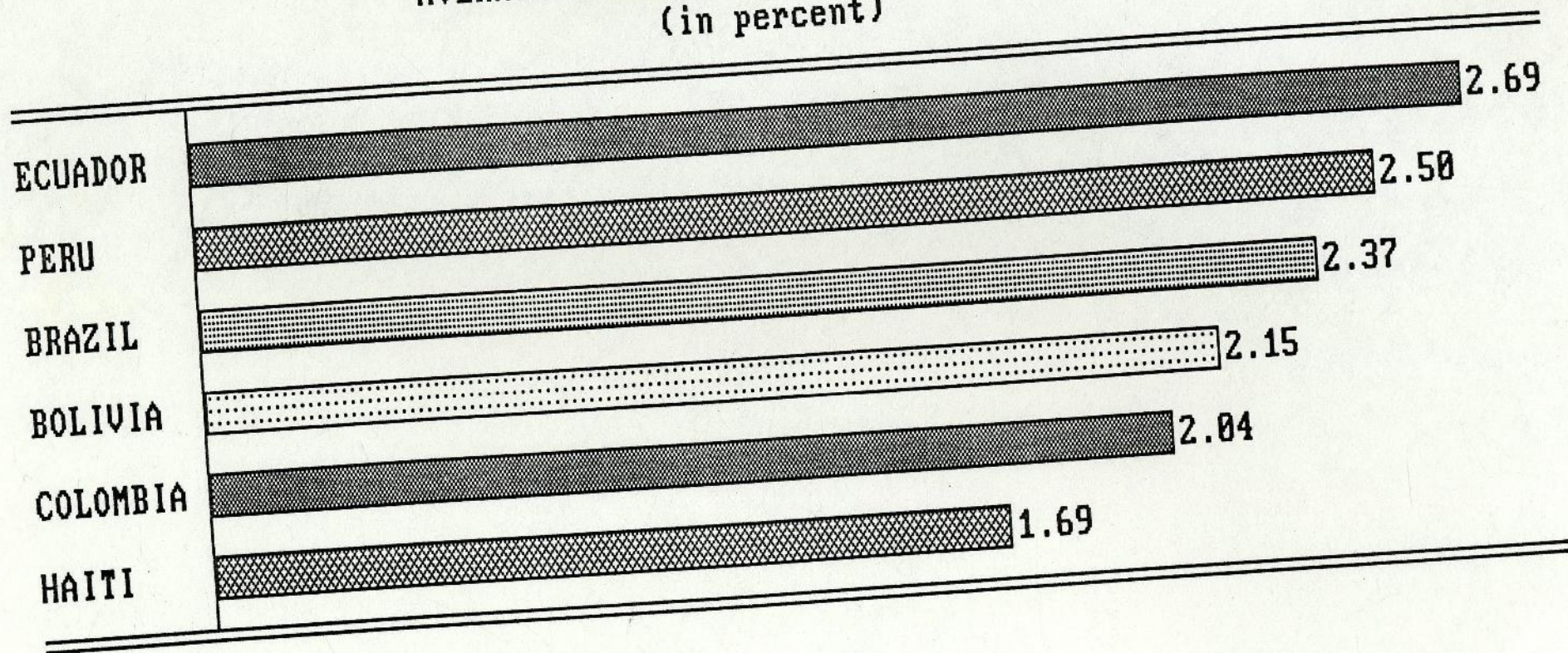
COMERCIO EXTERIOR DE BIENES Y SERVICIOS	1984	1985	1986	1987	% CRECIMIENTO ANUAL ACUMUL.
SALDO	- 268	46	- 687	- 1.277	68,27465
EXPORTACIONES TOTALES	2.972	3.327	2.617	2.492	- 5,702527
IMPORTACIONES TOTALES	3.240	3.281	3.304	3.769	5,17044
EXPORTACIONES DE BIENES	2.622	2.905	2.186	2.057	- 7,771064
Petróleo y derivados	1.835	1.927	982	830	- 23,227814
Café en grano	175	191	299	190	2,77219
Cacao en grano y elaborado	146	217	148	139	- 1,624421
Banano y plátano	136	220	263	266	25,05879
Productos del mar	231	266	388	479	27,51888
Otros	99	84	106	153	15,61621
IMPORTACIONES DE BIENES	1.567	1.611	1.631	2.122	10,6342
Bienes de consumo	306	223	219	331	2,65234
Combustibles y lubricantes	144	158	82	349	34,32421
Materias primas y bienes intermed.	745	763	727	788	1,88806
Bienes de capital y equipos de transporte	372	467	603	654	20,62124
BALANZA COMERCIAL DE BIENES	1.055	1.294	555	- 65	
OTRAS TRANSACCIONES EXTERNAS	- 1.323	- 1.248	- 1.242	- 1.212	2,878749

(1) Servicios incluye: fletes, otros gastos de transporte, viajes, seguros, renta de inversiones y otros.

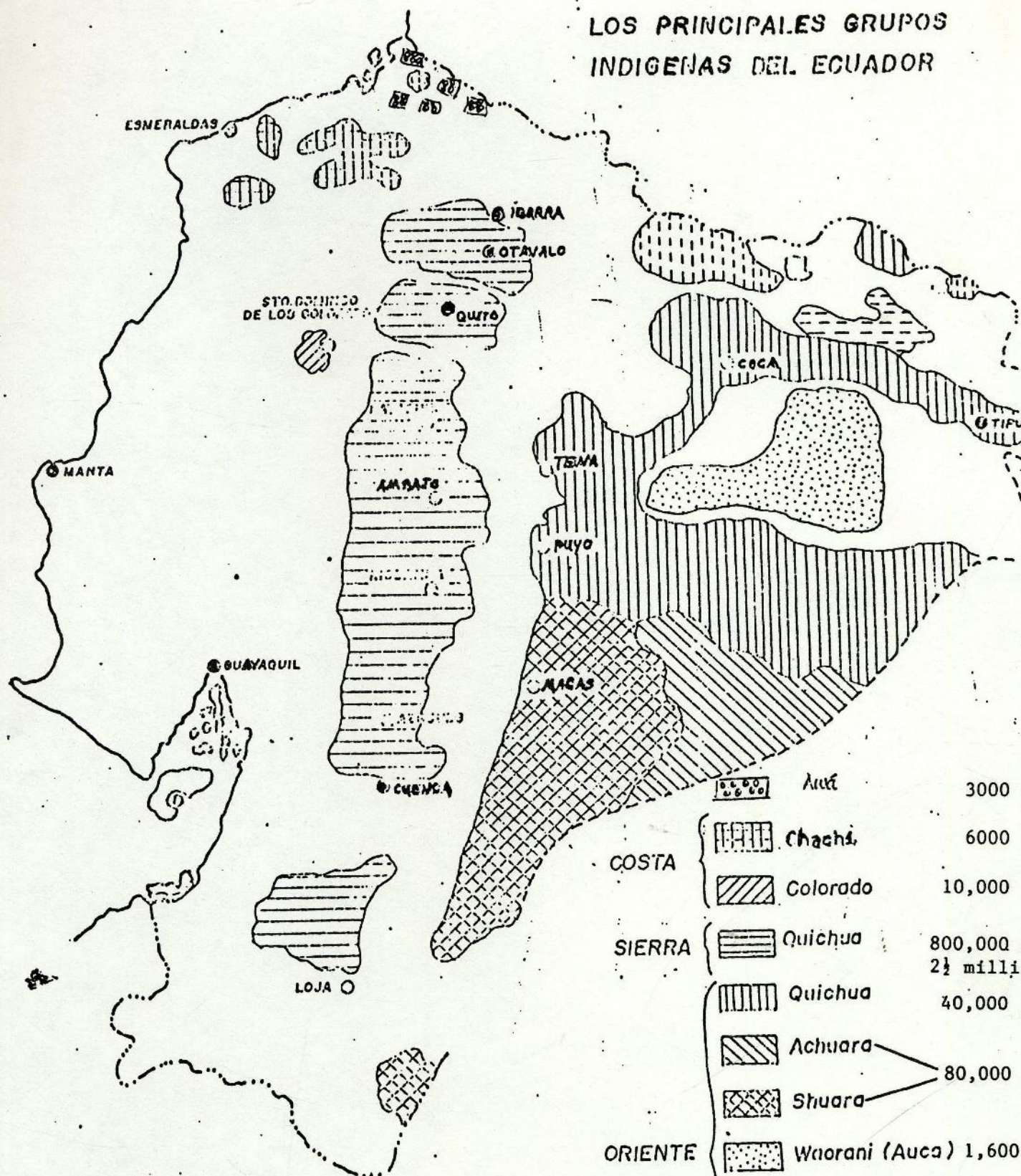
FUENTE: Ecuador. Indicadores Sociales y Económicos. CONADE. Junio de 1988

ELABORACION: Grupo de Trabajo de la PWR. Ecuador

AVERAGE ANNUAL POPULATION GROWTH RATE
(in percent)



LOS PRINCIPALES GRUPOS INDIGENAS DEL ECUADOR



FUENTES "MAPA ETHICO DEL ECUADOR" PERDON 1917

"MAPA ETHICO DEL ECUADOR" IV 1917

INSTITUTO NAL. DE ESTADISTICA Y CENSOS

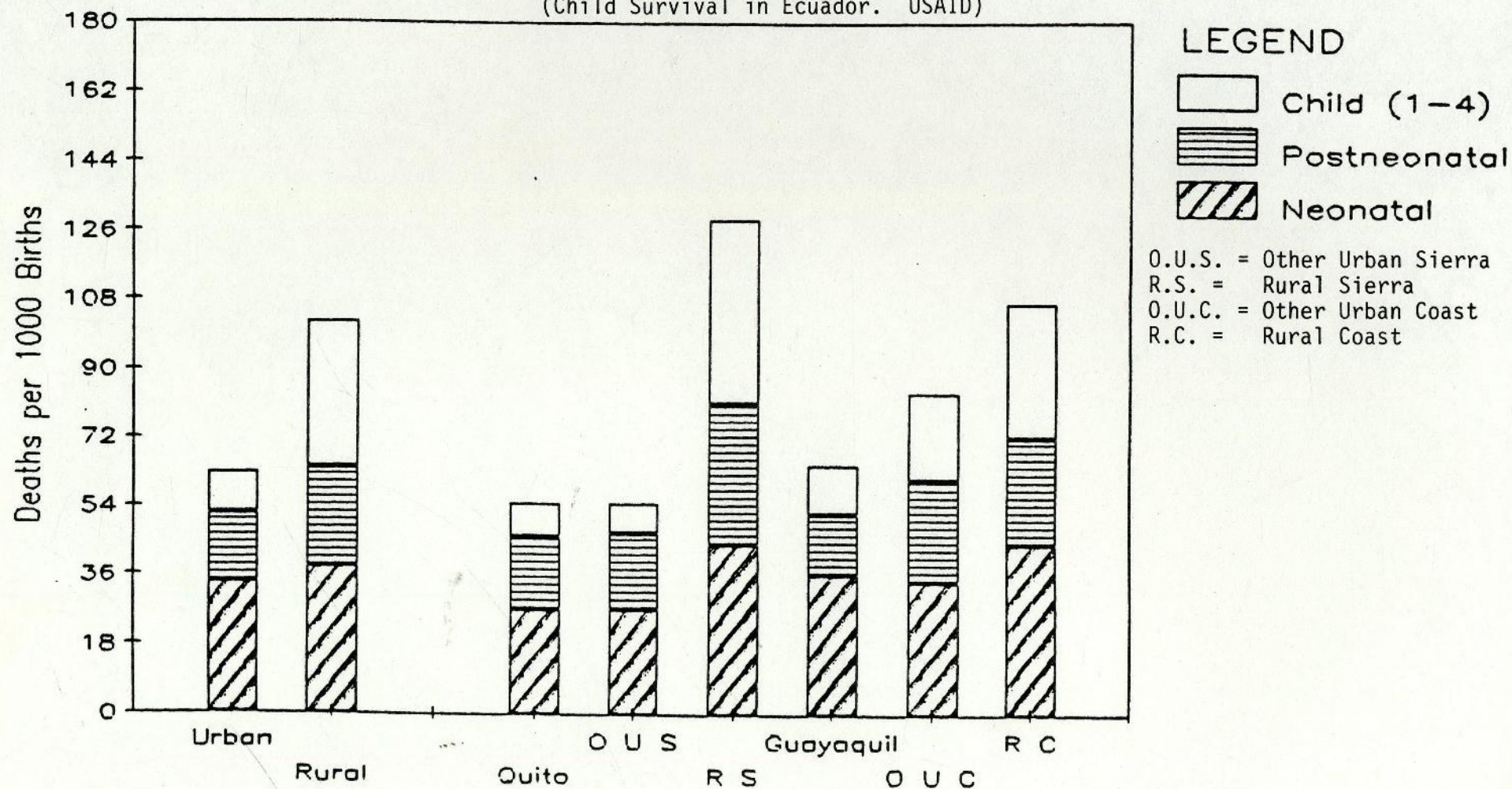
Lowland Indian Population approximately 100,000 - 150,000

Highland Indian Population approximately 800,000 - 2½ million

Urban—Rural and Regional Differences In Infant and Child Mortality

ENDESA, 1982–86

(Child Survival in Ecuador. USAID)

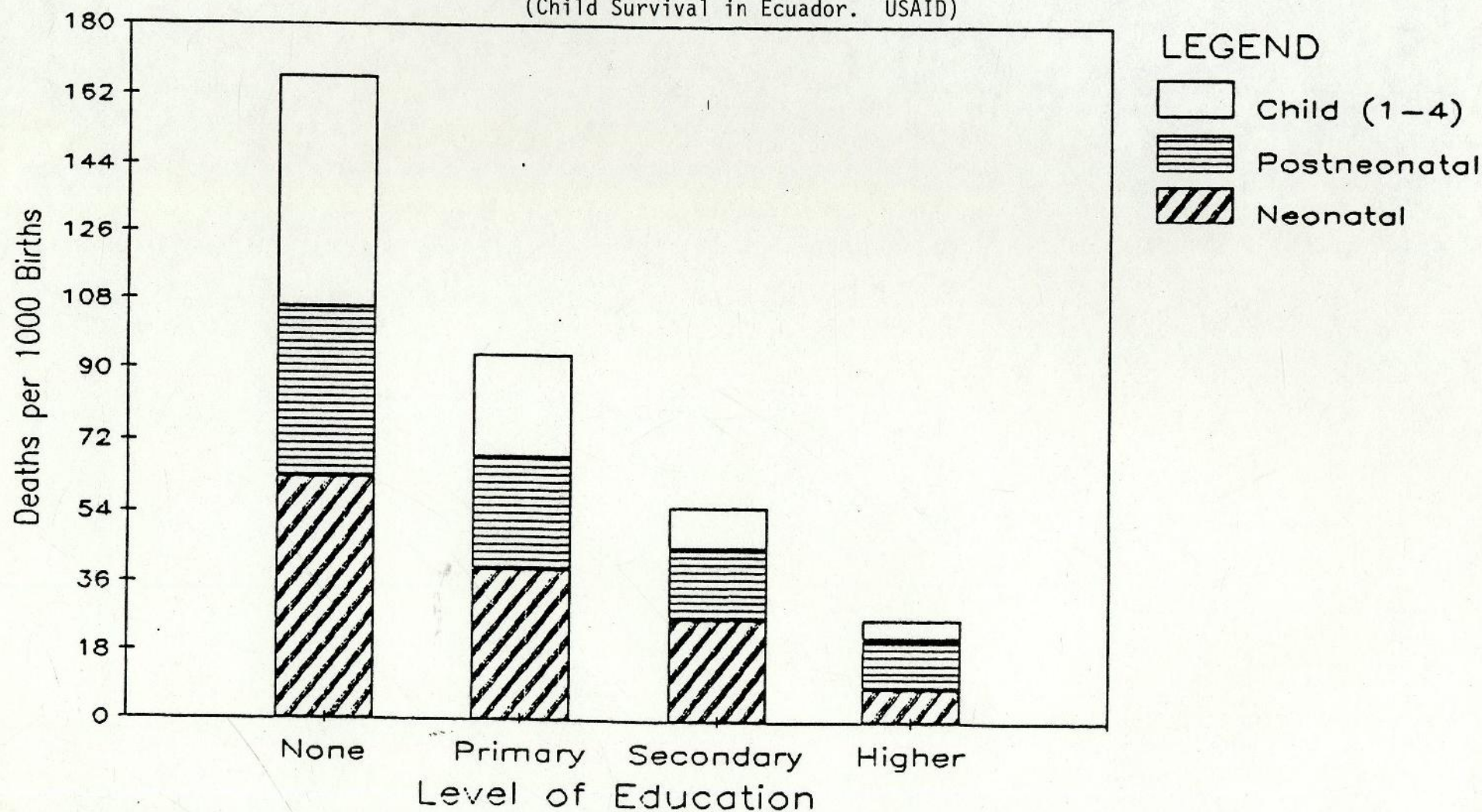


Source: CEPAR (1987).

Infant and Child Mortality According to Mother's Education

ENDESA, 1982-86

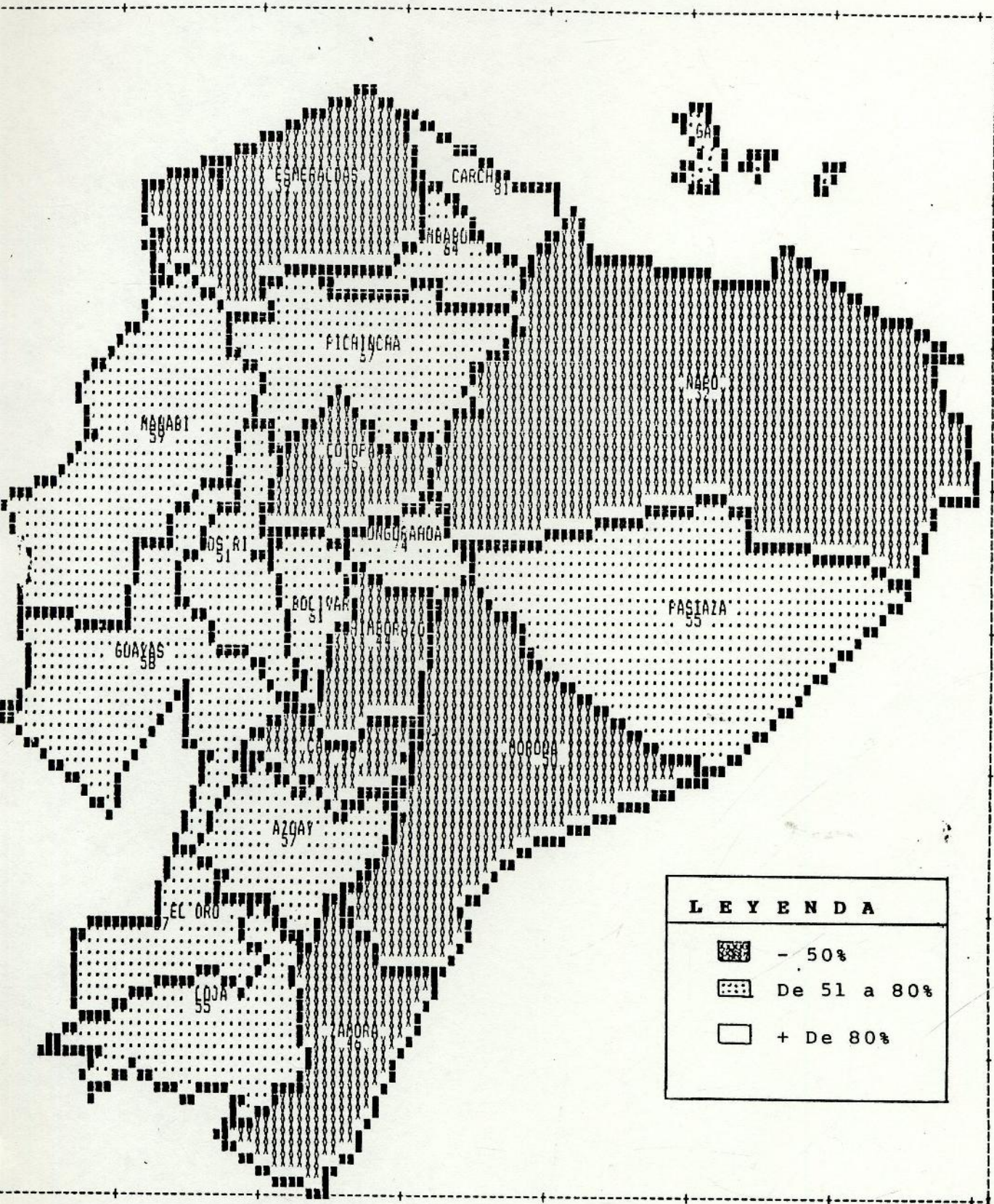
(Child Survival in Ecuador. USAID)



Source: CEPAR (1987).

COBERTURAS VACUNACION 1988

Fuente: Prog. Ampl. Inmunizaciones



FUENTE Y ELABORACION: PAI - nivel central

MINISTERIO DE SALUD PUBLICA

INSTITUTO NACIONAL DE INVESTIGACIONES
NUTRICIONALES Y MEDICO SOCIALES - ININMS

PLAN DE REDUCCION DE LA ENFERMEDAD
Y MUERTE INFANTIL - PREMI

MAPAS DE PREVALENCIA DE DESNUTRICION EN NIÑOS MENORES
DE DOS AÑOS

Símbolos:

De 0 a menos de 20% de desnutridos

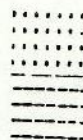
De 20 a menos de 30% de desnutridos

De 30 a menos de 40% de desnutridos

De 40 a menos de 50% de desnutridos

De 50 a menos de 60% de desnutridos

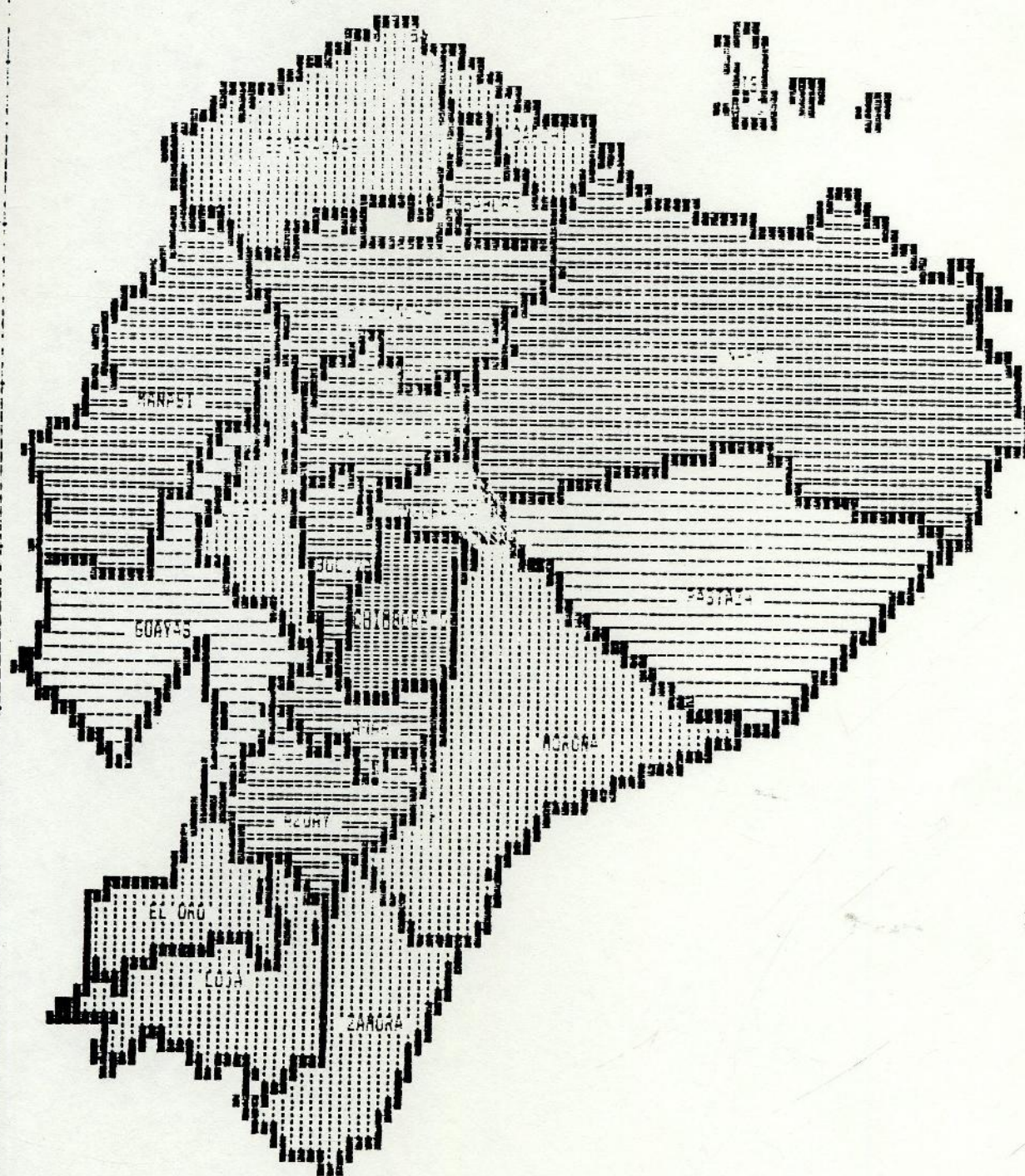
De 60% de desnutridos y en adelante



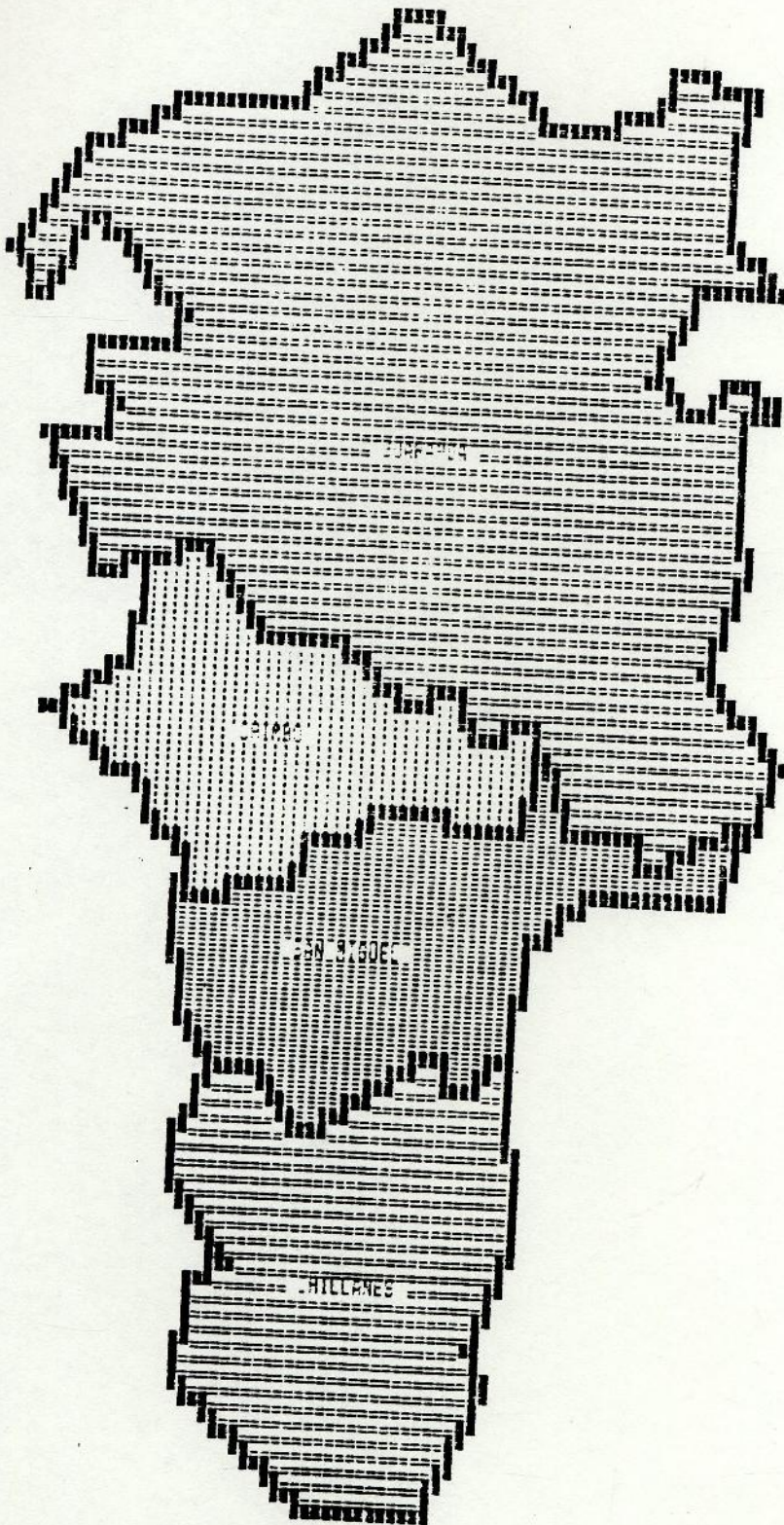
Nota: De los cantones que aparecen en blanco no se obtuvo datos

Septiembre 1986

ECUADOR
PREVALENCIA DE DESNUTRICION

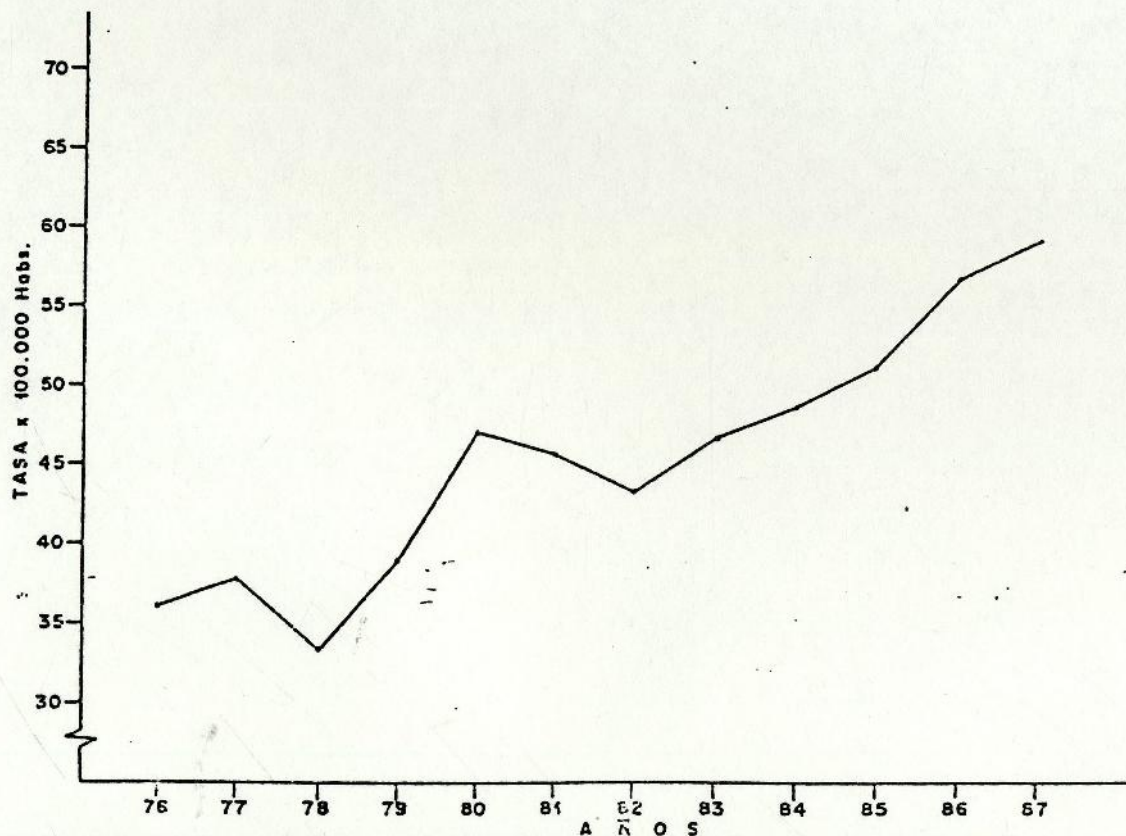


BOLIVAR
PREVALENCIA DE DESNUTRICION



INCIDENCIA DE TUBERCULOSIS, TODAS LAS FORMAS

ECUADOR 1.976-1.987

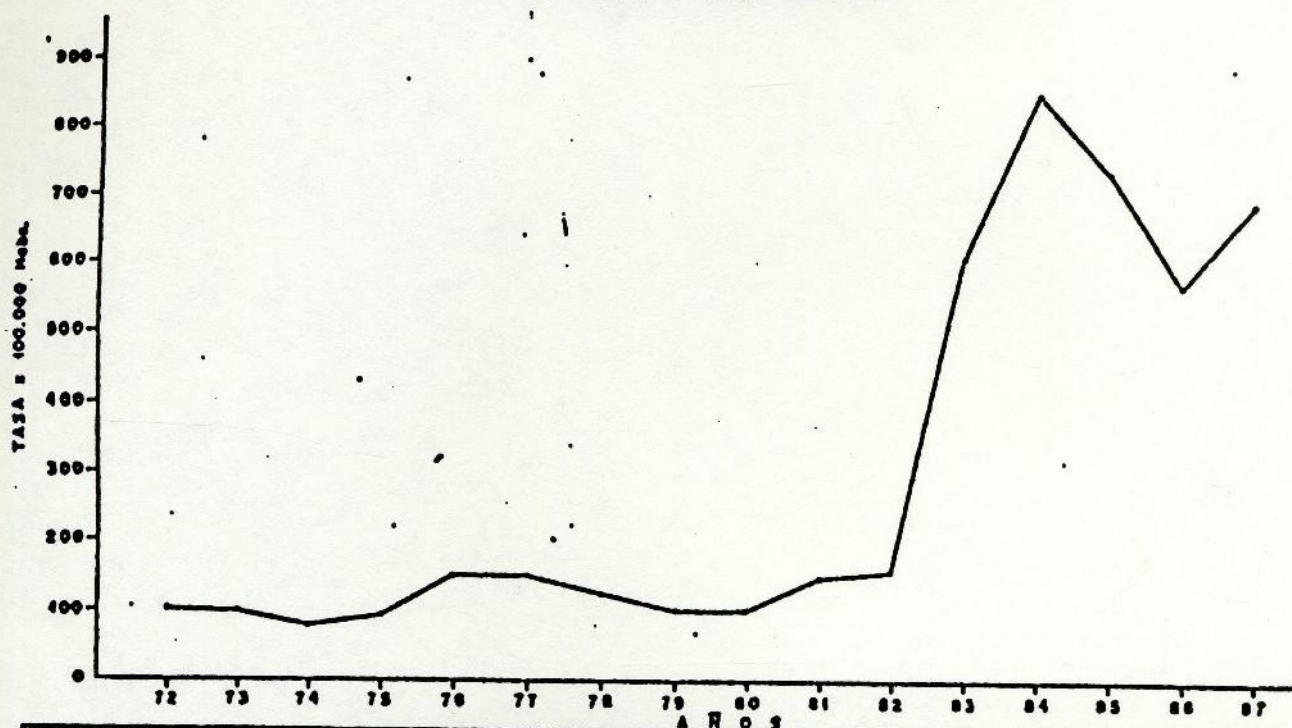


CASOS	2.647	2.858	2.617	3.149	3.950	3.966	3.880	3.985	4.301	4.798	5.489	5.867
TASAS	36.23	37.82	33.49	38.98	47.28	45.88	43.38	46.65	48.50	51.17	56.88	59.13

FUENTE: Dirección Nacional de Control y Vigilancia Epidemiológica

ELABORACION: División de Control de Enfermedades Transmisibles

INCIDENCIA DE PALUDISMO
ECUADOR 1.972-1.987

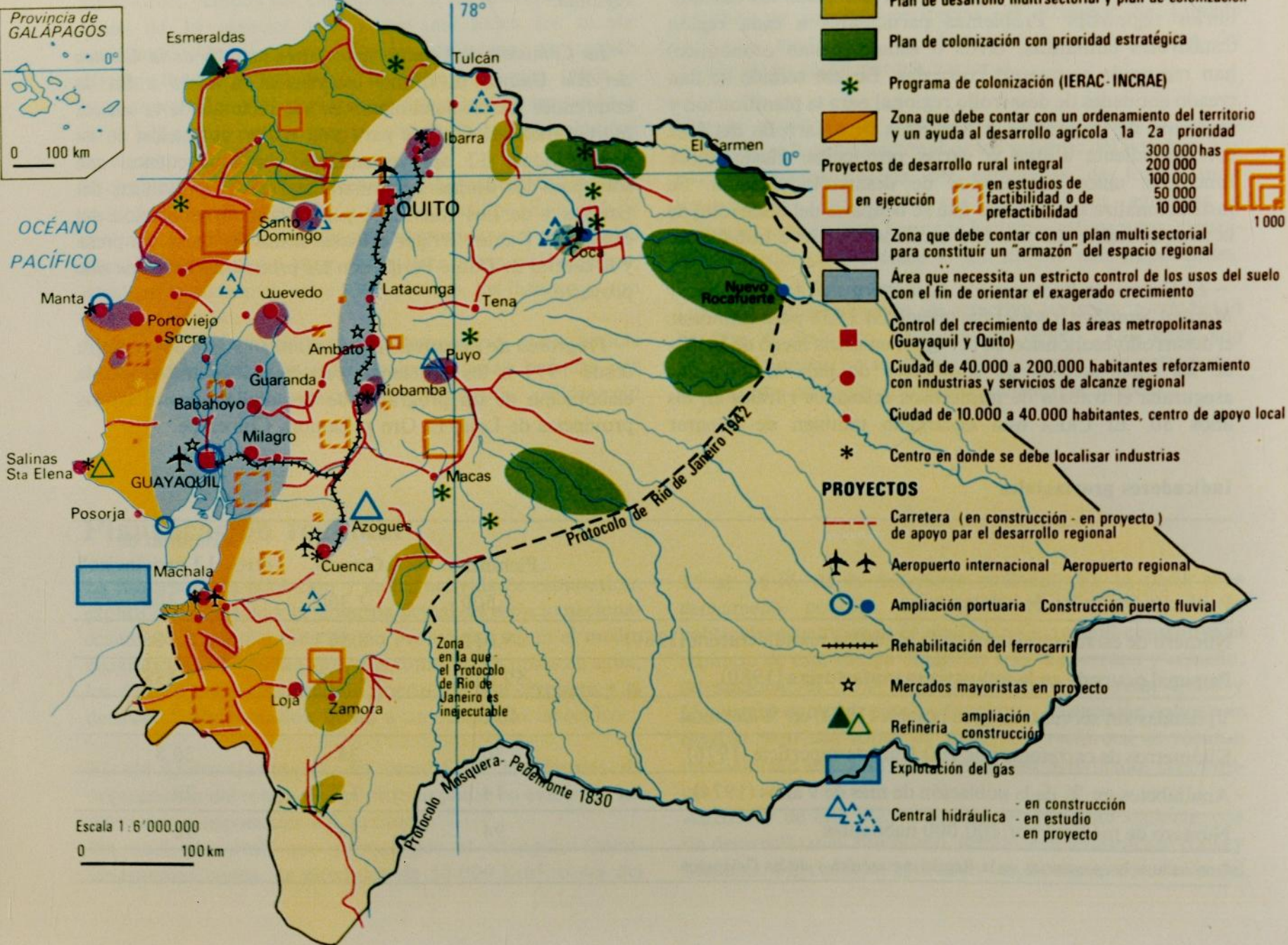


	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
CASOS	6.703	6.786	5.338	6.554	10.615	11.384	9.928	8.283	8.708	12.739	14.017	51.794	76.868	69.050	54.734	68.044
TASAS	103.03	100.9	81.1	92.8	149.4	150.7	127.1	102.8	104.2	147.4	156.7	608.4	840.9	738.3	567.4	683.8

FUENTE: Dirección Nacional de Control y Vigilancia Epidemiológica
 ELABORACION: División Nat. de Control de Enf. Transmisibles

Planificación regional

ORIENTACIONES DEL PLAN NACIONAL DE DESARROLLO 1980 - 1984



Balance migratorio

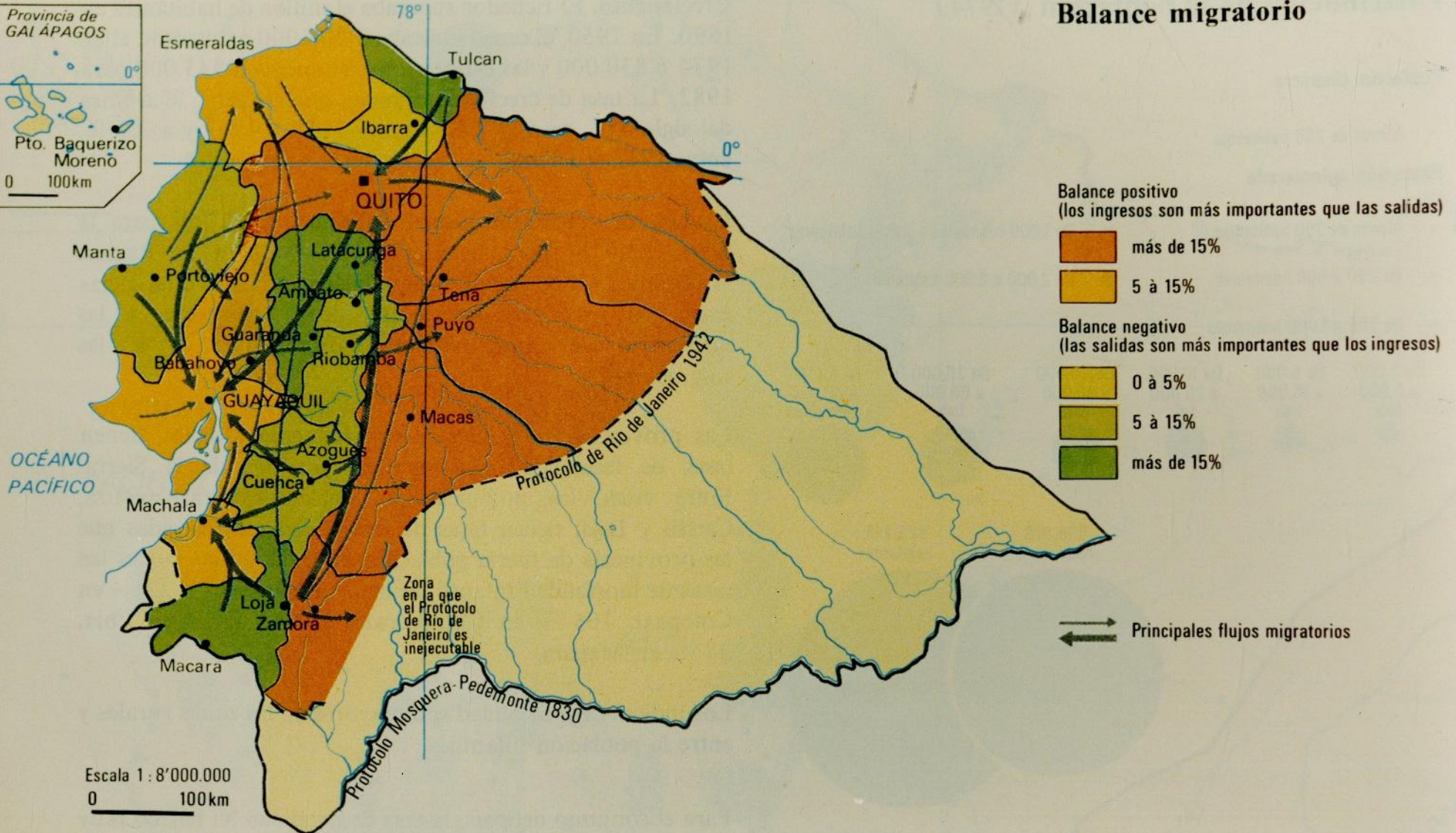
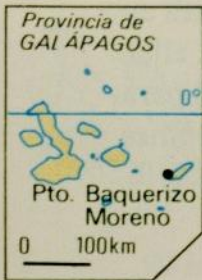
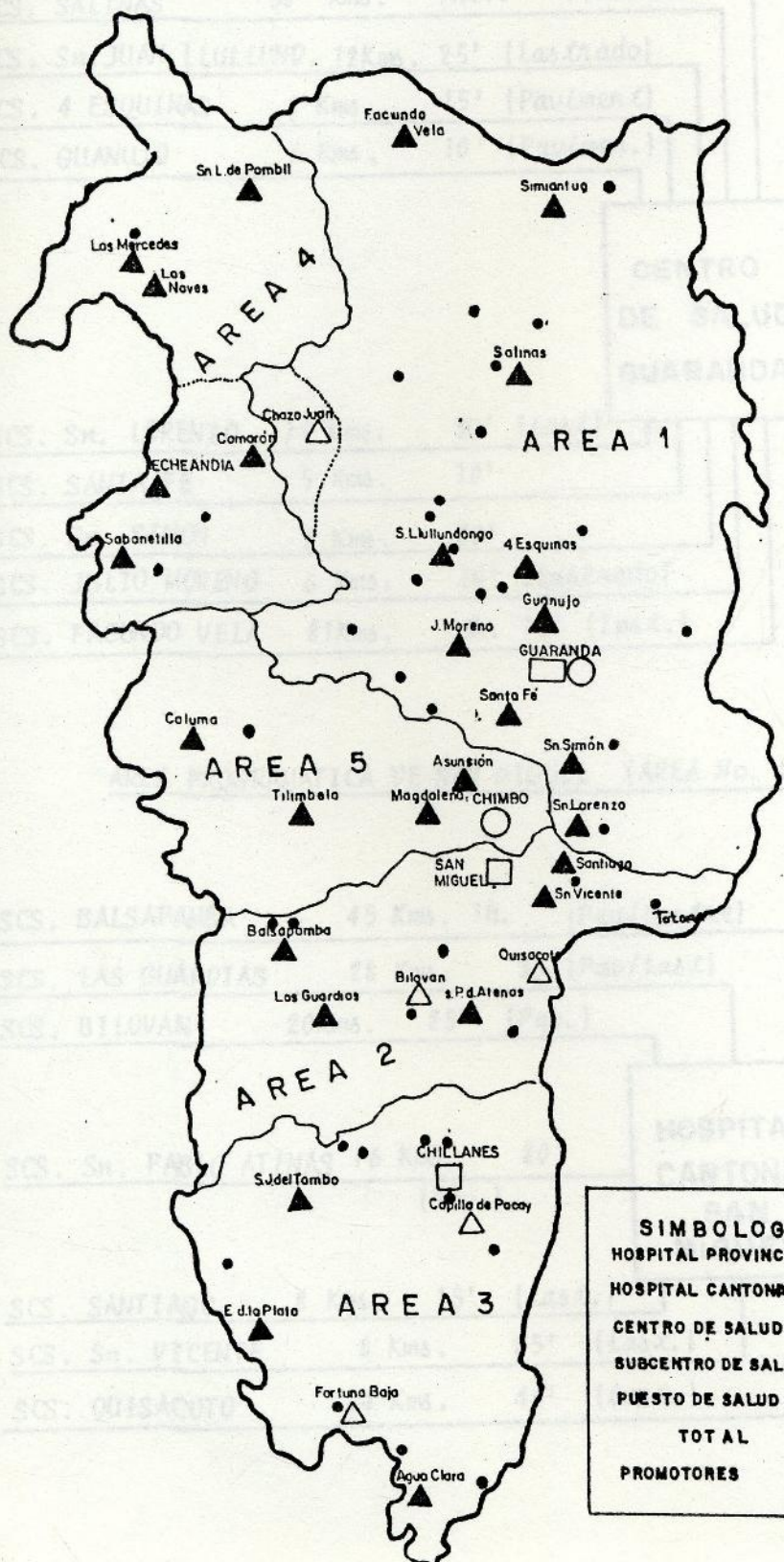


FIGURE #16

PROVINCIA DE BOLIVAR

MAPA DE LA PROVINCIA DE BOLIVAR, AREAS PROGRAMATICAS Y UNIDADES OPERATIVAS



SIMBOLOGIA	
HOSPITAL PROVINCIAL	
HOSPITAL CANTONAL	
CENTRO DE SALUD	
SUBCENTRO DE SALUD	
PUESTO DE SALUD	
TOTAL	
PROMOTORES	

Nº UNIDADES	
1	
2	
2	
27	
5	
37	
40	

- ACCESIBILIDAD DE LAS UNIDADES OPERATIVAS SEGUN GRADO DE
COMPLEJIDAS A SU CABECERA DE AREA, EN FUNCION DE DISTAN-
CIAS Y DE TIEMPO. PROV. DE BOLIVAR/1.988

AREA PROGRAMATICA DE GUARANDA (AREA No. 1)

SCS. SIMIATUG	57 Kms.	(2h.)	(Lastrado)
SCS. SALINAS	30 Kms.	1h.10'	(Lastrado)
SCS. Sn. JUAN LLULLUND.	12Kms.	25'	(Lastrado)
SCS. 4 ESQUINAS	8 Kms.	15'	(Paviment)
SCS. GUANUJO	6 Kms.	10'	(Pavimen.)

CENTRO
DE SALUD
GUARANDA

SCS. Sn. LORENZO	12 Kms.	30'	(Last)
SCS. SANTA FE	5 Kms.	10'	
SCS. Sn. SIMON	8 Kms.	20'	
SCS. JULIO MORENO	6 Kms.	10'	(Lastrado)
SCS. FACUNDO VELA	81Kms.	3h. 15'	(Last.)

HOSPITAL
PROVINCIAL
GUARANDA

AREA PROGRAMATICA DE SAN MIGUEL (AREA No. 2)

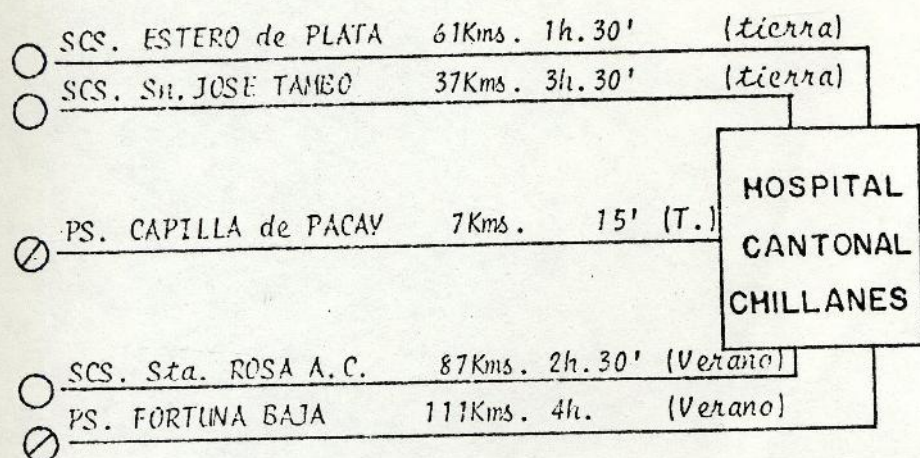
SCS. BALSAPAMBA	45 Kms.	1h.	(Pav/Lastre)
SCS. LAS GUARDIAS	28 Kms.	35'	(Pav/Last)
SCS. BILOVAN	20Kms.	25'	(Pav.)

SCS. Sn. PABLO ATENAS	16 Kms.	20'	(Pav.)
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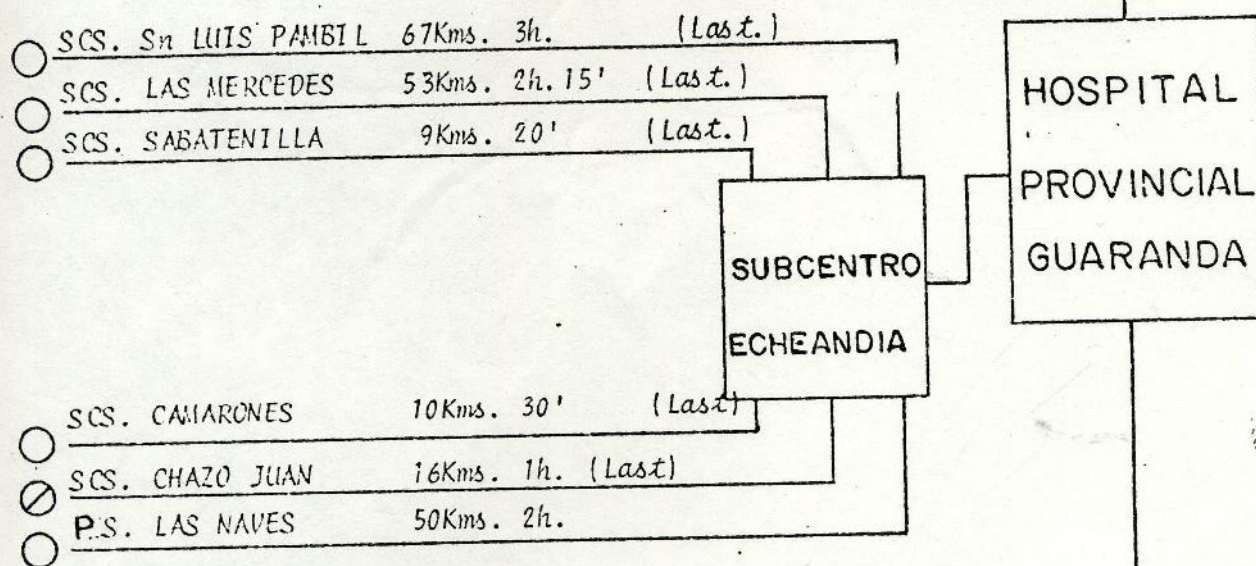
HOSPITAL
CANTONAL
SAN
MIGUEL

SCS. SANTIAGO	8 Kms.	15'	(Last.)
SCS. Sn. VICENTE	8 Kms.	25'	(Last.)
SCS. QUISACOTO	24 Kms.	45'	(Last.)

AREA PROGRAMATICA DE CHILLANES (Area No. 3)



AREA PROGRAMATICA DE ECHEANDIA (Area No. 4)



AREA PROGRAMATICA DE CHIMBO (Area No. 5)

