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**FINAL EVALUATION  
OF THE  
HONDURAS HEALTH SECTOR I PROJECT**

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**Submitted to:**

**USAID/Honduras**

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[Follow-on Project Recommendations are contained in a  
separately bound volume.]

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The team hopes the report will be helpful in assisting the Government of Honduras in improving the health of its citizens.

## DEDICATION

Development Associates wishes to dedicate this report to the memory of Patrick J. H. Marnane. Mr. Marnane, who was deputy team leader, died while working on this assignment in Honduras. We remember him for his untiring efforts, keen intelligence, warm personality and sense of humor. He made a major contribution to this report for which we shall always remember him. To his family and friends go our deepest sympathy.

## GLOSSARY

AED	Academy for Educational Development
AID	Agency for International Development
ARI	Acute Respiratory Infections
ASHONPLAFA	Asociacion Hondurena de Planificacion Familiar (Honduras Family Planning Association)
CARE	The Cooperative for American Relief Everywhere, Inc.
CDC	(U.S.) Centers for Disease Control
CESAMO	Centro de Salud (Health Center, with medical officer)
CESAR	Centro de Salud Rural (Rural Health Center, without medical officer)
CONAME	Comision Nacional de Medicamentos (National Commission of Medicines)
CONSUPLANE	Consejo Superior de Planificacion Economica (Superior Council for Economic Planning)
CRS	Catholic Relief Service
DG	Director General
EEC	The European Economic Community
EOPS	End of Project Status
ESF	Economic Support Funds
GCEDI	Executive Coordination and Institutional Development Group
GOH	Government of Honduras
GOJ	The Government of Japan
IDB	The Inter-American Development Bank
INSS	Instituto Hondureno de Seguridad Social (Honduras Institute for Social Security)
INFOP	The National Institute for Professional Training
LOP	Life of Project
MCH/FP	Maternal and Child Health/Family Planning
MOF	Ministry of Finance

<b>MOH</b>	<b>Ministry of Health</b>
<b>MSH</b>	<b>Management Sciences for Health</b>
<b>ORS</b>	<b>Oral Rehydration Salts</b>
<b>ORT</b>	<b>Oral Rehydration Therapy</b>
<b>PACD</b>	<b>Project Anticipated Completion Date</b>
<b>PAHO</b>	<b>Pan American Health Organization</b>
<b>PAI</b>	<b>Expanded Program of Immunizations</b>
<b>PANI</b>	<b>Patronato Nacional de la Infancia</b>
<b>PCU</b>	<b>Project Coordination Unit</b>
<b>PHC</b>	<b>Primary Health Care</b>
<b>PII</b>	<b>Project Implementation Letter</b>
<b>PIO/C</b>	<b>Project Implementation Order/Commodities</b>
<b>PIO/T</b>	<b>Project Implementation Order/Technical Assistance</b>
<b>PP</b>	<b>Project Paper</b>
<b>PROALMA</b>	<b>Proyecto de Alimentación Materna (Breastfeeding Project)</b>
<b>PVO</b>	<b>Private and Voluntary Organization</b>
<b>STD</b>	<b>Sexually Transmittable Diseases</b>
<b>TA</b>	<b>Technical Assistance</b>
<b>TB</b>	<b>Tuberculosis</b>
<b>UNAH</b>	<b>Universidad Nacional Autónoma de Honduras (National Autonomous University of Honduras)</b>
<b>UNDP</b>	<b>The United Nations Development Program</b>
<b>UNICEF</b>	<b>United Nations Children's Fund</b>
<b>VHW</b>	<b>Village Health Worker (Volunteers)</b>

**Exchange Rate:** 1 dollar = 2 lempiras generally for all years mentioned in the report.

## EXECUTIVE SUMMARY

This is the second external evaluation of the Health Sector I Project of the Agency for International Development and the Ministry of Health, Honduras. (Project No. 522-0153). The Project Agreement was signed in July 1980. The PACD was then set for July 1984. The PACD has since been extended twice, the first time to December 1987 and more recently to June 30, 1988.

Project Goal: To improve the health status of the Honduran population.

Project Purpose: To increase the effectiveness, efficiency, coverage and use of the health care system.

Evaluation Coverage: The Project works with a formal set of targets and objectives that are monitored. These were assessed. We also considered overall achievement apart from these and addressed questions of institutionalization and adequacy of Project components and strategy. Field observations involved visits to four of the eight health regions. Over 100 people were interviewed and frequent meetings were held with Project staff.

### Conclusions

1. Certain measurable health characteristics of the Honduran population have shown improvement. Morbidity from immuno-preventable diseases has declined over the life of the Project, although measles was still a serious problem in 1985. It is probable that the incidence of malaria has declined. Infant mortality showed a consistent decline between 1967 and 1981. (Estimates for more recent years will be available in 1987).
2. The MOH priority programs are consistent with the international child survival strategy. The MOH has been committed to this approach for over a decade and has made substantial progress in expanding coverage and improving services.
3. The Project strategy of concentrating its inputs and activities primarily on administrative support and management systems that contribute to the overall capacity to implement and sustain priority programs continues to be appropriate, and provides sufficient basis for the Mission to design a follow-on project.
4. Administrative support systems have improved under assistance from the Project. Examples include establishing a cold chain maintenance system and a national procurement and supply system for medical supplies.
5. The creation of a special commission to deal with procurement and supply has resulted in cost savings. Otherwise, cost containment has not been systematically addressed.

6. The Ministry has demonstrated interest in developing information systems for a number of management areas and is moving on implementing these. Other management areas are also receiving increasing attention. Attention is largely concentrated on the central level. Attempts to implement local programming have been mixed.
7. Training, supervision and the rationalization of the MOH supply system (all supported by the Project) have led to the provision of more useful health services at the health center and community levels.
8. Evidence of improvement in the regions is seen in the service capability, community worker education and area-to-health center supervision.
9. Promotional and educational campaigns supported by the Project have resulted in increased awareness of health services and appropriate treatment on the part of the population.
10. The complexity of the Project, involving so many discrete components, has permitted wide latitude for the Project to work with targets of opportunity and to continue working when obstacles to implementation emerged.
11. The other side of this (#10) is that, because there have been so many targets of opportunity, there has been a lack of follow-through on some basic elements of the priority components. These include, among other things, development of adequate supply storage capacity, creation of basic information systems and ensuring supervisory follow-up between levels of service and management.
12. Cost recovery efforts have lagged, although positive steps have been taken. This issue appears to be the victim of the excessive number of Project components, and the MOH's counterpart problems.
13. The Project's financial sustainability, assuming a gradual decline in AID funding, is questionable. The GOH in general, and the MOH in particular, both seem very committed to the Project's goals and objectives. This will be negated, however, by recent financial commitments to physicians, by means of the "Estatuto Medico," and the general rising costs of hospitals.

#### Recommendations for the Remaining Life of the Project

Specific recommendations for each of the Project components and subcomponents are contained in Section VII of Part I of the report. The following are more general in nature.

1. Priorities should be established so as to reduce the number of Project activities. This would result in a better and more efficient utilization of resources.

2. Data should be available where they can be used. There is a need for individual programs to have direct access to data-processing equipment. This can be done by placing micro-computers in the various offices and in the regions, and teaching staff to utilize them as a management and planning tool for their specific needs.
3. Questions of management and administrative support capacity should be addressed forthrightly and monitored more closely. These would include: (a) quality of operation plans and adherence to those plans; (b) decision making and responsiveness to problems; (c) reporting mechanism and quality of reports; and (d) management and administrative efficiency and effectiveness monitoring. The monitoring of quantitative activities and outputs should be phased over time so that the MOH can take over these responsibilities.
4. Serious attention should be given to finding alternatives to implementation tactics where obstacles to progress remain significant. For example, where warehouse and workshop construction is held up, consideration should be given to the purchase of buildings; where vehicle maintenance appears unmanageable, the MOH should seek means of contracting with private agencies for the maintenance of vehicles and medical equipment.
5. Steps should be taken to give the PCU a more direct role in Project implementation. It should have the authority to require compliance with planning and reporting requirements.
6. The MOH should be pressed on its agreement to implement cost containment measures for hospital operation and cost recovery for health centers.
7. AID and the MOH should renew efforts to provide long-term training for management staff, both in the central office and in the regions. Training should emphasize management and public health administration.
8. To ensure that there will be continuity of funding and operations, a Project Paper for the sequel to this Project should be prepared no later than June 1987. Since the MOH is aware of AID priorities and knows well its own needs, the Ministry should assume greater responsibility for preparation of a preliminary proposal.

## INTRODUCTION

### A. Purpose of this Evaluation

The objective of the evaluation is to assess the impact of the USAID/Government of Honduras Health Sector I Project, for which the Project Agreement was signed in July 1980. A second report based on this evaluation offers guidance and recommendations to both AID and the Ministry of Health regarding a follow-on project.

This is the second major external evaluation of the Project. There was also an internal evaluation (in 1986) along with several audits and ad hoc assessments during the life of the Project. The previous external evaluation was conducted by Westinghouse Health Systems in 1983.

Originally, the Project was to have run through July 1984. It has since been amended and extended through June 30, 1988. This evaluation is considered an early "final evaluation" and is conducted at this time because the Mission wants to assure continuity between the present Project and one that is expected to follow as soon as this one expires.

### B. Evaluation Methodology

In conducting the present evaluation, the team has focused on the results of the Project to date. We began with the "logframe" that was included in the scope of work and proceeded to assess impacts and other Project outcomes. This was all done in anticipation of preparing the second report that deals with recommendations and guidance for the sequel to Health Sector I. With that in mind we have also made recommendations (see Executive Summary and Chapter 7) for the remaining life of the Project.

The team consulted extensively with officials in the USAID, the Ministry of Health and other GOH agencies in Tegucigalpa, with all resident technical assistance personnel, and with representatives of international and bilateral agencies. We also visited four health regions to observe administrative and service operations.

The team had access to Project documentation produced by the MCH, Management Sciences for Health, USAID/Honduras, as well as other materials relevant to health and health programming in Honduras produced by these and other organizations.

Two members of the team participated in the Project Internal Evaluation conducted in May of 1986.

At the request of the AID Mission we endeavored to involve those responsible for the Project in the evaluation process by continuously consulting with responsible Ministry officials, technical assistance personnel and USAID staff.

At least two evaluation team members attended weekly program staff meetings to report on activities and to obtain guidance. Persons from AID and MSH also attended several daily sessions with the team.

There were also larger meetings, attended by persons from AID, MOH and MSH, at which preliminary findings and recommendations were discussed at length and guidance was provided.

The process of such participatory evaluation is time-consuming for all parties. The result is a largely, but not wholly, collaborative product. This should result in better understanding of the evaluation by all concerned parties.

### C. Previous Project Evaluations

Previous evaluations of Health Sector I included a mid-Project evaluation done by Westinghouse in 1983. Birch and Davis Associates conducted an administrative analysis, focusing on Project recurrent cost and technical assistance in June 1984.

The Westinghouse evaluation concluded that, while the Project was behind implementation schedule, its basic design was still appropriate. A reprogramming of resources was conducted, including a number of changes recommended in the Reprogramming Document, consistent with an overall recommendation that the next phase of the Project concentrate on the consolidation of critical systems. These included management and planning,

logistics, maintenance and supervision, and other high priority technical health interventions. The evaluation recommended that the Project not diversify into additional areas such as oral health.

Specific suggestions were made for scaling back the proposed activities, particularly in view of limited absorptive capacity on the part of the MOH.

The major recommendations were as follows:

1. Certain Project sub-components (such as Rabies and Sexually Transmitted Diseases), which are no longer of high priority to the MOH, should be reconsidered and possibly eliminated.
2. Core Project activities (such as Logistics, Management and Planning, and Maternal and Child Health) should receive more intensive effort during the remainder of the Project life.
3. AID should move swiftly and decisively to ensure that the Government of Honduras creates and fills the permanent positions critical to Project implementation and sustainability.
4. Short-term technical assistance in specialized areas should be used flexibly in support of Project components such as Malaria and Maintenance.
5. Steps should be taken to ensure that the PCU's coordination of financial aspects of Project implementation is complemented by adequate technical and programmatic coordination. Originally planned as the responsibility of the GCEDI, this function does not appear to be adequately carried out, to the detriment of the Project.
6. AID should adopt formalized implementation strategies, identifying critical activities, dates and responsible parties, which are then monitored according to a PERT Chart.
7. An AID Project support officer should be assigned to the Project on a permanent basis to reinforce the technical management.
8. The Project should be evaluated on a regular basis, and evaluation should be included as a management tool as part of the "Management and Planning" component of the Project.

The Mission and MOH acted on these recommendations and the amendment to the Project Paper dated 11/29/84 reflected most of the recommendations.

Specifically, the Mission and MOH implemented recommendations 1-5 and 7 and 8. The Mission did not act on number 6 since it felt that because of unpredictable factors involved in Project implementation a PERT Chart would be of limited value. The Mission did respond by monitoring the Project based on

the logical framework objectives. This evaluation focuses on the achievement or non-achievement of stated objectives of this Project as well as their relevance to implementation.

The 1984 Birch and Davis administrative evaluation of the Project had several recommendations to offer, including the following:

- The MOH should divert funds from hospital construction to primary health care;
- Better donor coordination should take place to ensure effective use of donated funds;
- Alternative funding for primary health care costs through user fees should be implemented;
- There should be more use of short-term TA funds; and
- An automated information system should be implemented.

The evaluation concluded that the MOH had a strong commitment to Health Sector I, and that AID should maintain a flexible stance to accommodate changing economic conditions in Honduras.

## I. THE HONDURAN CONTEXT

### A. Social and Demographic Characteristics

Politics: Honduras has a democratically elected president. The most recent election occurred in late 1985 and the new President took office in January of 1986.

With each new president, there are dramatic changes in personnel throughout the government including those in charge of technical offices of the various ministries. These changes always disrupt priorities and threaten the progress of ongoing projects. The most recent election is purported to have been less disruptive than others, but changes are still being felt throughout the government.

Current political unrest in the neighboring countries of Nicaragua and El Salvador is a focus of both Honduran and broader international concern. Much of the economic support provided to Honduras now comes with the expectation, especially by the United States, that it can buttress the Honduran Government, and reduce threats to its stability. Over the period 1986-1989, AID is programmed to provide about \$600 million in all types of economic aid.<sup>1/</sup>

Economy: Since 1984 economic performance of Honduras has been fair although unspectacular. The key to positive growth in both 1984 and 1985 was ESF funding. Without such money, real growth would have been negative. The principal economic activities of the country are agriculture and livestock production. This year promises to be a good one for bananas and coffee, the two major export items. These increases, combined with an attendant decline in the price of imported oil should foster further economic recovery.

There has been improvement in the production of other cash crops in recent years. National impact of this remains limited but in some areas it has improved the economic level of communities.

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<sup>1/</sup> FY 1988 Action Plan for Honduras, May, 1986

Honduras' capacity to produce finished goods is very low and the direct economic impact of such exports is slight for the great majority of the population. USAID estimates of unemployment for Honduras are 25-30 percent. The newspaper, El Herald, of June 5, 1986, estimated unemployment to be 41 percent, or 900,000 persons.

Population: The overall population growth rate for this decade is estimated to be 3.4 percent by the National Council for Economic Planning (CONSUPLANE). Data more recent than the 1974 census suggests that this estimate is probably high, since there has apparently been a decline in fertility in the past twelve years. CONSUPLANE estimates further that there is an urban-rural growth disparity, 5.5 percent and 2.2 percent per year respectively, due largely to high rates of outmigration from rural areas.

CONSUPLANE estimates that in 1985 approximately 60 percent of the Honduran population lived in rural areas, while 40 percent resided in urban areas. The two major cities Tegucigalpa and San Pedro Sula alone account for over 25 percent of the total population, projected at 4.5 million persons for the current year, 1986.

The MOH works with estimates of 210,000 children under one year of age and 590,000 children between one and five years. Approximately 46 percent of the population is assumed to be under 15 years of age.

The Ministry of Health in its 1986 operational plan reports that 40 percent of the population over 10 years of age is illiterate.

## B. Health Conditions

Diseases: Honduras suffers high rates of illness and infant and child mortality that are classically associated with a rural, but rapidly urbanizing and economically very poor, tropical country. The national rate of infant mortality appears to have been declining for some time. It was estimated to be between 70 and 85 per 1,000 live births for the year 1981, the most recent date for which an estimate is available. Rural and marginal urban areas are believed to have higher rates of infant mortality.

Among the most serious of childhood health problems in the country is malnutrition, which is estimated to affect over 70 percent of the under-five population.

Diarrheal diseases are counted among the major infant health problems. It is estimated that children under five years of age suffer an average of three episodes a year. This means that there are in excess of two million episodes per year in the under-five population. Of these, 195,000 were treated at MOH health facilities in 1985. Diarrheal disease control is a high priority of the Ministry and of international agencies operating in Honduras.

As a cause of infant death, for which some diagnosis was made, acute respiratory diseases were second only to gastrointestinal infections.

Although the incidence rates of immuno-preventable diseases seem to have improved markedly in recent years, sporadic epidemics indicate they are not yet fully controlled.

Tuberculosis, malaria, and low birth weight are also important factors in infant mortality and general health.

Accessibility to Health Care: Since 1972 the number of health care facilities has increased dramatically. Construction and an expanded network of community health centers and health care providers have made health services considerably more accessible to larger numbers of people in more areas of the country. In 1985 there were six national hospitals, five regional hospitals and nine area hospitals. There were also 589 health centers, distributed throughout Honduras. Without recent census data, actual numbers and percentages of persons with access is indeterminable. The Ministry of Health, however, points out that accessibility is still not complete and estimates of effective access range from 60-67 percent with other organizations accounting for an additional 12 percent.

During the past five years serious measures have been taken to extend health care beyond facilities through reorganization and remobilization of community level health workers and of auxiliary nurses based in rural health centers.

## C. Government Organization

### 1. Overall

The Honduran Government is organized into three branches -- executive, legislative and judicial. Each has a set of sub-agencies or ministries under its control. The operations of the Ministry of Health are within the executive branch, but subject to accountability and laws imposed by the legislative branch as well as regulations of other agencies within the executive branch.

Implementation of the Health Sector I Project by the Ministry of Health requires cooperation from myriad other agencies within the government. Those on which the Project depends most directly will be discussed in Part III below.

### 2. The Ministry of Public Health

The organizational chart, shown in Annex G, shows the organizational structure of the Ministry at the time of this writing. The most notable aspect regarding the structure, especially from the point of view of the HS-I Project, is the large number of offices that report directly to the office of the Director General. The Director General has final responsibility for this Project. He has 18 technical and administrative offices as well as eight regional Health Directors reporting directly to him.

Health services are grouped administratively into eight geographical districts called sanitary regions. Each regional administrative office directs several areas where numerous decentralized health services are provided. The Regional Directors are responsible for CESAMOs, CESARs, and out-reach services.

Hospitals at the regional and area level are supervised by the direction of the regional directors. They operate under the normative authority of the Hospital Division Director, who reports to the Director General.

Regions are divided into Areas, each of which has an Area Chief who is a physician. Where there is an Area Hospital (CHA), the Area Chief may also be the Area Hospital Director. This has at least a potential for creating conflict at the Area level because the Area Chief/Area Hospital Director is responsible to two superiors with competing interests.

Concern for Areas as distinct units within the system has developed along with the growth in the number of establishments and personnel within regions. In 1970 there were only 68 health facilities in the entire country. By 1981 there were 433 and in 1985 the number had grown to over 600. The administrative capacity has not kept pace with this expansion of services.

In 1984 the Ministry's organization was quite different, primarily concerning the span of control of the Director General. Then, there were four technical and administrative directorates and the eight regional directors. These four directors subsumed these 18 divisions and units and the Administrative Directorate that now report to the Director General.

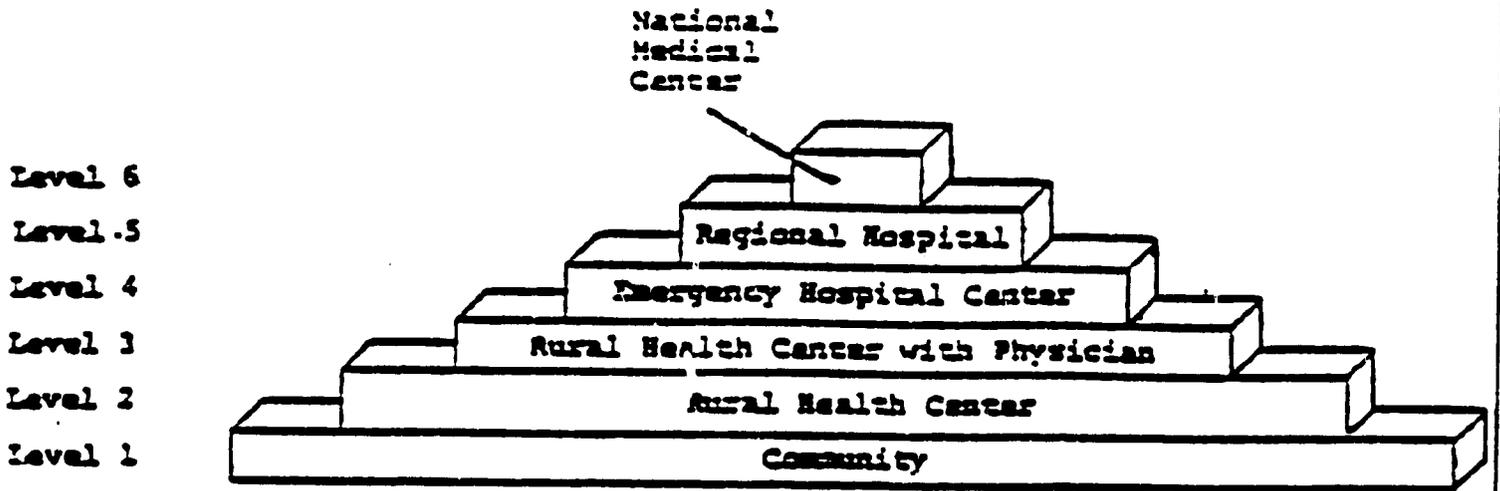
It has been indicated that this change followed from the election year desire to consolidate power among fewer persons within the government. As such, it was believed to be temporary. There has, however, been no apparent move to reorganize along the lines of the old system.

The MOH health service system is organized in a hierarchy of six levels of care sophistication (see Figure 1 below). Those with which this Project is primarily concerned are the Centro de Salud con Médico (CESAMO), the Centro de Salud Rural (CESAR), and the community agents.

The CESARs are designed to serve areas with 2,000-3,000 persons, while CESAMOs are expected to cover 10,000-12,000 persons.

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FIGURE I-1  
HONDURAS HEALTH SYSTEM



22

Within its service system, the MOH counted the following numbers of persons by category in 1985:

891	Physicians
398	Nurses
2,191	Hospital nurse auxiliaries
1,011	Health center nurse auxiliaries
783	Technicians
4,822	Active traditional midwives
1,754	Active health guardians
1,580	Health Representatives

Between 1981 and 1985 the MOH has increased hospital out-patient care by 48 percent. Services provided by health centers increased by 16 percent. Community level worker services increased by a total of 48 percent. This reflects the greater emphasis the Ministry has given to such outreach services.

At the same time, there has been a more efficient use of hospitals, which have had greater numbers of patients but have reduced their occupancy rates. These follow the Ministry's policy aimed at establishing a more efficient and effective system that focuses on primary care and lower costs.

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## II. HEALTH CARE IN HONDURAS

The Ministry of Health of Honduras is ultimately the agency responsible for ensuring that health care is available to the people. In fact, however, it shares the service provision with a number of other agencies; both government and non-governmental, and with non-institutional providers. In this section we mention briefly only the more prominent providers of modern health care service. These are the Ministry of Health, the Honduran Institute of Social Security (IHSS), the armed forces, banana growers, the Honduran Family Planning Association (ASHONPLAFA) and private clinics and practitioners.

### A. Ministry of Health Services

The MOH provides a wide range of hospital services including radiography, laboratory, surgery and OB/GYN. There is a referral system used to refer complications to the next higher level of care, with the national hospitals providing tertiary care and specialized services.

During the period 1981-1985 there were several significant changes in the hospital care activities. These include: a 48 percent increase in out-patient services; a shorter average in-patient stay, from 9 days in 1981 to 7.8 days in 1985; a more rapid turnover of beds, 31/yr. in 1981 to 33/yr. in 1985, resulting in a decline in the occupancy rate from 75 in 1981 to 71.2 in 1985; 26 percent increase of babies born in hospitals; and an increase of 38 percent in total hospital attendance. Combined, these data indicate a more efficient use of hospital facilities over this period.<sup>1/</sup> The number of hospital beds available did not increase appreciably over this period, with the number of beds per 1,000 population at 0.8 in 1985.

Services provided in health centers also increased by 16 percent over the five year period. Services provided by traditional midwives, guardians of health, and health representatives increased by 48 percent.

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<sup>1/</sup> Boletín de Estadística e Información de Salud. Estadísticas Hospitalarias 1984-1985.

The types of services offered in health centers (CESAMOs and CESARs) include, maternal and child health, immunizations, treatment of minor ailments, family planning, patient referral, coordination with the informal health system of traditional midwives and VHWs, diarrhea control using ORS, and environmental sanitation.

This primary health care system meets a major part of the communications needs in the area of disease detection and prevention, and acts as a first point of contact with the overall health care system.

The Ministry provides virtually the only modern care service available to the vast majority of the rural and marginal-urban people in the country. The range of MOH services is broad, including promotion and education, and primary attention through tertiary services at large urban hospitals.

**B. Social Security**

The Honduran Institute of Social Security provides services to about nine percent of the population, including workers and their dependent wives and children. It has two hospitals and three clinics. In towns and in the cities it also has a program for paying private physician services.

**C. Armed Forces**

The Honduran Military does not have its own hospitals. The ambulatory services that it provides directly are minimal. Officers use private clinics and enlisted men are expected to use MOH facilities.

**D. Banana Growers**

The large banana growers provide complete health care to their employees and their families. Their clinics are located mostly on the north coast.

**E. Private Clinics**

Private clinics are mostly located in urban centers. They are licensed by the MOH, but are not routinely supervised.

1. Asociacion Hondurena de Planificacion Familiar (ASHONPLAFA)

This private association, which is an affiliate of IPPF, operates two family planning clinics. One in Tegucigalpa, the other in San Pedro Sula. It also operates a community-based contraceptive program, a social marketing program for contraceptives, and works with the MOH by providing training in surgical contraception to MOH doctors. It also trains other MOH staff.

2. Religious Groups

Various groups provide health out-patient care in clinics in rural and marginal areas. They also support mobile medical teams in areas where health care is not readily available, and operate four hospitals where client fees are collected when possible.

3. Private and Voluntary Organizations

Although not strictly private sector institutions, there were over 60 private and voluntary organizations (PVOs) in Honduras, as of 1980. All of these worked in programs related to health and nutrition. As of 1980, the following information applied to the PVOs on which data is available.

- There were over 650 health professionals, in 55 separate organizations, offering direct health services;
- They ran 45 clinics (similar to CESAMOs), and four hospitals; and
- They contributed more than \$8 million annually to the health sector in Honduras. Most of these funds were from foreign donors.

In summary, it is estimated that the above mentioned organizations provide health services to approximately 72 percent of the population. The services are distributed as follow among the agencies.

Ministry of Health	60%
IHSS	9%
Private Clinics	3%
Total Population Coverage	72%

F. Private Sector Pharmaceutical Production

One of the key areas of private sector involvement, which bears directly upon the HS-I Project, is pharmaceutical production. Honduras has a number of privately owned companies currently manufacturing a wide variety of medicines. The companies, many of which have been in business for over 10 years, are located in and around Tegucigalpa and San Pedro Sula.

A part of a recent study on the marketing of ORS, done by AED, pointed out that two laboratories in San Pedro Sula had expressed interest in producing the product. ANDIFAR preferred production only; while laboratory Francelia, a current producer of Dextrolito, expressed interest in producing and distributing ORS.

The advantages of strengthening the local, private sector production of medicine are apparent. Local production provides several benefits not offered by donated products (from USAID, UNICEF, PAHO, etc.): there is more control over the quantity of the product; local production generates employment; purchasing raw materials is less costly than importing a finished product; local production may stimulate production of other products; and local production allows for packaging to be designed to meet the needs of the target audience.

There appears to be a well-established retail outlet for medicine. There are approximately 200 pharmacies, and 250 "medicine sales outlets" (puestos de venta de medicinas) in the country, with most of the pharmacies in Tegucigalpa and San Pedro Sula, and "puestos" in larger towns.

These outlets are supplied drugs through a network of laboratories, drug wholesalers, and combined laboratory/drug wholesalers. In general, all of these organizations have warehousing facilities, a fleet of trucks, and personnel (drivers, distributors, salesmen, and other requisite staff).

In its recent report, AED developed five separate models for the implementation of ORS marketing. Four of these models relied heavily on the private sector, while the last relied on ASHONPLAFA.

As far as health care delivery is concerned, there are substantial amounts of private sector services available. Although there is a dearth of data in the area, it is apparent that an overwhelming percentage of private hospitals, laboratories, doctors, and nurses, are concentrated in Tegucigalpa and San Pedro Sula. While these people and institutions are generally efficient and better managed in some respects than government health programs, they are relatively costly and usually focus on curative, rather than preventive health.

G. PANI

The major, state-owned pharmaceutical producer, and main supplier to the MOH, is an important component of health care in Honduras. This is the "Patronato Nacional de la Infancia", or PANI. The laboratory of PANI began operating in 1962 to produce medicines related to the well-being of mothers and infants. The medicines produced in the early years were few and rudimentary and generally were donated to users by the MOH. It was not until 1974 that Lab. PANI began to develop a significant volume of production and its own quality control activities.

Lab. PANI processes imported bulk drugs into dosage-form pharmaceuticals. The generic drugs that it produces are not subject to patents or royalties. Its output is sold almost entirely to the MOH "upon request." Lab. PANI neither exports its products nor does it sell to the general public through private pharmacies. Its primary goal is to supply low-cost, high-demand generic medicine to the public health system.

The laboratory has been funded heavily by PANI's sale of lottery tickets. Since 1974 the level of pharmaceutical production by PANI has increased noticeably, owing to the substantial support it receives from the Ministry of Health. In 1983 the MOH purchased 95 percent of the products produced by PANI. Since 1975 this percentage has never fallen below 89 percent, and at times has approached 100 percent. During this period Lab. PANI's output, in terms of current lempiras, has risen over 300 percent.

TABLE II-1

**LAB. PANI SALES**  
(Lempiras, Thousands)

Client	1975	%	1977	%	1979	%	1981	%	1983	%
Ministry of Health	371	92	890	89	1,318	97	1,277	94	1,614	95
Social Security*	8	2	78	8	24	2	-	-	3	0
Other	23	6	37	3	15	1	22	2	81	5

Source: Planning Unit, PANI

\*Honduran Institute for Social Security (IHSS)

The above information provides a classic example of how a state-owned corporation can lose its vitality when it sells virtually all of its output to a waiting government client. It has almost no incentive to increase production, develop more efficient systems, or even meet its current demand. This is all compounded by extremely high labor costs as a result of a strong union. This situation is exacerbated even further, according to PANI, by very short lead times in the orders placed by MOH. Given a number of problems in acquiring and producing drugs, it can take PANI up to 8-12 months to produce an order placed by MOH. This can obviously lead to problems when the MOH places an order and expects delivery within a very short period.

In spite of the aforementioned series of problems which is currently confronting PANI, it has made a number of significant advances. For example, they have developed new medicines which are now beginning to benefit the MOH; they have established a quality control system and acquired new equipment; and they have strengthened their personnel.

As a result, the MOH has assured PANI that it favors increasing the potential and capacity for pharmaceutical production. This appears reasonable, and hopefully possible, for many essential medicines. Various evaluations have

indicated that there is a sufficient demand for these products, PANI's technology is appropriate, and that there exists a willingness to pay for these products.

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### III. THE PROJECT

#### A. Historical Antecedents

Traditionally, curative medicine was only practiced in the principal cities in Honduras. It covered a small percentage of the population, while most rural inhabitants and those of poor sections have had to depend on "traditional medicine.

Forces of change began in the 1930s when the Rockefeller Foundation helped establish the first program aimed at improving public health. These efforts were abandoned when Honduras showed little interest in fostering such a program. In 1940 the Inter-American Service Cooperative provided a renewed impetus to the Ministry of Health for the general improvement of the national health. The necessary funds were acquired to begin the construction of hospitals and health centers and the improvements of services, as well as to augment salaries of health personnel. By 1958 the MOH was able to count 10 hospitals and 16 health centers distributed among the major towns and cities.

Throughout this period the pedagogic orientation of the national medical school was toward instruction of physicians in purely curative medicine. This, as a result, determined the overall national health policy, namely that of limited and expensive curative health care for a small class of people.

In 1964 a group of public health physicians began to identify the importance of the community-level health system. This resulted in the development of a new set of activities in previously untouched areas: training and continuing education for local midwives; long-term follow-up of training; and supervision by OB/GYNs and public health nurses.

This new health policy framework was formally institutionalized in 1973 with two major occurrences, one internal and the other external. Internally, a group of public health physicians started to define public health policies. These policies were oriented toward expanding medical coverage, focusing on preventive services and environmental sanitation, and improving the rural

potable water conditions. This group designed specific medium and long-term programs to deal with these issues. An emphasis was placed on regional programming and administrative reform so as to adopt the policymaking system to the National Development Plan. This plan assigned maximum priority to rural development, particularly agriculture and forestry.

The impact of this is evident in the explicit recognition of the activities implicit in a reformed public health policy. This occurred at the "10 Year Health Plan for the Americas" in Punta del Este, Uruguay. This conference emphasized the importance of extending health coverage to rural inhabitants and marginal urban populations.

For both political and administrative reasons this health initiative broke down in 1979, and primary health care initiatives lost their momentum.

There followed a USAID health planning project that, among other things, generated a health sector assessment in 1980. That document argued for renewed attention to health care for rural and marginal urban people. It also noted weaknesses in organization at the Ministry of Health, weaknesses that would need to be addressed if services were to be expanded and properly sustained within the economic limitations of the country.

Following this, USAID and the Government of Honduras developed the plan for the Health Sector I Project. The Project, and the MOH's overall plan, called for increased emphasis on primary health care, focusing largely on the health needs of women and children living in rural and marginal areas. The Project itself was not only designed to address these issues, but also was aimed at simultaneously improving the management, administrative support, and human resources capabilities of the Ministry.

Specific elements of the Project, along with identified indicators of achievement, have been altered during the Project's life. These have been done in an attempt to reflect changes in recognized needs and possibilities for the system, as well as to use better the information available. The conceptual framework of the Project has, however, remained largely intact. The basic strategy has also been constant.

## B. Project Goal, Purpose and Objectives

The goal of the Project is to improve the health status of the Honduran population. This is consistent with the overall goal of the MOH and the Honduran government. Indicators selected to measure goal achievement include increased life expectancy at birth, decreased mortality of infants and children, and a general decrease in morbidity.

The achievement of specific goals is clearly dependent on factors external to the Project and the health sector. The operative assumption was that other development efforts would be complimentary. It was also recognized that measurement would be difficult because of lack of valid health and demographic data in Honduras.

The purpose of the Project is to increase the effectiveness, efficiency, coverage and use of the health care system. The output and impact objectives of the Project, following this, are to be seen in: (1) improved services and impact of specific health and disease interventions; (2) expansion of less costly, but effective, services; and (3) greater accessibility and use of services by the target population.

## C. Project Strategy

The strategy of the Project has taken into account: (1) the commitment of the GOH to improve health status; (2) the need to improve the MOH institutional capacity to manage and support the primary health care system; and (3) the need to establish health care priorities within the human and financial limitations that exist.

The Project focuses on support function activities and the improvement of operational management. Among these are logistics, maintenance, training, supervision, planning and information production and use. These are aimed at improving the MOH's ability to support services overall, with special attention given to the support of particular technologies that will have more immediate and important impact on the infant and child population.

The majority of the Project's effort goes into activities at the central Ministry level. Some efforts, however, do extend to the community service level. The effects of all activities are expected to be observable in service delivery throughout the system, especially primary health care services.

D. Project Organization

1. Project Administration

The agency responsible for Project implementation is the Ministry of Health. The Director General of Health is responsible for all the operational aspects of health care within the MOH and, thus, for the Health Sector I Project. Chiefs of the various technical and administrative support divisions and regional directors are involved in implementation of the separate components. To facilitate implementation the Ministry has created a Project Coordination Unit (PCU) with a staff of nine persons. The PCU monitors all Project inputs and, taking reports from other offices, attempts to monitor activities. The PCU is supported entirely by Project loan funds.

The USAID has a full-time Project Manager. He is assisted by a two PSC administrative assistants. USAID also employs one person to monitor project implementation.

Management Sciences for Health: The major ongoing technical assistance contract for the Project is with Management Sciences for Health (MSH). Their team consists of a chief-of-party and between nine and ten full-time technical specialists. MSH also provides short-term consultants as needed by the Project.

Academy for Educational Development. The Academy for Educational Development (AED) originally provided technical assistance through an AID centrally-funded project to promote the use of oral rehydration therapy. That project began in 1979. Although the original contract has ended, the Project continues to fund technical assistance in the area of mass media.

The AED consultant reports directly to AID Project staff. In the area of vector control, the Project also funds a consultant under a Personal Services contract.

The MSH technical assistance staff works more closely on a day-to-day basis with the PCU, MOH counterparts, and AID staff. Representatives of these groups meet weekly to discuss problems encountered, changes in implementation plans, and other management and administration concerns. They meet again weekly with the Director General of Health, or his representative, and other MOH staff.

The technical assistance contractor in vector control has his office in the Vector Control Division headquarters, and works directly with staff there.

The AED consultant was housed in the MOH Health Education offices, and worked directly with MOH personnel.

Management Sciences for Health has offices across the street from the Ministry of Health. Its professional staff is assigned counterparts within the Ministry. One half-time MSH staff member, the family planning specialist, has her counterparts in the MCH division of the Ministry. Although other MSH technical staff have provided direct, ad hoc assistance to the normative health divisions, their formal counterparts include the heads of: (1) Science and Technology; (2) Human Resources; (3) Maintenance and Engineering; (4) Administrative Programs; (5) the Medical Supply Unit; (6) the Division of Transportation; (7) Planning; and (8) Computers.

## 2. Project Components

Components: The strategy is implemented in line with four major components: (1) health technologies; (2) logistics and maintenance; (3) management and planning; and (4) human resource development. These have been divided into 18 sub-components as follows\*:

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\*Numbers of components are those assigned in the Project Agreement. They are re-grouped here.

### **Health Technologies**

1. Malaria vector control
2. Rabies (dropped 1985)
3. Immunization Programs
4. Diarrheal disease control
5. Tuberculosis and acute respiratory infections (ARI added in 1985)
6. Sexually transmitted diseases (dropped)
7. Maternal/child health (family planning and breast feeding)
8. Epidemiology training
9. Nutrition (added 1985)

### **Logistics and Maintenance**

10. Logistics system, including basic medicine list.
11. Maintenance system

### **Management and Planning**

12. Reinforcement of management and planning
18. Operations research (added 1985)

### **Human Resource Development**

13. Mass media for village health workers
14. Teacher training (dropped)
15. Extension or supervision
16. Continuing education for village health workers (now included under #17)
17. Continuing education for MOH employees

**Priorities:** Although the overall planned strategic focus was, and continues to be, on development of management and support systems, the operational priorities have varied in response to obstacles, opportunities and emergent needs. This reflects on Project flexibility.

We can see, in a sense, AID areas of emphasis in the amounts of grant funds budgeted for technical assistance, including administrative support, management, and family planning and malaria control.

### **3. External Linkages**

The following Honduran organizations all have an influence on the HS-I Project to varying degrees. Project staff deal with policies and personnel from these organizations on a regular basis.

- **Ministry of Finance:** The Ministry of Finance participates in the review of all projects that involve external funds. It establishes fiscal mechanisms for operation, and must approve all procurements under such projects.

- CONSUPLANE: This agency approves budgets in the GOB. It also manages foreign scholarships.
- Proveduria General: This organization approves all purchases in excess of 5,000 lempiras.
- Procuraduria General: This office approves all contracts valued at more than 60,000 lempiras. It also handles contracts with firms constructing warehouses and workshops under this Project.
- Contraloria General: This office investigates and insures the integrity of all persons who handle government funds.
- Contaduria General: This agency verifies that correct procedures have been used by government organizations when purchasing equipment and real estate.
- Director General of Civil Service: This agency establishes standards for government positions and approves all new permanent government position.
- Directorate of Probidad Administrativa: This agency mainly has the responsibility of conducting background security investigations of all government personnel. It requires that those handling public funds be bonded at their own expense.

E. Reprogramming Changes over the Project Life

The original Project Agreement, signed July 31, 1980 called for a PACD of July 31, 1984, and on AID commitment of \$15,586,000. It addressed all the components listed earlier except Operations Resources (as a separate sub-component) and Nutrition. Also, Acute Respiratory Infections was not included under Tuberculosis control. Since then there has been one amendment to the Project Paper and fourteen amendments to the Project Agreement.

Amendments 1-4 concerned only funding tranches previously approved. Amendment No. 5 (January 1982) added training for logistics personnel and the development of guidelines and procedures linked to the construction of the six regional warehouses.

Amendments 7-11 provided additional AID tranches to a total of \$16,379,000 by EOPS. Amendment 11 extended the PACD to December 31, 1985, and the Project description was changed to reflect changes in Project direction based on experience during the first three years of implementation.

The Project goal and purpose remained the same. The scope of the Project was altered to include: (1) the establishment of an operational research capacity within the MOH; (2) the conduct of special studies related to new interventions for addressing chagas disease; (3) domestic drug production; and (4) a study of nutritional status. Reprogramming following the internal evaluation, and the recommendations of the 1983 Westinghouse evaluation resulted in the amendment to the Project Paper and a twelfth amendment to the Project Agreement.

In conjunction with the 1983 Westinghouse evaluation there was some reprogramming of Project components and activities. A Project Paper Amendment (No. 12) reflecting this was signed in February, 1985.

Amendment number 12 effectively terminated Rames, Sexually Transmitted Diseases and Teacher Training as Project components. The Basic Medicines List component activities became subsumed under Logistics; Acute Respiratory Infections was added to the Tuberculosis component; and Nutrition and Operations Research were added as independent components. The PACD was then extended to December 31, 1987, and the total amount of financial assistance to be available was increased to \$26,706,000 of which \$11,054,000 were grant funds and \$15,652,000 were loan funds.

Amendment number 13 of February 1986 increased grant funds obligated for family planning by \$1,105,000, without raising the total obligation.

The initial contract with MSH was to expire in July 1984. It was then extended and then rebid. MSH was awarded a second contract that was scheduled to expire in 1987. Additional funding has been obligated to support technical assistance through the PACD.

Amendment number 14 of July 1986 increases grant funds by \$4,044,000 and extends the PACD until June 30, 1988.

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## IV. PROJECT ACHIEVEMENTS

### A. Introduction

This section focuses on Project achievements in different areas and from a number of perspectives. First, we consider the "logframe" that was included in the scope of work for this evaluation. This is presented in Table IV-1. Questions about the completeness of the set of objectives identified by that logframe have been addressed in meeting with Project management staff. The logframe does not cover all activities, outputs and purposes of the Project that are indicated in various Project Documents.

Second, we deal with each Project component, covering broadly the achievements, continuing problems and extent of institutionalization reached by each.

In a third part, we focus on impact achieved by the Project in the areas of: population health; and population knowledge and behavior.

Finally, we consider the Project's achievements in the area of cost control and cost recovery.

### B. The Logframe in Use

The logframe is being used by USAID as a basis for monitoring the Project. It has undergone a number of revisions. It is changed on the basis of consultations with the PCU and technical assistance staff to reflect Project interests and data availability. It is also linked to the MOH's overall objectives that are expected to be supported by the Project. As such, it represents something of a compromise and employs a number of expedient, surrogate measures. As management and information systems improve, it is anticipated that the capacity to monitor Project accomplishments will improve.

In Table IV-1 following, we present the logframe with an assessment of achievement progress for the most recent dates for which data are available. For each indicator we note degree of achievement to the extent possible and provide further brief comment on the meaning or appropriateness of the indicator.

**FIGURE IV-1**

**LOGICAL FRAMEWORK ANALYSIS**

<b>Narrative Summary</b>	<b>Objectively Verifiable Indicators (Planned Attainment by End of Project)</b>	<b>Degree of Achievement (Most Recent Data Available)</b>	<b>Comment</b>
<b><u>GOAL:</u></b>			
<b>Improve the health status of the Honduran people</b>	<b>Decrease infant mortality to at least (sic) 70/1,000 live births by the year 1981.</b>	<b>Infant mortality is estimated at 71-85/1,000 for the year 1981 (FHI survey, preliminary, 1984). It has been indicated that infant mortality has been consistently declining for the past 20 years.</b>	<b>It is possible to achieve this goal. Estimates for 1987 will be difficult and may not be possible until 1990, using methods employed for previous estimates (FHI study 1984). A definitive measure of progress toward goal achievement in 1986 is not available. Many MCH and other GON activities as well as a variety of factors external to those and to this Project will influence the infant mortality rate.</b>

LOGICAL FRAMEWORK ANALYSIS

Narrative Summary	Objectively Verifiable Indicators (Planned Attainment by End of Project)	Degree of Achievement (Most Recent Data Available)	Comment
<b>PURPOSE:</b>			
Increase effectiveness, efficiency, coverage and use of the health care delivery system	1. "Number of cases of malaria detected will have declined to 20,000 in the year 1987."	29,332 reported in 1984 31,222 reported in 1985	<p>Given increased aggressiveness of case finding in the same population, this probably represents a real decline in incidence of malaria.</p> <p>Changes in case finding methods and aggressiveness will affect quantity of cases detected, rendering this measure insufficiently sensitive to Project impact.</p> <p>It would be more useful to measure Project output.</p> <p>Incidence should be determined using survey methods.</p>
	2. "The annual average of cases (of malaria) detected 1985-1987 will be less than 25,000."	AID reports an average of 32,030 cases detected for 1983-1985, down from an average of 40,782 for the 1980-1984 period.	<p>This indicator is subject to the same problems mentioned above.</p> <p>It would be better to use the malaria indices such as the IAZs, IIP, and IPA as indicators of program achievements. See Annex C.</p>

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**LOGICAL FRAMEWORK ANALYSIS**

**Narrative Summary**

**Objectively Verifiable Indicators  
(Planned Attainment by End of Project)**

**Degree of Achievement  
(Most Recent Data Available)**

**Comment**

3. "The number of cases of the following diseases will be no more than that indicated below in 1987:"

a) Whooping cough      390

b) Measles                      850

c) Polio                              4

d) Tetanus                          20

e) Diphtheria                      0

f) Tuberculosis                  2,100

Reported incidence of attended cases of 1985:

a) Whooping cough      335

b) Measles                      6,476

c) Polio                              4

d) Tetanus                          67

e) Diphtheria                      0

f) Tuberculosis                  2,274

a) Probably effective coverage. Target should be reached.

b) Epidemics are recurrent, indicating faulty coverage.

c) Probably a good measure indicating good control through high coverage of polio immunization.

d) Probably a low estimate of actual incidence to the population.

e) Probably close to true incidence.

f) This is a function of case finding aggressiveness, rather than a measure of population health status (incidence or prevalence).

4. "60% of the cases of diarrhea which occur in children under the age of five in 1987 will be treated according to NME norms."

FHI study of 1984 reports that 42% of cases about which they asked sought some sort of treatment.

Incidence data not routinely available from any existence source. Diarrhea in the home is not reported. In addition treatment data are not available. Use of litmus in the home is not reported. The number of packets distributed may be a better indicator.

LOGICAL FRAMEWORK ANALYSIS

Narrative Summary	Objectively Verifiable Indicators (Planned Attainment by End of Project)	Degree of Achievement (Most Recent Data Available)	Comment
5. "90% of the cases of diarrhea in children under the age of five which use the MNM health system will be treated according to the MNM norms in 1987."		155,896 attentions for an estimated 1,276,181 cases in 1984, or 12% coverage; 193,500 attentions in 1985.	Actual measurement of goal attainment is not possible. This would require quality of service monitoring, which is not in place.
6. 80% of identified active cases of tuberculosis are being treated in 1987.		FNI survey in 1984 found that 61.9% of 103 cases that were presented to the MNM, including guardians, received litrocol packets.	This is a distinct program success, since a decline in the loss to treatment rate should help reduce the incidence of tuberculosis.
7. "Annual incidence of tuberculosis increases to 5/100,000 in 1987. (sic).		The reported incidence of tuberculosis by MNM was 52/100,000 in 1985.	The reported achievement does not reflect true project progress. The desired rise in tuberculosis incidence was meant as a measure of increased case finding. A more appropriate measure of increased case finding would be the number of cases reported. A new tuberculosis information system is being developed. Data for incidence and health systems activity are expected to be reliable by 1987.

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**LOGICAL FRAMEWORK ANALYSIS**

Narrative Summary	Objectively Verifiable Indicators (Planned Attainment by End of Project)	Degree of Achievement (Most Recent Data Available)	Comment
8. "Achieve a level of 60,000 contraceptive users in MNH family planning programs by 1987."	<p>The AID project monitoring document reports 30,785 users in 1984. The USAID/Honduras Population Office uses the estimate of 18,000 MNH-supplied family planning users in 1/85.</p> <p>In the second quarter the USAID/Honduras Population Office estimated that there were 20,000 active users receiving supplies from MNH sources, but no hard data were available.</p>	<p>Observations of activities at CESARs indicate that health workers are not promoting aggressively. Because MNH auxiliary nurses have also distributed F.P. supplies as ASHONPLAYA community-based workers, survey respondents may be confused regarding the "source" of supplies. The information system is not yet adequate.</p> <p>The USAID Population Office has a target of 22,000 active, MNH-supplied users by the end of 1986.</p> <p>The target of 60,000 MNH-supplied users by 1987, for this project, appears unreachably.</p>	
9. "70% of CESARs reporting have 70% of the supplies needed for MNH health programs in the last six months of 1987."	<p>CESAR inventory monitoring procedures used by AID and MNH reported 46% of the CESARs had 70% of supplies in 1984.</p>	<p>This indicator needs revision because of problems of interpretation. It should state that CESARs should have 70% of basic medicines. The verification should be done by a sample survey or routine reporting.</p>	

**LOGICAL FRAMEWORK ANALYSIS**

<b>Narrative Summary</b>	<b>Objectively Verifiable Indicators (Planned Attainment by End of Project)</b>	<b>Degree of Achievement (Most Recent Data Available)</b>	<b>Comment</b>
	<p>10. "The weighted average unit cost of the drugs used in NON priority programs will be less in 1987 than in 1984 when adjusted for inflation."</p>	<p>The indicator, as initially stated, is virtually impossible to track on a consistent, year-to-year basis. The only analysis that was feasible was based on a substantial sample of all medicine bought by open bid, rather than on the medicines used especially in the priority programs, for the years of 1984 and 1986. To confound the measurement problem, there were differences in the procurement lists, as well as incomplete records which made it possible to compare only 142 products, 57% of the products ordered in 1986, and 58.5% of the value of that order. Given all of this, it was calculated that the weighted average unit cost of medicine was 19% lower in 1986 than in 1984. Nothing can be said about medicines used in NON priority programs.</p> <p>Some of the reasons for the lower prices are the following:</p> <ul style="list-style-type: none"> <li>o Bulk purchasing procedures, which is the major force;</li> <li>o A greater amount of supplies in the market; and</li> <li>o Greater competition among suppliers.</li> </ul>	<p>The price change is based on only 75% of all drugs ordered in 1986. The prices of drugs not considered vital, and, as thus, normally bought directly from abroad, have increased quite rapidly, at least 40% by some estimates.</p> <p>The bulk purchasing, encouraged through the project, has combined well with other factors to lower prices.</p>

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LOGICAL FRAMEWORK ANALYSIS

Narrative Summary	Objectively Verifiable Indicators (Planned Attainment by End of Project)	Degree of Achievement (Most Recent Data Available)	Comment
11. "Reports of nonfunctioning refrigerators will average less than 25% of the total number of refrigerators supposed to be functioning during each quarter of 1987."	MSH reports that more than 90% are functioning in 1986.	An information system is functioning for refrigerators involved in cold chain at health centers.	
12. "A reporting system similar to that for refrigerators, with similar results, exists for at least five other apparatus important to MSH priority programs."	Consideration is being given to monitoring incubators, stoves, microscopes and sterilizers. A monitoring system for four wheel vehicles is being established.	Existing staff cannot handle maintenance of all this additional equipment. Replacement parts are new, and probably will not be available.	
13. "Cost per patient treated, when adjusted for inflation, declines between 1980 and 1987 in hospitals and health centers."	The unit cost of service for CESARs and CESANOs combined has fallen approximately 12% between 1980 and 1985, in real terms, according to MSH study in 1986 (preliminary). The unit cost of these services has risen steadily in real terms, since 1982; about 19%.	Should look for a consistent decline from year to year over the period, not just the difference between two years. The year-to-year declines should be above some minimum target level to assure that declines are not trivial.	
14. "The unit cost, adjusted for inflation, of key MSH services shows a decrease in 1987 from pre-1984 levels. (Specific services to be identified)."	<u>Outpatient Care:</u> Real, direct costs have risen approximately 3.6% between 1976 and 1985, according to an MSH study in 1986 (preliminary).	Very limited data for hospital outpatient care: eight hospitals, and only 4) out of 60 hospitals-months in 1985 and only four hospitals for 1976. It would be much more appropriate to look for a consistent improvement on a year-to-year basis, not just a change between two years. However, the data are currently unavailable.	
		In the case of CESARs and CESANOs, see number 11 above.	

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LOGICAL FRAMEWORK ANALYSIS

Narrative Summary	Objectively Verifiable Indicators (Planned Attainment by End of Project)	Degree of Achievement (Most Recent Data Available)	Comment
	15. "100% of regions and priority plan programs their supervision visits by February of each year."	Programming is irregular.	Supervision visits are formally carried out only from the area level to the health center level.
	16. "80% of planned supervision visits are carried out."	Data not available at either central or regional level.	Supervision is constrained by transportation and funding problems. It is not a high operational priority. Supervision is still often viewed as a policing activity.
	17. "The target population has changed knowledge and actions according to the content of educational messages"	Stanford/ACT studies have shown significant increases in awareness and improved practices with respect to diarrhea control and immunization.	The capacity to manage mass media programs for health has been remarkably institutionalized due to project inputs. Limited availability of materials and supplies constrains the maximization of staff capability at the regional level.
		MOM statistics show increases in attending diarrhea at its facilities between 1984 and 1985; indicating a probable increase in rate of use/incidence.	
	18. "80% of auxiliary nurses working in CESARs have received training in four of the seven priority programs by FACD."	Data not available.	An information system is being designed in 1986. It appears that training schedules have been very ambitious.
	19. "80% of the auxiliary nurses working in CESARs have received training in three of the following support systems: logistics, maintenance, local programming, and supervision."	AID monitoring document through June 1985 reports: Supplies 66.28 Maintenance 58.28 Supervision 156.28 Local Programming 27.18	The MOM reporting system does not differentiate between training and retraining or training of different types within a category. Consequently, percentage estimates may be misleading. Scheduled implementation of a new reporting system will improve information.

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**LOGICAL FRAMEWORK ANALYSIS**

<b>Narrative Summary</b>	<b>Objectively Verifiable Indicators (Planned Attainment by End of Project)</b>	<b>Degree of Achievement (Most Recent Data Available)</b>	<b>Comment</b>
<p>20. "50% of operations research studies will have an effect on NSM decision-making."</p>	<p>Nine studies have been planned, four reports have been prepared.</p>	<p>An O.R. unit was organized two years ago. One staff member is studying abroad. There has been no tracking of influence on decision making. Topics of investigation appear relevant, but sometimes ambitious.</p>	
			<p>Requests for O.R. studies originate from normative divisions. The D.G. appoints an ad hoc committee to review the need for an O.R. study. Based on the committee recommendations the D.G. orders the O.R. Division to develop study protocols, which is done with the NSM technical advisor. Results of the studies are provided to the NSM decision makers.</p>

C. Component Achievements

It is worth noting again that this Project is complex and involves systemic interdependence among the components. That is, a breakdown in one component's implementation progress can affect achievements of other components. This means that components cannot ultimately be viewed in complete isolation. For this reason, we deal with achievements more broadly in subsequent parts.

Component No. 1: Malaria Vector Control

Achievements: The malaria vector control program has been using more cost-effective methods. They have changed from complete coverage wall spraying to perifocal spraying and larval control in areas of high malaria incidence. They are also re-analyzing vector habits in order to improve the cost-effectiveness of methods employed.

The vector control division has established an engineering unit to focus on drainage. Local entomological assistants have been trained and are conducting vector density sampling to monitor effectiveness.

Special studies to determine the potential for dengue transmission in Tegucigalpa, the distribution of Chagas vectors and sites of malaria transmission are currently underway.

Case finding has been increasingly aggressive over the past six years. In 1980 there were 175,623 slides checked, with 43,010 positive cases. In 1985 they collected 410,720 slides of which 33,828 were positive. Program staff report that the populations and geographic areas from which samples were being taken are the same or similar for the two years. This means that malaria disease incidence has probably declined. They have also improved turnaround time on sample checking and inform patients of the results more promptly.

The number of trained volunteer collaborators increased from 695 in 1979 to 5,600 in 1985.

Problems: Numerous logistical problems have held up progress toward achieving objectives in the vector control program. Microscopists are poorly

distributed and appear not to be movable within the MOH system. Drugs for malaria treatment are often not available at health posts in high prevalence areas. During 1984-85 there was a lack of insecticides for house spraying which inhibited this activity.

Lack of repair capability for microscopes and other equipment hampers the improvement of laboratory facilities. Vehicle breakdowns and lack of equipment also hamper spraying and drainage activities.

Institutionalization: Earlier attempts (1970s) to integrate malaria control into other MOH services failed. Case detection fell precipitously and collaborators dropped out at a high rate. There was clear evidence that the incidence of malaria climbed dramatically.

The program has been re-established as a vertical program. Nearly 5,000 collaborators have been added and a supervision system is in place and apparently improving. More efficient means of vector control will result in a more supportable system.

There is, however, integration with other activities at the case detection and treatment levels. Steps are being taken to reinforce this type of integration.

Still, it is clear that the only way to sustain the vector control operation now and for the foreseeable future is to have a vertical system with continuing external support.

#### Component No. 2: Rabies

This component was dropped from the Project in the 1983-84 reprogramming. The major reason for its elimination was that the Project had fulfilled its planned objectives for this component. During the period that rabies control was a component, one rabies control seminar was held for 26 persons and some equipment and training materials were purchased.

#### Component No. 3: Immunization

Achievements: The Project has supported the MOH immunization program (PAI) through the provision of equipment, supplies and training in immunization and

cold chain operation, per diems, norms, and out-of-country training. Under the maintenance component, it has given considerable attention to ensuring the effectiveness of the cold chain.

Improvement in availability of immunization supplies and improvement of refrigerator maintenance represent major successes of the Project.

It appears also that vaccination coverage has grown considerably during the time the Project has been in effect. It is difficult to determine precisely how much of this is due directly to Project inputs.

Control of whooping cough, polio, tetanus and diphtheria in 1985 had already exceeded Project goals. Epidemics of measles, however, re-emerged in 1985. As a result, the MOH has been reassessing its immunization strategy and trying to identify problems in the cold chain.

MOH staff and technical assistance personnel have been assessing the cost-effectiveness of different balances of campaigns and routine vaccinations.

The ability of the MOH to respond to serious health problems was tested in 1984 when an outbreak of polio was identified. An ad hoc vaccination campaign was mounted promptly and the epidemic stemmed. The thinness of material and human resources was evident when this was done. Much other work of the Ministry and of the Project had to be postponed because of the drain on those resources.

Problems: The cold chain still presents problems although it has been substantially improved under the Project. There are still frequent problems due to a lack of availability of spare parts and an inability of isolated health center workers to make emergency local purchases of fuel.

The information on immunization coverage is inadequate for making proper assessments of needs. The lack of accurate population denominators renders coverage estimates dubious.

Institutionalization: The MOH has institutionalized an immunization capacity which provides a significant amount of support to immunization and ancillary activities. These are high priorities for several divisions of the Ministry.

Component No. 4: Diarrhea Control

Achievements: Oral rehydration therapy has been accepted by the Honduran MOH since the 1970s. Promotional and educational programs were conducted on a small scale in 1980 and 1981. That was expanded in 1982 and 1983 when the MOH established diarrheal disease control as a priority program in 1982. Outside donors, especially the Italians, UNICEF and the United States have either maintained or increased their support over the past four years as MOH funds have been stagnant.

The MOH Diarrheal Disease Control Program has four major components: (1) case treatment; (2) mass education; (3) promotion of breastfeeding; and (4) promotion of environmental health. All these have been included in the training and mass education programs.

Following the public education campaigns, it was found that virtually all families know that ORS (LITROSOL) is an appropriate treatment for diarrhea and that they are aware that diarrhea is a serious problem to be treated promptly.

Since 1983 approximately three million additional ORS packets have been made available annually through the health system. This is considered more than sufficient to meet the demand.

By late 1985, the MOH had trained 2,000 employees in ORT. They estimated that 75 percent of MOH workers currently involved in providing care had received training. Because of the continuing turnover of personnel, they are trying to maintain ORT training permanently.

Among the most positive features of the diarrheal disease control program, from a management perspective, are the continuing self evaluations that are part of the supervision and programming in the health regions.

A social marketing study was recently completed and the MOH is in the process of analyzing the study's recommendations with a clear intent of implementing a social marketing program.

Problems: The evaluations have revealed continuing problems of inadequate knowledge of ORT, and improper treatment on the parts of physicians and nurses working in the regions. They have also noted the lack of involvement of social workers and other personnel in the program. In at least three regions, the MOH has noted that private physicians often do not prescribe ORT for their patients.

The program information system has proved cumbersome. Consequently, data are incomplete at all service levels.

The AID/MSH monitoring system reported that ninety percent of the CESARs had not had stockouts. The MOH supervision system, however, reports continuing problems with shortage of salts at all levels and frequent stockouts at the community level. Shortages refer to quantities on hand that were less than what is considered sufficient.

Programming of activities by those in charge of diarrheal disease control at the central and regional offices is detailed and well scheduled with respect to the needs. Supervisory and other follow-through, however, is very problematic. Transportation, per diem approval and manpower all present obstacles. Central level personnel report difficulty in conducting visits and note that supervision from regions and areas is weak.

The MOH has been unsuccessful in getting the medical school and nursing schools to include ORT as a component in their formal training programs. Nor has there been much progress in getting pharmacies and other commercial establishments to stock oral rehydration salts.

Gathering information useful for reprogramming and improving effectiveness is seen as a critical need along with improved supervision. Although program personnel believe that they have had a positive effect on severity of diarrhea

they have no way of measuring it directly and no way of knowing which areas need greater attention. They have noted, however, that cases of severe dehydration still occurs at health facilities in all regions.

Institutionalization: Oral rehydration therapy in the treatment of diarrhea is accepted by both the population of Honduras and the MOH. The professional medical establishment apart from the Ministry, however, is slower to accept it both as a component of professional training and as an appropriate therapy to be used in private practice. We can say then that it is an institutionalized priority of the MOH, but it must continue to receive extra attention and support if it is to be fully accepted by all health practitioners and if it is to have maximum effectiveness.

Component No. 5: Tuberculosis

Achievements: The tuberculosis component, as described in the Project Agreement (Amendment No. 12) covers only training and vehicle and equipment support. Following the initiative of the Program Director, however, considerable technical assistance has focussed on the development of program management, especially in the design of an information system scheduled for implementation this year.

In conjunction with the design of the information system, program staff have rationalized the design operation and begun to focus more clearly on what they want to accomplish while incorporating means to monitor those accomplishments. They are focusing on case detection, initiation of treatment and treatment follow-up.

The program reports that case detection and treatment are progressing well in some areas. Loss to follow-up has also improved.

Problems: Despite these improvements, it is reported that the lack of availability of medicines at health centers has resulted in a failure to treat identified cases. There also exists a lack of follow through on those who begin treatment.

Turnaround on sputum evaluations is slow and treatment does not begin until laboratory confirmation is received. This results in "loss to treatment." Another problem, identified by program staff and verified during field observation, is that auxiliary nurses are reluctant to take proper samples. They find it distasteful to handle sputum of suspected cases.

Institutionalization: The tuberculosis program within the Ministry appears to be truly institutionalized, but in need of continued support. That support should cover implementation of the information system, more intensive supervision to ensure institutionalization and compliance at all service levels, and continuing education for MOH personnel.

#### Component No. 6: Sexually Transmitted Diseases

This component was dropped in the 1983-84 reprogramming of the Project. As in the case of rabies, the major reason for its elimination was that the Project had fulfilled its planned objectives for this component.

#### Component No. 7: Maternal and Child Health/Family Planning

Achievements: The Maternal and Child Health and Family Planning component of the Project focuses largely on family planning. A lesser operational aspect is the promotion of breastfeeding and education regarding appropriate feeding supplements and weaning. The program is integrated with other service delivery at all levels.

Through this Project and via other USAID-funded sources, two contraceptive prevalence surveys have been conducted. A third is scheduled for 1987.

The previous studies have shown that there is considerable unmet demand for FP services. The new FP push of the MOH is relatively recent with activity rapidly increasing in only the past several months. Assessment of coverage and coverage potential is not yet possible.

The MOH has established a revised set of formal family planning service norms, which reduces restrictions on care providers and liberalizes criteria for

method used by patients. It has also created two new positions for family planning specialists within the Normative Division of Maternal and Child Health. Breastfeeding service norms have also been established.

There are 143 nurse auxiliaries (13% of the 1,110 working in health centers) who have been trained in this program through the end of 1985. No parteras or other community health workers had received training in family planning by the end of 1985. We observed human reproduction training for parteras in one health post. This is probably common.

Family planning has been established as a supervisory priority in the health areas. This should have a positive effect on worker motivation and knowledge, as well as on inventory maintenance.

Problems: Contraceptives appear to be available within the country, but are unevenly distributed among health treatment centers and health workers. The information system is not sensitive to stockout monitoring but observations indicate that supplies were very low at many health posts.

Training progress has been slow. Lack of training material has inhibited the effectiveness of training. Officials have indicated concern for this. The MOH is currently preparing modular self-training materials and at the same time, conducting follow-up studies with health workers to determine their deficiencies with respect to the MCH/FP norms. Observation of workers at health centers suggested that their motivation to promote family planning was low.

Measurement of FP coverage by the MOH programs is unclear. The Contraceptive Prevalence Survey (CPS) of 1984 (preliminary) estimated that approximately 15 percent of women currently in union in Honduras were using methods supplied by MOH personnel. Because MOH health workers and volunteers often work as community-based distributors for ASHONPLAFA, a private sector agency that provides methods, respondents may be confused regarding their sources. As a result they attribute the source to MOH when it is, in fact, ASHONPLAFA that is providing the methods. The Ministry has not instituted an information system that can provide adequate data in this area.

Although the central level staff for family planning have been hired, and formal policies and norms established, it is not clear that FP has been institutionalized as an MOH service. Without continued external support it is doubtful that the MOH would have sufficient resources to support family planning services.

#### Component No. 8: Epidemiological Training

Short courses abroad in epidemiology were scheduled to be supported under the first phase of HS-I. It was later agreed that the Ministry itself could handle the upgrading of epidemiological staff. AID support for this component was combined within the continuing education sub-component in the reprogramming of 1983-84. Although not currently utilized, this type of training is still available.

#### Component No. 9: Basic Medicine List

The idea behind the development of a "Basic Medicine List" was to standardize drug stocks in all elements of the Honduran system in order to facilitate more efficient procurement, inventory and supply procedures. It was expected that improvement of these procedures would result in an overall cost savings because a higher portion of drugs would be purchased in bulk. Without standardization, ad hoc smaller purchases from local commercial outlets had been frequent. The list, begun by the Drug Office of the Hospital Division, was supported by the IDB. Under the present project, the MOH in 1982 created a special commission, the Comisión Nacional de Medicamentos (CONAME), and assigned it responsibility for, among other things, completing the list and keeping it current.

The operations and goals of this component were effectively moved under the logistics component with the creation of CONAME. This was made formal in the Project Paper Amendment of 1984 and the Project Agreement No. 12 of February, 1985.

#### Component No. 10: Logistics

Achievements: The logistics component comprises a series of interrelated activities including: acquisition of medicines, equipment, consumable supplies,

and replacement parts; storage of all types of supplies; distribution of supplies to the ultimate users; and a management system that links these.

The critical nature of the logistical system was recognized in both the design of this Project and the Ministry's priority setting. AID provided substantial support for logistics and the Ministry has devoted considerable attention to the logistic component, logging very substantial achievements in this effort. Still, problems persist.

The following are the more significant achievements.

- A primary achievement was the formation of the National Commission of Medications (CONAME) within the Ministry of Health. CONAME has systematized the entire logistical system as it applies to medicines. The central achievement of CONAME was the development of a basic medicines formulary comprised of a set of sub-components: a supply catalog; a basic medicine list; a register of supplier; and quality control norms.
- Within CONAME, a pharmaceutical unit was formed. This unit developed the central formulary and a control system for the purchase of medicines. It requires that purchases of medicines not on the basic list be specially justified and requires that orders be processed through the central warehouse to determine availability.
- The Ministry has moved to a competitive bidding approach for bulk purchases which, combined with other exogenous factors, has resulted in savings of up to 15 percent. At present, 86 percent of purchases are made through competitive bidding.
- The bulk purchasing system rests upon a purchasing system that includes programming annual purchasing levels, preparation and issuance of bids, selection of providers, and acceptance of purchases.
- The supply system was unified through implementation of "The National Supply Subsystem Manual", which covers planning, acquisition, storage, distribution, control and evaluation.
- Implementation training has been provided to a broad range of personnel ranging from central staff, to hospital staff, and down to CESAR and CESAMO staff.
- A follow-up study identified continuing training problems and resulted in the development of a supervision guide for the supply system.
- One of the indirect benefits of the Project has been to stimulate problem solving over a wide range of activities. In the logistics area, one problem the country faces is the high cost of imported medicines. The government has created a commission to monitor imports.
- A proposed system to control donated receipt of medications has been drafted and sent to policy levels for review and action.

Problems: The Ministry of Health sends its purchase order for the coming year in August, anticipating that medicines will arrive by January. The GOH supply agency, however, cannot initiate purchases until Congress approves the budget, which takes place sometime in December. Other problems include the following:

- Understaffing and appointments of untrained persons continues to create difficulties.
- The existing regional supply warehouses are inadequate to support the health logistics system. It is questionable that all those programmed for completion under this Project will be completed.

Institutionalization: Not only has CONAME been integrated into the Ministry, but it has developed the organizational capacity to recognize continuing problems and to take steps to resolve them. The establishment and functioning of CONAME is evidence of institutionalization of a logistical management capacity.

#### Component No. 10A: Transportation

Although the Project does not formally include a separate transportation component, it has included a very substantial de facto transportation component designed to support basic program operations and other Project support components. This has followed the recognition in Project documents of urgent transportation needs.

Achievements: The Transportation Unit is staffed by a chief, an administrator and 29 technicians. The central vehicle maintenance facility is expected to provide all major maintenance for the entire Ministry fleet as well as the minor repairs required in the Tegucigalpa area. A modern central maintenance facility was built using AID funds. It is expected to be operational by August of this year. Other important achievements include the following:

- The utilization of temporary regional vehicle workshops as an interim measure until programmed workshops are constructed. All but one are now operational.
- The Project provided each region with one mechanic. These positions have been permanently integrated into the Ministry budget. The mechanics at the II level have all completed formal training qualifying them to perform routine repairs.

- The transportation unit has developed norms relating to administration, reporting, and supervision. It operates with a detailed workplan based upon the Ministry's annual action plan. This is an important step toward institutionalizing this activity, and indicative of another important achievement, namely the organized search for solutions to problems.
- The first national vehicle inventory was completed and computerized. This was a first step in identifying the scope of the transportation component's activities and problems.
- The management information system also represents progress toward institutionalization of Project achievements within the Ministry. The technical assistance contractor is playing a vital role in the development of this information system.
- A systematic planning system for identifying and supplying spare parts and tools has been produced. This plan represents a necessary first step in solving two problems facing the transportation unit.
- A driver training manual and operator's manual were prepared. Approximately two hundred drivers have been given a four-day course in operation, care and preventive maintenance of vehicles. A daily checklist is kept by the drivers as part of the control system for vehicles.
- An improved fuel supply system has been planned to replace the relatively unstructured purchasing methods in use involving private suppliers.

Problems: The lack of available administrative and management resources is the most pressing problem the Transportation Unit faces. The Transportation Unit does not have sufficient administrative control over its activities.

The construction of regional workshops continues to run into obstacles.

Although important improvements have been made in reducing vehicle down-time, a large portion of Ministry vehicles remain out of service for extended periods. Some serviceable vehicles are permanently lost due to deterioration while waiting for repairs. There are three contributing factors to the excessive vehicle down-time:

- The chronic unavailability of spare parts;
- In all regions but one there is no formal transportation management component; and
- Regional vehicle maintenance personnel cannot handle the volume of work pressed on them.

Institutionalization: The difficulties listed above reflect an inadequate priority given to transportation. Although considerable progress has been made in institutionalizing transportation, there still needs to be more attention paid to this component.

Component 11: Maintenance

Achievements: In 1980 maintenance for all MOH facilities and equipment was the responsibility of a sub-department of the Division of Hospitals. Maintenance has since been elevated to divisional status, reporting directly to the Director General.

A modern, well equipped vehicle maintenance facility, financed with Project funds is being constructed in Tegucigalpa. It is expected to be operational in late 1986.

The cold chain is one of the primary successes of the entire Project. Norms and procedures were developed, and technicians were hired and trained in each region. One thousand primary care providers (auxiliary nurses) working in the CESAR and CESAMO level were trained in how to care for kerosene refrigerators. Refresher training was made part of monthly area supervision meetings. Fuel and parts supply systems were improved. An efficient cold chain reporting system was implemented. As a result, efficient functioning of the cold chain has improved dramatically from 1982 levels. In 1983, 74 percent of refrigerators in CESARs and CESAMOs were functioning, while by 1985 the level of refrigerators functioning at least at a minimal level had risen to 95 percent.

Maintenance systems have been partially developed for microscopes and incubators. Manuals and training courses have been developed for these two types of equipment. About 200 users of the equipment have been trained in program norms.

Problems: The above successes have been achieved in the face of constraints on the program. The most significant continuing problems flow from low operational priority to most maintenance components.

The high priority given to cold chain maintenance has meant that maintenance of other types of equipment has not received enough attention. Insufficient resources are available to the maintenance division to implement quality maintenance systems for other types of equipment. Recent requests for additional professional and technical personnel have been denied.

There are insufficient numbers of adequately trained maintenance personnel at the regional level to meet all equipment and building repair needs. This problem has been recognized by the maintenance division. Budgetary requests have been made for additional personnel to meet these needs, but have been denied.

A 1983 maintenance evaluation stated that "... the primary factor determining maintenance capabilities is the administrative capacities of the Regional coordinator...." Only one region has a trained maintenance supervisor in charge of all regional maintenance efforts.

The entire maintenance program has chronic problems in obtaining repair parts. Given the GOH dependence on donated equipment from a vast number of manufacturers in various countries it is questionable that an adequate parts inventory can be maintained. Often serviceable equipment deteriorates while waiting for parts and is never repaired.

There is no organized, systematic building maintenance program for primary care facilities in the Ministry. Preventive and minor maintenance is not routinely carried out. As buildings deteriorate, major maintenance is postponed, often until it is not economical to repair facilities.

Institutionalization: Maintenance capacity is strained in keeping up with a small portion of maintenance concerns. Without sustained outside assistance even the cold chain maintenance program could probably not be sustained. The MOH does not have personnel, facilities and equipment to translate theoretical priorities into operations.

Component No. 12: Management and Planning

During the 1970s the portion of the GOH budget assigned to the Ministry of Health grew from four to 12 percent. Almost all of these added funds were used to support construction and service delivery. Few resources were assigned to improve management systems. As a result, the burden of management needs was increasingly overwhelming. The management and planning component of this Project was designed to address this problem.

Achievements: During the first implementation phase of the Project the Director General's span of control was reduced from 30 to 12 offices. In 1985, this organization was changed back to something approximating more closely the 1980 structure, increasing again the number of persons reporting directly to the Director General. This was done to consolidate control of administration and operational functions as well as strengthen political control during the election year. The organizational structure under the Director General has not been substantially changed during 1986.

In order to reduce the programming and planning demand on central management and administration, the MOH developed a model for "Local Programming." This involved an attempt to rationalize the planning at regional levels. To date this has been partially implemented in three areas, although with limited success.

Management development, a focal area of reinforcement of management and planning, has involved specialized training courses for approximately 100 key management persons. It is estimated that 70 of these are still employed within the MOH but most have changed positions.

During the first phase of HS-I special studies were conducted under the Management and Planning Component. With the Project Paper Amendment of 1984, and the subsequent Project Agreement No. 12, however, a separate Operations Research Component was included and a special unit created within the Ministry of Health. The Operations Research activities and accomplishments will be discussed later in this report.

Problems: The restructuring of the Director General's office within the MOH represents a serious regression in that it reduces the management responsibility of others within the Ministry. The increased span of control of the Director General associated with the reorganization in 1985 continues to produce overwhelming demands on the office.

This combined with the turnover of Ministry personnel and responses to the political context beyond the MOH operations, provide persistent threats to good management.

The establishment of a useful management information system is, and will be, a continuing problem. Much is expected from this element but it is little understood by either those primarily responsible for its creation and by management personnel it is intended to serve. Instead of creating any true systems of information the emphasis has been on processing that which is available. It has not been able to focus on limited areas of concern and to follow through. This is to say, it has not been able to set and maintain priorities. As a result the Unicomputo (the computer unit of the MOH) focuses on a broad array of concerns and responds to many emergent requests without establishing any good operational system so that can be used as a model.

Institutionalization: A recognized need for improved management support and continuous attention has been institutionalized. The capacity of the MOH to follow through on these, however, is severely limited. We observe only now the beginning of enhanced management capacity. In the cases of Operations Research and a management information system, positions have been created and personnel hired but they are still in the formative stages of development and unable to stand alone.

The training of key personnel in the basics of management has created a common language and a useful perspective but the constant movement of these persons inhibits the institutionalization process.

Management training has also been incorporated into many other training activities for health workers throughout the MOH system. The elements of resource planning and decision making are provided to health services workers as well as those who are more formally identified as managers, in recognition of the real distribution of management functions.

Component No. 13: Mass Media for Village Health Workers

Achievements: This component was separately evaluated in 1985. The use of mass media as an educational tool is a relatively new MOH activity. It began in 1980 with a successful pilot project introducing oral rehydration therapy to reduce infant deaths due to diarrhea. It currently is expanded to provide support to other MOH priority programs including malaria, family planning, immunizations and tuberculosis. The educational methodology has been thoroughly field-tested. Radio is used extensively because of its outreach capability and it is complemented by printed materials, including training and promotional items.

The Health Education Division is staffed by 12 technical and professional persons. The Division is comprised of four units: the production unit; the investigation unit; the information unit; and the operations unit affecting regional and local educational campaigns.

The Division interacts with the central MOH divisions with priority programs on a service-to-client basis. At the regional level operations are directed through Regional Health Education Coordination Committees, chaired by Regional Coordinators trained in mass media and educational campaigns. Each is done with the theme lasting approximately three months.

Currently the regional committees do not have funds in their budget to support local health education activities.

Health education campaigns, although relatively expensive, are a necessary measure not only to encourage the Honduran public to avail themselves of health services, but more importantly, to improve health practices in the home and work environment. The techniques and strategies developed during 1980-1984 are effective and should be continued.

Problems: Health education is highly centralized in terms of media production and distribution. Insufficient efforts are made to provide assistance to regional coordinators in terms of training, budget and materials. Not enough consideration is given to recognition and support of community health workers.

Institutionalization: The Health Education Division is permanently staffed and is utilized by MOH priority programs. Due to the heavy cost of radio and visual material production now provided by the Project, it is unlikely that the MOH could continue at the same level if the Project withdrew support. It is evident, however, that the MOH recognizes the value of this activity.

Component No. 15: Extension of Supervision

Achievements: The MOH supervision model was revised in 1983. Immediately thereafter all MOH employees were trained in supervision. According to PCU records, 227 courses were offered and a total of 3,160 employees participated in the training over the past three years.

Supervision is fully operational at the area-to-health center to community level, although the degree of intensity varies among regions and most original reporting formats have undergone local adaptation. The process is in place and functioning well at the operational level.

Most of the regions developed their 1986 training plans based upon the information noted in the supervision reports. Also, many regional management teams are starting to rely on supervision findings to set local priorities and needs.

Supervision activities have progressively shown improvement from the initial policing actions to a more individualized, one-on-one educational approach.

Problems: Records are maintained primarily to substantiate budget expenditures. Thus, the data does not yield information to determine whether the reported 3,160 employees were newly trained, or if it also included those who received training repeatedly.

The lack of operational guides and reporting forms impede the implementation of the supervision system in the remaining two major program levels. After three years of development efforts, the guides and forms are still in draft form.

As long as supervision activities are not conducted at the other two major program levels (center to regional and regional to area), information derived from supervision reports will be limited to determining local priorities and needs.

The primary constraints to conducting on-site, one-on-one supervision activities are the lack of adequate transportation, delays in reimbursement of per diem, and the high rate of staff turnover.

Institutionalization: The great majority of MOH personnel appear to have been trained in supervision. Much of this effort is non-productive, however, due to several factors. One factor is that the training in supervision is not applied at all program levels. Another factor is the high rate of staff turnover.

Adherence to scheduled activities and supervision norms attest to the fact that the process is institutionalized at the area to health center to community level.

With the progressive reliance placed on information derived from supervision reports for establishing priorities, there is a clear indication that this planning element is institutionalized at the local level.

The educational approach currently in use should be sustained at the target level as long as supervision activities can be conducted with available resources, and within appropriate time frames. Management of those resources must, however, be improved.

Component No. 17: Continuing Education for MOH Employees

Achievements: Training of MOH health workers has been both intensive and comprehensive. According to AID's monitoring reports at the end of 1985, the following coverage ratios existed for the training of auxiliary nurses: 84

percent had received training in acute respiratory infections; 32 percent in malaria; 75 percent in tuberculosis; 73 percent in family planning/breastfeeding; 73 percent in immunization; and 84 percent in diarrheal control.

Of the projected 80 percent of auxiliary nurses working in CESARs to receive training in three of the supported systems, the following coverage existed at the end of 1985: 91 percent in Logistics; 42 percent in Local Programming; and 41 percent in Supervision. (It is to be noted that several of these percentages are higher than those reported by the normative divisions of the MOH. It has not been possible to reconcile the differences with the data available).

Training uses a teamwork approach. Central MOH personnel train counterparts as trainers at the regional and area levels. They, in turn, provide the bulk of the training to institutional personnel. They also may provide training to auxiliary nurses and promoters who, in their turn, will echo that training to community workers.

A systematic approach to the formulation of the 1986 training plans was employed by most of the regions. Skill and work performance deficiencies noted on supervision reports were used for determining training needs.

The development and incorporation of the self-instruction modules in the priority programs and support functions complement and enhance current in-service training efforts. The major advantages to such an approach are that: (1) there is no absence from the work site; (2) individuals learn at their own pace; and (3) the cost is minimal.

The development of instructional guides for the training of community workers is an added dimension to the training component. The guides for training midwives have been developed and implemented. They have been well received, thus greatly facilitating training delivery.

The quarterly, continuing education magazine, "Salud Para Todos," for the MOH staff has been well-received. It contains current health information of interest, including results of local research efforts.

A National Information and Documentation Center has been established. The center has designed and installed a health information dissemination program which provides linkage among the health regions, the MOH, UNAH's Medical Library, and other medical resources. The system's primary function is to circulate documents to the regional levels.

Problems: The information cited above on percentage of training coverage is presented at face value. Lack of data on training impedes any meaningful verification and analysis of what has been done and of what is needed. It is assumed that the percentages reported for each program area reflect a base of 1,011 auxiliary nurses. Also, two other factors that may not have been accounted for in arriving at the cited percentages are: (1) excessively high staff turnover; and (2) repeats or retraining.

Except for training schedules and a recently introduced kardex system covering training participants (in some regions), there is no training information system. There was no evidence of documentation of training information. In short, there is no way to monitor the training coverage, either at the regional or central level.

The continuing education coordinators in the regions, in addition to organizing and conducting training, also produce staff health bulletins and develop graphic materials to complement training presentation and radio health programs. Lack of reproduction and drafting equipment make these excessively difficult tasks. The finished product suffers as a result.

Current training schedules appear overly ambitious. In one region visited by the team, 70 training events had been planned for 1986. Due to fund disbursement problems, however, no Project-sponsored activities have been conducted through June of this year. Although the problem is especially severe in 1986, it has existed to some extent for each year of the Project. This problem should be addressed with reduced scheduling of training courses.

Efforts to establish clearer training priorities should also be considered. The problem is exacerbated by the fact that a functioning worker/training information system has not been established.

Although student reports indicate satisfaction with training quality, little formal evaluation of training materials has been conducted.

The self-instruction modules, covering MOH priority programs could be an efficient and effective training method. Supervisors support and follow-up, however, cannot now be expected to sustain this type of educational program. Additionally, no incentives are planned to encourage the workers.

The Central Information Center is located in a room that is currently adequate, but allows for little expansion. The regions find it difficult to find space to have their information center.

Institutionalization: Training is recognized as an on-going need of high priority. The establishment of permanent positions for additional persons at the central and regional offices reflects on the Government's willingness to support training activities.

It is clear that under this Project support has been used to train staff, develop a large corps of experienced trainers, and produce training materials.

The lack of an adequate personnel information system that can be used to monitor training outputs and to assess training needs, the repeated production of over ambitious schedules, and the neglect of training (and trainers) effectiveness evaluations, raises questions about the institutionalization of training management and planning capacity.

#### Component No. 18: Operations Research

Achievements: The purpose of the Operations Research component is to produce studies relevant to the conduct of the MOH's priority health programs. This was not a subcomponent of the Project initially, but was simply an element of the IA scope of work. In 1983, a sizable sum was allocated to operations research. As such, it became a de facto component.

In 1983 the MSH contract was amended to add one part-time long-term adviser in operations research. A new office, the Science and Technology Unit, was created within the MOH. Money was then taken from the Tuberculosis and the MCH components and allocated to OR. The new unit was given the responsibility of managing various, although unspecified, studies.

The Project Paper Amendment of August 1984, and the Project Agreement of the same month, formally established OR as a Project component. Since then it has taken responsibility for managing nine separate research activities. The range has been from national surveys of MCH and contraceptive prevalence to a narrowly focussed study of traditional midwives in one region. Another national health and family planning study is planned for late 1986 or early 1987. As of June 1986 seven studies are either planned or underway.

Problems: The staff of the Science and Technology Unit has had limited experience in planning and conducting research. Three people were sent abroad for training in biostatistics and survey research. One is currently in training, while the other two have not returned to work for the MOH. The capability of the Science and Technology Unit remains limited.

The majority of the studies carried out under this component have not been conducted directly by MOH staff, although they have participated in all phases to some extent. The primary technical assistance group and various outside organizations have handled the planning, design and processing for the one major study. This was necessary given the complexity of the studies and the limited resources of the MOH.

The ambitiousness of the research studies planned and undertaken under the rubric of operations research is probably the most serious problem in attempting to establish a competent operations research unit. The magnitude and complexity of the studies, and the fact that most of the work is conducted apart from Science and Technology Unit staff, limits their usefulness as training exercises.

Institutionalization: A research capacity has not been fully institutionalised within the Ministry of Health. This is understandable considering that the unit has been in operation only one and one-half years.

Component No. 19: Nutrition

This component was added in 1984 in recognition of the MOH's identification of nutrition as a priority program.

The only activity that is currently scheduled under this component is a national nutrition study. (This is also a scheduled activity in the workplan for Operations Research.) Field work is scheduled for late 1986 with the final report due in late 1987. Little progress has been made to date and the entire activity seems to continue to slip behind.

A number of other activities were originally scheduled to be included under this component but nothing has been done. By mid 1986 no funds had been spent.

Breastfeeding and improved feeding supplement and weaning practices have been incorporated into training and supervision in the departments of MCH and Diarrheal Disease Control of the Ministry. Diarrheal Disease Control personnel report little evidence of impact of their effort.

The Project appears to have had little impact on any area of nutrition concern.

D. Project Impact

1. Health Impact

The Project is intended to contribute to the overall AID goal of improving the health status of the Honduran people. It is also expected to contribute to a number of other objectives of the GOH as specified in the 1982-1986 National Health Plan. These objectives include such things as improving the quality of care and broadening of coverage. It appears that these are all consistent with the Project objectives as well.

Health impact per se, however, is not an immediate objective of the Project. The Project, though, is expected to contribute to the ability of the MOH to have an impact on health status. Because some of the operations

that are supported by the Project focus more on phenomena that should have a direct impact on health, it is reasonable to try to assess changes in health status.

In some cases, Project supported activities and inputs should prove to be the critical contributing factor in MOH strategies to improve health status. This being true, failure of the MOH to achieve health status goals could follow from faulty design or implementation of this Project. For example, if measles incidence rates are high, it could mean a faulty cold chain, for which this Project has taken responsibility. An increase in the incidence of malaria could mean that the Project is inappropriately managing malaria vector control.

On the other hand, the Ministry's success in monitoring health conditions is a reflection of its management ability. The responsiveness of the Ministry to information on health status (and other factors) can be used also as a measure of management ability.

There is evidence that the health level monitoring now used by the Ministry is sensitive to variations in the incidence of immuno-preventable diseases. Its malaria case finding methods should also be sensitive to large changes in malaria incidence.

The epidemics of measles that have been detected by the MOH have indicated that there are continuing coverage problems. This could mean that the cold chain is not functioning properly, that vaccinations are not being given to sufficient numbers to break the transmission process, that the wrong persons are being vaccinated, or any combination of these and or other factors. The MOH is investigating the problem and seeking solutions.

Although case finding in the malaria program is not a means of obtaining a true measure of malaria prevalence or incidence in the population, the techniques employed should lead to indications of direction of change in prevalence. As such, it does provide a limited indication of whether or not the vector control program is having an effect. Still, one must keep in mind that other factors play important roles in the incidence and distribution of the disease, and of the vector.

Case finding for malaria has been increasingly aggressive over the life of the Project. Additionally, staff of the vector control program report that the population and geographical areas within which case finding is concentrated are not qualitatively different from what were covered a few years ago. Therefore, the smaller number of cases found with the higher numbers of persons tested probably means that there is a lower incidence of the disease and better control of the vector.

Because diarrhea is a major or contributing cause of infant mortality, an indicator could be created to measure impact of the diarrheal control program. This, however, is probably not yet feasible on a national scale. It would require close monitoring of infant deaths in order to determine whether diarrhea was a factor and, if so, to what degree.

## 2. Knowledge and Action of the Population

Early in 1980 a three-year, centrally funded AID health education project began in Honduras. Its purpose was to develop, implement and evaluate a health education program using mass media (mostly radio) to promote the use of LITROSOL in reducing infant and child deaths due to diarrhea. The demonstration site was located in a rural area with a population of 400,000.

In 1982 the MOH decided to expand coverage to include the entire country and add three additional themes; malaria, immunization and tuberculosis. It was demonstrated that the approach was effective. The Health Education Division was strengthened and the capacity was institutionalized through addition of professional staff at the central level.

They also created the positions of regional education coordinators to assist in the implementation of the various educational techniques using person-to-person contacts at health facilities, as well as promoters (paid MOH community-based personnel) and volunteers. The experience with the program clearly indicated that people not only knew that LITROSOL had a positive effect on children and infants with diarrhea, but that a large portion could mix it properly in their homes. It has become a widely used home remedy.

It was also shown that mass promotion led to improved compliance with vaccination norms in young children. The methodology developed in the demonstration project is being applied to other health themes but has not been evaluated to the same extent in terms of changing health practices and behavior.

Coverage: There is evidence that service coverage has increased in the period 1980-1985. Ministry statistical reports show that there has been a 22.2 percent increase in attentions provided. This is a major accomplishment in which Health Sector I has played a significant role. It indicates that the population is changing behavior to the extent that they seek formal care in higher numbers.

We have also seen that health workers in communities have the knowledge and motivation to apply appropriate care methods, some of which have been only recently introduced. Additionally, it means that people in communities have better access to the services.

#### E. Cost Control

In the original Health Sector I Project Paper the economic analysis focused a great deal on developing greater efficiency in the public health system. This was designed to occur through the unfolding of progress in the area of reduced unit costs of a variety of commodities and services.

To improve efficiency of primary health care the Project sought to direct future resources away from costly hospital construction and high cost technologies into the primary health care system. This was expected to strengthen treatment capability at the health center and community level.

The original PP stated that internal efficiency, as far as this Project is concerned, "is defined as the relationship between the desired output, health care, and the cost of producing that output." Improved internal efficiency, then, would allow more people to be treated for a given budget, or for the budget to be reduced without diminishing the number of people who would be treated.

1. Medicine

One of the major targeted achievements for HS-I was that, "the weighted-average unit cost of medicine used in the priority programs of the MOH will be less in 1987 than in 1984, when adjusted for inflation."

Recently MSH completed an extensive analysis of pharmaceutical prices in order to develop the data necessary to evaluate the success in accomplishing this targeted achievement. Due to limitations of the data it is still impossible to evaluate whether the stated goal of the project can be achieved.

All that could be said regarding medicine prices is that the weighted-average unit cost of medicines for which data were available is 19 percent lower in 1986 than it was in 1984. This analysis was based on a substantial sample of medicines bought by open bid rather than on the medicines especially used in the priority programs. Also, differences in the procurement lists in the two years and incompleteness of records made it possible to compare only 142 products in 1986. This represents 57 percent of the products ordered in that year, and 58.5 percent of the value of that order.

Nonetheless, as MSH points out, "the Ministry is getting more drugs for its budget lempira (at least in 1986 compared to 1984), not only by getting better prices for drugs bought in open bidding, but by purchasing a greater share of its drugs that way. Although it is difficult to analyze the multi-year trend in pharmaceutical prices so as to evaluate the success of this Project, an evaluation can be done for the process which has begun in the area of drug purchasing. Impressive results have been obtained as a result of tighter controls of direct purchasing, bulk purchasing of medicine, and a setting of pharmaceutical priorities as demonstrated by the recently produced "Official List of Basic Medicines."

The successes achieved through drug purchasing by means of bidding began in July 1983. The following table highlights the noticeable decrease in direct purchasing in 1985.

TABLE IV-2

Pharmaceutical Procurement  
(Thousands of Lempiras)

	1983		1984		1985	
	Cost	%	Cost	%	Cost	%
Bidding	14,800	77.7%	14,958	73%	17,029	85.9%
Direct Purchase	4,258	22.3%	5,538	27%	2,788	14.1%
<b>TOTAL</b>	<b>19,058</b>	<b>100%</b>	<b>20,495</b>	<b>100%</b>	<b>19,817</b>	<b>100%</b>

\*Data based on second half of year only.

In the meantime, attempts are being made to enable the MOH to buy drugs directly from PAHO. This would also help lower pharmaceutical prices even further.

## 2. Cost per Patient Treated

Another targeted achievement for HS-I was that the "cost per patient treated, when adjusted for inflation, declines between 1980 and 1987 in hospitals and health centers."

Although there are some problems with data, it is possible to conclude that the unit cost of consultations in the health centers (CESARs and CESAMOs combined) was 12 percent lower in 1985 than in 1980. It is impossible to make any statement on the changes in unit costs in hospitals between 1980 and 1985. Available data indicate, however, that the cost per out-patient, adjusted for inflation, is now about 12.07 lempiras, or about 6 percent higher than it was in 1976 (11.43 lempiras in 1985 prices). There was no way to develop 1980 base line unit cost data for hospitals.

The problems in calculating these costs centered on the following:

- The line item for "Ambulatory Consultations" was used as the total cost indicator to estimate the cost per patient. Although not ideal, this was the best available approximation for actual health center services.

- The data on actual visits to health centers is probably an under-estimation. This phenomenon is discussed later.
- It was not possible to separate CESARs and CESAMOs due to the fact that, although the MOH has the data necessary to do the breakdown, it is not in an accessible form.
- Cost data from the regional hospitals has been spotty and inconsistent, and always late in arriving at the central office. The inconsistency of the data is seen in the fact that there is an extremely wide spread between the lowest unit cost hospital and the highest.

Even if there were no problems with the integrity of the data, the method of analysis is questionable in itself. Comparing 1985 data with 1980 provides a very general "snapshot" picture of those two years. It would be much more useful to look at the trend that has been taking place over the period. The table below provides such data.

TABLE IV-3  
 CESAR'S AND CESAMO'S  
 Estimation of the Unit Cost of Attention  
 1983 Prices

	Y E A R							
	1978	1979	1980	1981	1982	1983	1984	1985
Unit Cost (Lemp.)	9.79	20.18	15.54	13.12	11.43	11.97	12.77	13.72
Percent Change	-5.5%	106%	-230%	-15.6%	-12.9%	4.7%	6.7%	7.4%

As the table indicates, recent unit costs appear volatile, especially between 1977 - 1980. Then, starting in 1980, the unit cost tumbled 43 percent through 1982. It would be difficult to attribute any of this fall to the Project's impact, as little progress had been made in Project implementation through 1982. Then, we find that the unit costs rose 19 percent between 1982 and the end of 1985. Whether it would have been higher or lower, everything else being stable, without the Project, is impossible to determine.

In their analysis of this trend, MSH suggests some possible explanations for this phenomena. First, an increasing percentage of the people getting

consultations in health centers are having them in CESAMOs; they treated 40 percent of the health center patients in 1980, and 51 percent in 1984. The table below summarizes the number of attentions provided at CESARs and CESAMOs between 1977 and 1985.

TABLE IV-4

**CESAR's AND CESAMO's**  
**Number of Attentions Provided**  
**1977 - 1985**  
**(in Thousands)**

YEAR	All Centers		CESAR's			CESAMO's		
	No.	% Change	No.	% of All Attentions	% Change	No.	% of All Attentions	% Change
1977	1,862	-	757	41%	-	1,105	59%	-
1978	2,572	33%	1,208	47%	60%	1,364	53%	23%
1979	1,325	48%	684	52%	43%	641	48%	-53%
1980	1,657	25%	995	60%	45%	662	40%	3%
1981	1,958	18%	1,100	56%	11%	858	44%	30%
1982	2,305	18%	1,326	58%	21%	978	42%	14%
1983	2,209	-4%	1,138	52%	-14%	1,071	48%	10%
1984	2,050	-7%	1,006	49%	-12%	1,044	51%	-3%
1985	2,046	0	NA	-	-	-	-	-

The fact that more people are seeking care at CESAMOs has obvious cost implications. Since these centers have one or more doctors they are the more costly of the two. The data indicate that CESAMOs are becoming both relatively and absolutely more popular than the CESARs. Attentions given at CESARs have plunged 24 percent between 1982 and 1984, while even the number of people going to CESAMOs declined by 3 percent between 1983 and 1984.

In summary, the total number of consultations reported has dropped by 11 percent since 1982, while the population has been growing. MSH believes that this can be explained by two possible causes: migration to urban areas; and simple under-reporting. With fewer people and primarily fixed costs at CESARs, the cost per consultation inevitably rises.

At the same time that this is occurring, the number of centers is increasing. There were 12 percent more health centers in 1985 than in 1982, while the number of attentions has gone down at a similar pace. As MSH points out, there seems to be a swelling imbalance between supply and demand in the health centers which is continuing. The extent and effectiveness of outreach community health care has not yet been fully assessed. Any serious concern for altering the balance and distribution of facilities must take all these factors into account. It must also address how much care at facilities versus contact in the community and home is desirable. This will require a different sort of analysis than we can provide here.

### 3. User Fee Collection at CESAMOs

In 1983 MSH conducted a case study of the CESAMOs in three health regions in order to determine the cost recovery policies being implemented. It is, by law, prohibited for CESARs to collect user fees, although there is sometimes a "voluntary contribution" at many centers. The study came to the following key conclusions:

- That these user fees are vital to the health centers' discretionary spending ability;
- That these funds are an important complement to routine mechanisms for providing basic materials, fuel and supplies; and
- That when priority is given to cost recovery, greater flexibility and overall capability is accorded to the individual CESAMOs.

The evaluation team constructed its own set of very rough estimates of total cost recovery, by region and by year, for all CESAMO's between 1980 and 1985. Since no aggregate data were available, the MSH study of 1983 was generalized for all regions and years using a number of simplifying assumptions. The data are more of an illustration than a true estimation. It was estimated that the unit cost recovery at all CESAMOs has been constant between 1980 and 1985 at about 1.08 lempiras per attention. Since no data are available on the unit cost per attention at CESAMOs, it is not possible to calculate the spread between cost recovery per attention and

unit cost per attention, however, with the knowledge that: (1) both CESARs and CESAMOs in 1985 spent about 13.7 lempiras per attention; and (2) that CESAMOs are the more costly of the two, one can begin to measure the extent of subsidy (per unit) taking place. In the aggregate, people visiting CESAMOs are paying less than one-tenth of the true financial cost to the MOH.

#### 4. Hospital Costs

Currently the public hospitals in Honduras generate about 5 percent of their total assigned budget. A general goal of AID, and a condition of this Project, has been increased self-sufficiency for hospitals, along with lowering (or at least containing) unit cost of delivery. Between 1980 and 1984, the unit costs of four hospital-related services have increased faster than consumer prices in general (as measured by the Central Bank's inflation index). In particular, the cost of a "hospital stay" soared 78 percent over the period, more than twice the rate of inflation (37 percent).

#### 5. Unit Costs of Key MOH Services

Another of the project's major targeted achievements is that the unit cost, adjusted for inflation, of key MOH services shows a decrease in 1987 from pre-1984 levels.

##### a. Ambulatory Care

As MSH points out in their analysis, there is no way to develop 1980 base line unit costs for hospital ambulatory care. The only historical data available are for 1976. Thus, all that was able to be calculated was that the cost per ambulatory care attention, adjusted for inflation, was approximately 12.07 lempiras in 1985, just slightly higher (5.6 percent) than it was in 1976 (11.43 lempiras in 1985 prices). The analysis points out a host of problems in the type of methodology used: many hospitals don't report the data; and there are wide differences between some hospitals, indicating discordant measurement systems.

Currently, it would probably be wise to focus more on the future costs of ambulatory care, especially in light of the recently passed "Estatuto Medico." This law allows for physicians to only work six hours per day in one (and only one) government job, and to receive retirement compensation equal to 80 percent of their salary after 10 years of service. The unit cost of ambulatory care will climb markedly as a result. It would be worthwhile for the MOH to calculate the annual cost of this law. This would serve the dual purpose of educating the GOH on the future resource drain resulting from the law, as well as allowing for the comparison of future unit cost data with those prior to the law's implementation.

b. Immunizations

While no data have been developed that would enable one to analyze unit cost of immunization over various years, a study done by MSH does indicate, using a simple cost-benefit analysis, that it is highly beneficial in economic and financial terms to vaccinate children against numerous childhood diseases. Even during the more expensive "National Vaccination Weeks" the benefits were estimated to be 12 times the cost. The time allotted to the semiannual vaccination campaigns has since been reduced resulting in probably more cost-effective coverage.

6. Conclusions

In order to put the preceding analyses into perspective, it is worth mentioning that a recent study\* on the availability and use of ORS through social marketing pointed out that the public is paying considerable amounts in the private sector for treatment of diseases. When trying to set appropriate prices for their goods and services it would be worthwhile for

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\*See Annex B, number 16.

the MOH to take heed of a conclusion of that April 1986 study: "that a large portion of health financing is carried out in the private sector, and that the public would be willing to pay for certain public services at a reasonable cost." The study notes that a sufficient balance between official financing and that obtained at the local level may indicate an important area of concern for the extension and strengthening of ORS activities given that the technology for ORS is relatively inexpensive and quite effective. The same principle could very well apply to primary health care in general.

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## V. UNANTICIPATED CONSEQUENCES OF THE PROJECT

It has been possible to identify some unintended consequences of the project on health status. This section will focus on unintended consequences on health system objectives or activities.

### A. Linkages Among Indicators

Successes in achieving one indicator or cluster of indicators may lead to successes or failures in linked indicators.

An example may be found in the tuberculosis program. Increased case finding brought about by successful outreach and mass media programs, along with increased training of auxiliary nurses has overloaded the capacity of laboratories to handle slide examinations. Also, increased case finding has exacerbated the problem of inadequate medicine supplies, weakening the program by decreasing public confidence in the mass media messages and in the ability of CESARs to provide needed treatment.

A second example may be found in the great success of the cold chain. Regional maintenance technician supplies as part of this Project were diverted to "de facto" cold chain technicians. They devote full time to the cold chain and are unable to meet other maintenance needs. Three additional points are in order regarding the shift of technicians to exclusive cold chain use. First, this shift indicates an implicit decision to give priority to the PAI program. Second, the central role of maintenance in the success of all program components is highlighted. Third, a successful program can serve as a model for other activities. The cold chain reporting system is serving as a model for reporting systems for vehicles, incubators, sterilizers, stoves and boilers. Still, resources are not available to take advantage of the situation.

### B. Linkages Between Components

A closely related phenomenon is the illumination of linkages between components and broader activities. For example, expansion of the maintenance and

transportation components led to an increased number of employees with tools, equipment and workspace. This in turn led to an increased amount of work and increased need for coordination and supervision of work. These requirements were not taken into account in the Project planning. Provisions were not built in to identify regional maintenance and transportation supervisors and managers. This need has been recognized by one region which now has a maintenance coordinator.

C. Supervision

Supervision has been strengthened more than expected as a result of Project activities. Once supervision was introduced as a formal component, it clarified lines of responsibility and authority within different command structures. The current corps of supervisors has the potential to step into the roles of regional administrators as vacancies occur.

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## VI. PROJECT EVALUATION

### A. Strategy and Design

The initial strategy of the Project followed from weaknesses in the Honduran health system that had been noted following a breakdown in the system in the late 1970s. During the first years of that decade there had been an aggressive program to expand health services. It was also observed that hospital construction and expansion planned and underway was exhausting available resources and that recurring costs of those would be impossible to maintain.

As a result, the MOH decided to curtail construction and refocus more effort on primary health care. This renewed thrust, however, would incorporate such attention to training and support systems and to overall management strengthening. These would be aimed largely (but not exclusively) at improving services which were within the MOH's "Priority Health Care Programs." The assumption was that primary health care services would have greater assurance of being maintained and expanded if management and support to them (and to other concerns of the MOH) were strengthened at the same time the priority programs were being implemented.

The Project initially included 17 components, as discussed above. Following evaluations and reprogramming exercises in 1983 and 1984 two of these were effectively dropped, some were altered and others were added or divided differently. The greatest direct attention, however, continued to be scheduled for management, logistics, maintenance and training.

Each of these management and support concerns is defined broadly and each is comprehensive with regard to those other activities to which it is intended to contribute.

We find the intent of the Project Strategy to be justified on the basis of experience in Honduras and elsewhere.

In practice the overall breadth of the Project's 17-20 components and the open definition of each of the major areas of primary focus had some advantage

initially but has become complicated, burdensome and unattainable. These problems indicate that more emphasis should be given to holding Project activities within manageable limits. The alternative to this would be an increase in Project management staff, both at MSH and AID, in order to handle the present number of diverse areas of emphasis.

Initially, the scope of the Project permitted the Ministry and technical assistance staff to have wide latitude in testing and identifying what could be done to improve MOH performance. That is, it provided opportunities to determine counterpart strengths and needs, so as to determine the utility of focusing on various areas. In sum, it allowed for a flexibility that is essential for successful development support where political winds can change quickly and where serious obstructions to implementation can emerge.

Initial reprogramming in 1983 and subsequent amendments to the Project Paper and the Project Agreement, as well as relaxations of conditions precedent requirements found in Project Implementation Letters (PILs), reflect the response to ongoing assessments of the Project and its changing context. Without such flexibility the Project would have been stymied on many occasions.

This breadth and flexibility that was an asset earlier, however, is becoming a liability as the Project comes to an end. Although the result to date can be seen in the progress on many fronts, or many components, the primary concerns of management and administrative support capability are still far from complete. Institutionalization of capacity has not been clearly established.

The Westinghouse 1983 evaluation recommended reducing the ambitiousness of the Project and narrowing its focus in order to consolidate impact on MOH capability. In fact, this did not happen. Project breadth has, if anything, increased. This may have been appropriate, given that the Project was extended by three and a half years beyond the original PACD. Now, however, a narrower focus is essential.

B. Implementing Agencies

The Ministry of Health (MOH) is the primary implementation agency for this Project. The Project funded Project Coordinator and the MSH technical assistance team leader work with MOH personnel on a daily basis.

The Director General of Health is the person with ultimate responsibility for Project implementation and, as such, is the closest thing to a non-AID Project Director. The office of Director General, as the highest line office under that Secretary, is also responsible for managing all health related activities in the Ministry. This includes Administration, with its six separate offices managing everything from accounting to graphic arts, as well as 17 different technical divisions and units, ranging from hospitals to human resource development. The DG also supervises the eight Regional Directors. There is strong support for the Project at high MOH levels.

As might be expected though, most normative division chiefs are still relatively unfamiliar with the content of the Project Agreement, except where it specifically concerns their offices. They are usually preoccupied with their own areas of responsibility and interact with the PCU mostly on financial matters, i.e., when they wish to make expenditures.

Over the life of the Project the absorptive capacity of the MOH has been greatly strengthened. Although most personnel continue to have broad functions, the MOH has added 67 full-time positions throughout the Ministry. This obviously enhances the Ministry's overall capacity to support health activities. With AID's continued financial support across the primary health spectrum, the institutional capacity of the MOH is improving. Questions on institutional sustainability after an AID withdrawal, dealt with elsewhere in this report, are another matter.

At the heart of the implementation of the Project is the Project Coordination Unit (PCU). It is responsible for all Project monitoring within the MOH, as well as extensive interaction with other government entities, especially the Ministry of Finance. The PCU submits quarterly reports to the Director General, noting the operational and financial activities undertaken during the

preceding three month period. It also produced a series of documents for the First Official Report, which was used as the basis for the Project's internal evaluation of May 1986.

Ministry officials outside the PCU are fully aware of their responsibilities related to the Project. They do not, however, furnish separate reports on activities conducted under the Project, or with Project funds. The overall reports that they do produce are slow in coming and are not uniform. In fact, this is indicative of a broader problem of the PCU; that is, it lacks the authority to require various MOH officials to comply with requests or to perform according to plan. Thus, its ability to monitor and manage is limited.

The PCU does have recourse to the Director General and meets with him or the Sub-Director General on a weekly basis, along with representatives of USAID and the primary technical assistance team. The Director General attempts to follow through on problems identified at these meetings, but as indicated above, his span of control and his other myriad responsibilities draw a considerable portion of his efforts and time. This limits his ability to manage the Project as well.

The third organization in the triad is the MSH technical assistance team. It is not an implementing group per se but it works closely with the implementers. Generally, MSH personnel have MOH counterparts with whom they interact with on a regular basis. MSH works with the PCU to develop annual work schedules.

In summary, the following issues are some of the areas of concern regarding implementation of this Project.

Turnover: This problem within the MOH's staff has made implementation difficult. It is to the credit of the MOH, and the persistence of the PCU, that their overall commitment to the objectives of the Project have remained strong. In particular, the MOH has established over 60 new positions and created separate departments of transportations and medications in order to ensure their priority status. The Science and Technology Unit and the Computer Unit were also created with a view toward Project priorities and Ministry needs.

Absorptive Capacity: The absorptive capacity of the MOH has been enhanced through management improvement. Long-term training planned, but not conducted, could do much to improve it further without this and without sustained outside assistance of a "hands-on" nature it is doubtful that the MOH could sustain the thrust.

Information Flow: A continuing problem with Project management by the MOH is the lack of good information at all aspects of Ministry operations. The PCU does an admirable job of putting together information which is available but division and regional heads are slow to accumulate and report the information they should be producing. Formal information systems truly adequate for management of the Project and of the MOH as a whole are still being designed and developed. That these are not yet in place is a serious impediment to management capacity. This may be due to the fact that they have only been involved in this activity for less than two years.

Flow of Funds: At times this has been a serious impediment to Project implementation, with 1986 as an excellent example. At the very least, six weeks are lost at the end of each year to "close the books," and another six weeks (at least) is lost at the beginning of the year in lieu of budget approvals. This problem was exacerbated in 1986 when the government went into a virtual gridlock after the 1985 presidential election. The uncertainty and volatility which this has created is still being felt throughout the Project, as well as the MOH generally.

#### Technical Assistance

Technical assistance provided through HS-I has been a major input as well as a key element in its implementation. Through the previous PACD (12/87), \$11.1 million was scheduled for technical assistance, the major portion going to management and planning. That covered over 900 person months of effort and accounted for 36% of all AID project assistance.

Through June 1986 the Project has had 521 months of long-term technical assistance provided through four contracts as follows:

<u>Provider</u>	<u>Person/Months</u>
Management Science for Health	425
Academy for Education Development	48
PSC/Malaria	36
PSC/Continuing Education	<u>12</u>
TOTAL	521 person/months

The present evaluation team has observed the MSH consultants, the PSC in Malaria, and the AED consultant in mass media. It is clear that in all cases the personnel have played advisory and participatory roles that have been responsive to MOH needs and sensitive to their opinions.

The consultants work closely with MOH staff, meet regularly with counterparts, and participate fully in problem solving and technology transfer exercises. The MSH chief-of-party and some staff meet weekly with the PCU staff and the AED Project management and liaison group. They jointly meet again each week with the Director General of Health. These meetings are used for information sharing, problem identification and decision making.

Additionally, the TA personnel have shown flexibility in dealing with a broad range of implementation concerns consistent with Project requirements and have gained the respect of Ministry personnel.

As a provider contracting agency, MSH has responded well to requests for short-term advisors. This is true despite problems of maintaining implementation schedules in Honduras. It has provided more than thirty short-term advisors.

There have been constraints in making the most effective use of technical assistance. These have been similar for other inputs. They include:

- Frequently changing counterparts;
- The complexity and scope of the Project; and
- Disruption of plans associated with presidential elections, discontinuous flow of funds, strikes and other events external to the Project.

D. AID's Role

The Mission's support to Health Sector I has exceeded that normally provided by donors. This is necessary because of the number of Project components and their complex nature. AID not only coordinates its inputs but also maintains daily contact with key MOH officials to ensure that implementation problems are quickly identified and, when possible, dealt with. Site monitoring is done in the field, covering 15 percent of the basic health care facilities.

In the USAID a full-time direct hire Project Officer is assigned to the Project. The Project Officer is assisted by two PSC administrative assistants. One handles implementation documents, processing PIO's, etc. His primary concern is to see that timely movement of important documentation is carried out. The other is primarily concerned with Project monitoring, maintaining an office in the MOH. The quality of the AID Project management staff has been exceptional in that they are highly regarded by the MOH as being competent and dedicated professionals.

One MSH professional acts as liaison with the various MOH organizational entities involved in the Project and provides feedback on how objectives are being met.

This type of involvement is not only necessary in a Project of this scope and complexity but, more importantly, has made a notable contribution to Project achievement.

This model should serve as a guide to other large projects in each of AID's portfolios.

E. Sustainability

The Mission has had difficulty establishing and maintaining a formal implementation and impact monitoring system although some important advances have been made.

Among the advances is the routine observation of CESARs to determine how much the support, supervision and training systems have helped operations and quality of services at that point. Working with the MSH team, they have developed a means of systematizing the observations. The information produced has been valuable for assessment and problem identification.

Another advance has been the dynamic use of objective statements to help all participants focus on Project accomplishments. This, however, is more promising now as a concept than as a reality. To make this truly valuable, the objectives must be set so that they more clearly reflect what the Project is achieving and trying to achieve. The objectives should also be stated so that specific targets and target duties are included. They will, of course, have to take into account the availability of information.

## 1. Institutional

A number of advances have been made toward ensuring institutional sustainability of the objectives and activities supported under the Project. It is clear, however, that much still needs to be done before they can be said to be fully within the capacity of the GOH and the MOH to sustain.

The establishment of a number of new, permanent posts in education and maintenance is a clear indication of serious commitment to continuing the emphasis on these support activities on the part of the GOH.

The creation of CONAME has been a major accomplishment of the MOH. It promises to rationalize and improve procurement and supply efficiency. It is feasible that unless management attention is paid to focussing CONAME's responsibilities its promise will be diluted and lost.

The cold chain has provided a model for good maintenance. Currently the MOH does not have the resources to maintain all types of equipment. It has even fewer resources to be used to maintain facilities.

Supervision is well institutionalized as a conceptual priority and training for supervision has accomplished much. The persistent unavailability of transportation and inability to meet supervision schedules shows that this remains a problematic area. Costs associated with supervision are now largely borne by the Project. When these have not been available the system has broken down.

Training has been a major activity under the Project. Although there have been attempts to rationalize training on the basis of supervisors' evaluations, it has not been managed in such a way that it can be fully and properly absorbed by the MOH. Evidence of this includes the lack of development of a personnel training information system, over ambitious training schedules, the conduct of training prior to development of training materials, and neglect of formal follow-up evaluations. Assessment of additional staff has helped, but pressure to conduct more training as fast as possible has overwhelmed them.

Management within the MOH has improved. Supervision training and management training has permeated the system. There is still much to be done, however. Lack of information systems producing information useful for each management person is a hindrance to full use of the human capability that exists. Instituting those systems will require sustained external assistance.

It should be pointed out that pressure to maintain and expand both hospital care and primary health care continue to drain Ministry institutional capacity. Population growth continues to tax the resources at all levels of the MOH. MOH capability has improved via experience, training, dedication to purpose and additional staff. External conditions do threaten its ability to keep up with continued outside support.

## 2. Equipment

As noted in several places in this report, equipment maintenance continues to be a serious problem for MOH operations. Personnel, spare parts and repair facilities are all in short supply. Much equipment is lost completely simply because of inability to repair it. Even when repairs are

done, down time is often excessive. Without substantial improvement in the maintenance program of the MOH, it is doubtful that existing equipment can support MOH activities satisfactorily.

Improved maintenance systems and rational programming of new equipment purchases are needed to ensure availability of equipment. It is doubtful that the GOH can handle this on its own.

### 3. Political

The political sustainability of the HS-I Project hinges on a number of elements. Among them are the following:

- Continued, supportive GOH policy, particularly in primary health care and child survival;
- Constant attention to appropriate design of the Project, as well as the entire health program;
- A sense of local involvement in the goals and objectives of the Project;
- Political decisions within the MOH which may seek to alter resource allocations; and
- Continued strong funding from the international donor community.

The impetus for this Project had its origins in the early 1970s when a group of public health-minded technicians had control of MOH. The political will, as well as the concomitant economic resources, were allocated to the improvement of rural public health. This program was abandoned in 1978 and there followed a greater emphasis on urban, curative health care. As might be expected, there was a drop in support for rural community development and delivery of primary health services.

The preceding discussion of the downfall of public health is worth noting. It demonstrates how fragile the political sustainability of any project can be. Fortunately, there has been a reemergence of interest in primary health care since 1980.

Evidence of continued commitment is seen in the willingness of the Government to provide an ever increasing portion of its own budget to primary care and support mechanisms. It is also seen in its readiness to halt construction on costly hospital facilities and its insistence that the Inter-American Development Bank, the agency providing funds for hospital construction, also provide funds for recurrent costs for the first years of operation of those hospitals that will be completed.

These actions, do not provide absolute assurance that the commitment can be sustained in the face of other political interests, economic limitations, and competing demands for government resources. The threat that hospital services will be given higher priority within the MOH system persists. External donors cannot be expected to maintain recurrent costs interminably.

Even while recurrent costs of the new 500-bed hospital in San Pedro Sula may be covered, the demands for human and other support resources will draw heavily on the same sources as those used by other MOH programs. It is possible that this could cripple the outreach services and reduce the political will to continue primary care with the same intensity.

Another important threat comes from the increasing number of medical students graduating each year from national institutions. The "open admissions" policy begun in the 1970s is expected to result in a two-and-a-half fold increase in graduates in 1987 over 1986. The government is already committed to placing these graduates. There may be pressures to open new hospital positions for them or to have them displace health center workers who are not physicians, but who have been trained as primary care providers.

These threats are exacerbated by the Government's and medical union's recent agreement to raise salaries of medical interns and nurses.

A law passed in 1985, referred to as the "Estatuto Medico," will place an additional heavy economic burden on the Government and the Ministry. This will further test the political commitment (and the economic possibility of continued support) to primary care using the mechanisms strengthened in

conjunction with this Project. The "Estatuto" calls for doubling the base salary, reducing the number of hours worked by 25 percent, and allowing retirement after ten years of service (down from 20 years) for government physicians. In addition, the GOH decision to have "open admission" to medical school, coupled with high salaries, will certainly increase the number of physicians. This, in turn, will lead to political pressure to create more positions for these newly trained doctors in the public sector, particularly hospitals.

Another political threat hinges on the economic performance of the country. If the economic conditions suddenly became much worse, through any number of causes, the political decision could be made to alter, or simply cut back, health expenditures. Given the precarious state of the Honduran economy, this is always a possibility.

A political threat also exists from a possible deterioration in the sense of community involvement that is currently felt at regional levels. If local authorities feel that the system is becoming even more centralized than it currently is, a sharply diminished sense of community involvement could quickly ensue, with harsh repercussions for the Project, and rural public health in general.

Lastly, a political threat certainly exists as far as the international donor community is concerned. If, for whatever reason, there was a sharp overall cutback in AID funding, the GOH could be in a much more unstable economic position than they are at present. With a possible across-the-board decrease in external (AID) funding, it is possible that the primary health care could suffer relatively more damage than other sectors.

In summary, we conclude that the government has maintained its political commitment to primary health care under this Project but it has had to make many concessions that could completely undermine it. Unless it restructures its arrangements with the medical school and the medical community, it will not be able to sustain support to primary health care.

4. Financial

As the Project draws to the end of its current phase, the importance of the financial sustainability issue increases. The following analysis is a simplified follow-up to the much more extensive "Administrative Analysis Report," done by Birch and Davis in 1984. The focus of this analysis is on the financial capacity of the MOH to absorb the recurrent costs implicit in this Project. Recurrent costs are defined here as the public funds necessary to continue the ongoing operations and maintenance of Project activity. Excluded from the analysis are: initial capital costs; most positive financial externalities generated by the Project, with the exception of cost recovery; and any discussion of what the MOH should or should not be funding. For the sake of the analysis, it was assumed that the current Health Sector I Project would terminate at the end of 1987, and that no follow-on project would continue in its place, thus ending all external funding.

a. Recurrent Cost Analysis

The following analysis evaluates the recurrent costs of the project in relation to: (1) available domestic funds; (2) all primary health care costs; and (3) the rate of population growth.

First, recurrent costs were determined for the years of the Project's existence. This was done by calculating how much AID had spent (both in loan and grant funds) for salaries, training, commodities, and per diem in 1984-85. These four categories are the essential ingredients to the Project's continued existence. Technical assistance, one of the more expensive components, is not an item that the GOH would likely wish to keep, assuming that it would have to fund such an operation out of its own domestic budget. If the Project is to be sustained, at least financially, these costs will have to be met. The following table provides summary information on these recurrent costs, all funded by AID, for the years 1984-1992. No adjustment was made for expected inflation so as not to complicate the analysis.

**TABLE VI-1**  
**PROJECTIONS FOR PROJECT COSTS FOR SELECTED ELEMENTS**  
**Implementation and Recurrent Costs**  
**(Current US \$ in Thousands)**

ITEM	YEAR								
	1984	1985	1986	1987	1988	1989	1990	1991	1992
Salary	113	119	177	266	355	355	355	355	355
Training	65	55	93	139	60	60	60	60	60
Commodities	1,493	261	916	1,375	1,300	1,300	1,300	1,300	1,300
Per Diem	539	843	1,339	2,009	650	650	650	650	650
Physical Plant	-	-	-	25	25	25	25	25	25
<b>TOTAL</b>	<b>2,210</b>	<b>1,278</b>	<b>2,525</b>	<b>3,787</b>	<b>2,390</b>	<b>2,390</b>	<b>2,390</b>	<b>2,390</b>	<b>2,390</b>

The levels of these recurrent costs seem satisfactory on the basis of evidence we have. Training expenditures are projected at lower levels than earlier anticipated due to the development of modules for priority programs. Also, immunization campaigns have been shown to be effective using a cost-benefit approach.

The following table provides comparison of level of recurrent cost with the overall MOH budget (including external funds), the level of national funding for the MOH, the amount spent on primary health care, and the population growth rate. As can be seen, the recurrent costs of this Project consume a noticeably smaller percentage of the 1986 MOH budget than that of 1985.

While this might initially indicate a greater ease in meeting the Project recurrent costs, as they fall from 3.3 percent to 1.8 percent of the total budget, the reasons behind this have to be taken into account. The Ministry's budget, including external funds, soared 78 percent over 1985 expenditures. Although there was a general across-the-board increase in all areas, "Central Administration" was budgeted at 441 percent of 1985 expenditures. This indicates a dramatic shift in financial priorities

TABLE VI-2  
COMPARISON OF RECURRENT COSTS OF PROJECT ACTIVITIES  
(Without Cost Recovery)

(1)	(2)	(3)	(4)	(5)	(6)
Ongoing Recurrent Costs	Percent of Budget	Percent of Internal Funds	Percent of PHC Funds	Recurrent Cost per Capita	Population
<u>1986:</u> \$2.4 million	1.8%	2.9%	9.0%	\$0.53	4,500,000
<u>1985*:</u> \$2.4 million	3.3%	3.6%	11.5%	0.55	4,372,000

\*Based on planned 1985 budget, except column 4, which is based on actual expenditures.

and commitments that will have a detrimental effect on the MOH's ability to meet future recurrent costs. The major cause of this shift is the recently passed "Estatuto Medico." Other, lesser causes are the increased use of contracted personnel, and a general increase in central office personnel.

The ratio of recurrent costs to PHC funding was lowered from 11.5 percent in 1985 to 9 percent in 1986. Although this is a positive indication of continued levels of increased funding to this area of importance, the trend should be analyzed over a longer time frame to evaluate the level of PHC funding.

A related issue which bears directly upon the ability of the MOH to meet these recurrent costs is that of hospital funding. Although the "hospital" line item was increased by 16 percent in 1986, much of this was due to the fact that three new hospitals were due to open this year. Although it is questionable whether all of them will actually open, the long-term budget implications remain intact, i.e., hospital fixed costs

should continue to account for a sizable portion of the MOH budget. It is expected that hospital operating costs will increase substantially in upcoming years due to the effect of the "Estatuto Medico." Thus, more hospitals and higher costs of operating them should combine to raise dramatically the financial needs of curative health care to Honduras.

b. Recurrent Costs with Improved Cost Recovery

The aforementioned issue of rising hospital costs, while boding future financial trouble, does present a possible opportunity for increased cost recovery. This could be the case for the health sector in general, and hospitals in particular. Currently, hospitals in Honduras generate approximately a 5 percent recovery factor on their allocated budgets. The possibility of raising this rate, and its impact on recurrent costs, are analyzed below, as well as a possible reciprocal increase in CESAMO recovery.

The following table presents the impact which improved cost recovery at hospitals and CESAMOs could have on the recurrent costs of this Project, everything else remaining equal. The values for hospital recovery represent the amount that they would generate over and above their current level of about 5 percent, while the value of CESAMO cost recovery represents similar improvements in their recovery capability. As seen, with moderate increases in hospital cost recovery, the MOH could dramatically improve their ability to fund primary health care activities in general, and the Health Sector I Project in particular. CESAMO cost recovery is viewed as much more limited.

TABLE VI-3

**PROJECTED RECURRENT COSTS\***  
**Health Sector I Project Activities**  
**Assuming Improved Levels of Cost Recovery**  
**(Current US\$ in thousands)**

ITEM	YEAR						
	1986	1987	1988	1989	1990	1991	1992
Initial Recurrent Cost	2,525	3,788	2,390	2,390	2,390	2,390	2,390
Hospital Cost Recovery	-	193	416	645	893	1,160	1,3922
CESAMO Cost Recovery	-	6	7	9	10	11	12
REDUCED COST	2,525	3,590	1,966	1,737	1,488	1,219	985

The implications of this type of cost recovery are quite obvious in the table. If the MOH administrators were able to begin a cost recovery campaign in 1987 there could be dramatic results within only a few years. By 1988 the recurrent costs of the project would take only 1.5 percent of the 1986 budget, as opposed to 1.8 percent of the same budget without increased cost recovery. Then, this percentage would decrease to 1.1 percent by 1990.

There would be a corresponding fall in recurrent costs as a percentage of MOH internal expenditures. Without cost recovery, recurrent costs would be 2.9 percent of the 1986 budget between 1988 and 1992. With increased cost recovery however, this ratio could be lowered to 2.4 percent of the 1986 budget in 1988 and 1.8 percent by 1990. Once again, with all other things remaining equal, a change would be seen in the ratio of recurrent costs to primary health care.

Lastly, one of the more salutary effects of such a cost recovery plan would be the effect it would have on the recurrent cost per capita. Assuming a 2.9 percent annual growth rate in the population, the per-capita cost would still decrease from US\$0.53 without any cost recovery, to US\$0.29 in 1990 with the improved cost recovery projected above.

Not taken into account in this analysis was the possibility of cost recovery at CESARs. Although it is currently illegal to collect any fees at CESARs, a change in the law, combined with a changed attitude toward cost recovery, could help propel greater cost recovery. The financial effect of such a change would be relatively small, but helpful in both raising funds and convincing rural health workers that the provision of their services is worthwhile to the public in financial terms.

A final item which would help lower net recurrent costs is the effect of pharmaceutical sales. If the Ministry continues to acquire medicines in bulk at lower costs, there will be ever more substantial savings. Although this tendency was not factored into either of the previous two analyses, it is obvious that every level of estimated recurrent cost is overstated by the extent that future savings can be accrued on pharmaceutical purchases.

In summary, the Ministry of Health appears to be in an ideal position to begin the process of making this Project's activities financially sustainable. Probably the best way to this is to develop a new well-structured set of user fees for various MOH services. A possible starting point would be the consideration of how to generate more cost recovery in the following categories:

- Curative care, particularly hospitals;
- Patient-related care, particularly at the CESARs and CESAMOs; and
- Non-patient related preventive care, such as disease control and sanitation.

c. Recurrent Costs and the MOH Budget

In order to judge on a general basis whether the MOH will be capable of meeting this Project's recurrent costs, it is helpful to look at the share of the health budget allocated to basic services. MSH concluded that these services were the sum of three budget line items: "vector control," "ambulatory care," and "institutional development." Together, these items have increased their share of the MOH budget expenditures by about 19 percent since 1980. The share for ambulatory services, however, has declined since 1980. Plus, the increase in budget share for the group dates from 1981, and is virtually all the result of the increasing share for the AID-financed "institutional development" component. With the "Estatuto Medico" now beginning to alter budget priorities, future budget allocations could easily be even more skewed toward physician-intensive activities, primarily hospital services.

In 1984 Birch and Davis recommended three alternatives for the MOH financing of this Project. One of them suggested diverting funds from other items in the budget, particularly hospitals. In fact, the opposite should be occurring with the "Estatuto Medico" now in effect.

Secondly, they suggested raising the amount of internal funds allocated to health care. Although budget expenditures should rise, there seems little reason to believe that primary health care will get enough of an increase to fund all the activities.

Lastly, they suggested increasing the level of external funding for PHC or other health components. If this is to be the case, donors should explicitly evaluate the extent to which they are subsidizing physician-related services.

F. Impact on Women

Maternal and child health services, appropriately designed and properly applied, will certainly have a salubrious effect on women in the population.

We feel that the Project has been implemented in such a way as to have this positive impact.

One of the major strengths of the MOH service provision system is its nurse auxiliary force, the vast majority of whom are women. Their skills and their ability to provide appropriate motivation, promotion and care have been enhanced with support from this Project. In the process their responsibilities have grown. They have not, however, been provided all the necessary administrative support; they need to use acquired skills most effectively. Nor have they been provided additional monetary rewards consistent with their development. Further, there is no opportunity for career advancement within the formal structure of the Ministry. Were supervisory levels established for nurse auxiliaries it would allow graduate nurses, an especially scarce resource, to be utilized elsewhere.

It should be noted that the work of MOH nurse auxiliaries at health centers is not generally truly that of auxiliary workers. Indeed, they are first line care providers, with a vast array of diagnosis, treatment, follow-up, motivational, educational and administrative responsibilities.

#### G. Environmental Impact

The vector control component of HS-I has environmental implications in that it involves insecticide spraying and storage and the elimination of breeding places for insects. The Project Agreement includes the covenant that any new malaria control interventions will be preceded by evaluation impact assessments. As far as could be determined, no novel interventions have been scheduled and no evaluations have been conducted.

It is clear, however, that traditional interventions do have environmental impact. Indeed, that is their intent. It appears that in areas where vector control have been implemented it has reduced the density of mosquitoes and mosquito larvae. Residual impact of insecticide spraying has not been assessed under this project.

The vector control division is active in eliminating breeding places for mosquitoes through both drainage of wet areas and promoting the elimination of breeding by residents of malarious areas.

The strategy being encouraged for reducing the density of Chagas vectors is improvement of housing. Residents are encouraged to surface their walls and ceilings.

The only apparent evidence of negative environmental impact results from inadequate storage facilities for insecticides. In both Tegucigalpa and in San Pedro Sula it was observed that insecticides were stored adjacent to work areas. In Tegucigalpa they were stored next to the hospital. This presented an apparent hazard. Construction of planned, new storage facilities will reduce the danger but it is not clear that they will all be completed during the life of this Project.

## VII. SUMMARY OF RECOMMENDATIONS BY COMPONENT

The evaluation team feels that the scope of the current Project should be narrowed. It appears that too much is being attempted in too little time. During the balance of time left in the current Project, careful analysis of the components and activities within components should be done with a view to setting priorities. For example, according to work plans of the MSH for 1986 there are listed 202 discrete activities in some form of development or execution. This will place a severe strain on the capacity of the MOH to maintain this number of Project activities in addition to non-Project responsibilities.

This broad scope in the past allowed for maximum flexibility. The team feels it is now time to concentrate on the most important areas with the view of completing them during the time left in the Project. This would also be helpful in the selection of components for the follow-on project.

Not all components are represented in the recommendations. Only the most important ones are addressed in this section.

### Component No. 1: Vector Control

Recommendation: The MOH should place more emphasis on eliminating vector breeding places. The causal relationships between vector control, environmental sanitation and health education are so strong that the three should be combined for best results. A commission should be formed to study the problem and develop a plan of action which involves large amounts of community participation.

Recommendation: AID should continue to support special studies in new technology in vector control and transmission channels of vector borne diseases.

Recommendation: AID should consider the Vector Control Division's request for equipment (small ditching equipment) and steel forms for concrete pipes so that permanent drainage can be built in place of annual temporary methods.

Component No. 4: Diarrheal Disease Control

Recommendation: Continued efforts should be made to provide ORS through commercial channels. A decision on how to accomplish this should be made within six months, now that a study outlining alternatives has been completed.

Recommendation: Hospital records should be monitored over the next 18 months to discover cases of severe dehydration being treated in children as a means of measuring effective use of ORS in the clinics and homes.

Component No. 5: Tuberculosis

Recommendation: Case finding should be improved. The auxiliary nurse continues to hold the key to case detection. They need motivation and supervision. There is a need for follow-up supervision for regions showing low detection rates.

Recommendation: There is a need for more supplies and better distribution of TB medications. Although the overall treatment drop-out rate is reportedly low, 5.8 percent, some regions report higher drop-out rates. These should be identified. Intensified efforts should then be made to reduce their drop-out rate.

Recommendation: This component is operating well considering the above mentioned problems. It can safely be turned over to the MOH to administer with minimum AID support. Other respiratory diseases can also be included with TB.

Component No. 7: Maternal and Child Health/Family Planning

Recommendation: If family planning is to appropriately and effectively reduce high fertility and to improve pregnancy spacing, thus contributing significantly to better health of children and mothers, it must be promoted more seriously among providers and in the community.

Recommendation: A study should be done of the availability of family planning services.

Component No. 10: Logistics

Recommendation: For Health Sector II (and if possible for the remainder of Health Sector I), rigorous administrative actions should be taken to maintain critical supplies and medications in health centers. This will involve setting one or more objectives to determine priority medications, revising acquisition procedures to assure priority medicines are always available, and revision of distribution procedures to assure those medications are accessible (e.g. in health centers).

Recommendation: The number of approved suppliers on the Government registry of suppliers should be expanded to include other suppliers who provide medicines at lower than present available costs. For example, the Canadian government, which is not on the register, sells generics at about 30 percent savings over what the Ministry is currently paying. PAHO also has offered its service as a procurement agent, at a reported savings of 2 million lempiras.

Regarding PANI, the following recommendations are worth considering:

- The MOH should plan its pharmaceutical purchases a year in advance from PANI. This would allow PANI to order raw materials, better preparing it to meet delivery dates.
- The USAID should facilitate technical assistance for PANI. An expert in pharmaceutical production and marketing from the International Executive Service Corps could possibly provide such TA.
- AID should, at the earliest opportunity, promote an active discussion of the future of PANI between and among all interested parties. The logical starting point would be a discussion of the PANI feasibility study done by MSH. Under the assumption that the current situation is untenable, the three proposed options could then be evaluated.

If a consensus could be reached on a restructuring model for PANI, AID could finance some or all of the effort.

Component 10.A: Transportation

Recommendation: The Ministry should consider beginning immediate contingency planning for new permanent regional vehicle maintenance shops. This planning must take into account the fact that the temporary vehicle maintenance shops

are inadequate and must not be allowed to become permanent shops. Prefabricated buildings may offer a relatively rapid and workable permanent solution to house such shops as a step in addressing the urgent maintenance problems which exist in the region. A cost-benefit analysis of the various options would be a logical start.

Recommendation: Each region and area where vehicles are based should have a person designated as vehicle control administrator. This person should have training in administration and a basic understanding of vehicle scheduling and maintenance requirements.

Recommendation: Mechanic and mechanic helper positions should be upgraded to be competitive with the private sector, thus training by the MOH would not be wasted, due to heavy turnover of staff.

Recommendation: In order to increase administrative control and flexibility, consideration should be given to developing a separate budget for the Transportation Division. AID would have a separate Project component and the MOH budget would have a line item for transportation.

Recommendation: A cost-benefit analysis could be used to determine the best method to break the spare parts logjam. There are at least three alternatives to be considered. The first is to continue under the present system. The second would be to restructure Government purchasing procedures to assure smooth and timely receipts of needed parts. The third would entail contracting the majority of spare parts supply to private contractors.

Restructuring of the present system will require both changes in the purchasing system at the national level, and development of increased flexibility at the regional level. Even though local purchases may be higher on a unit cost basis than costs for parts through a national system, the loss of service of disabled vehicles and the eventual loss of serviceable vehicles to exposure and cannibalization may greatly outweigh these higher unit costs.

The third alternative could involve competitive bidding by private suppliers for a national parts supply contract for a specified number of years. This

approach has the disadvantage of a considerable elapsed time needed to demonstrate savings.

Component No. 11: Maintenance

Recommendation: The maintenance supervisor in each region should assure that all new health care providers assigned to CESAMOs and CESARs are trained in cold chain norms and procedures.

Recommendation: The Project objective in the maintenance section lists maintenance for microscopes, refrigerators, sterilizers, incubators, stoves and vehicles. The Project to date has concentrated on refrigerators and vehicles.

AID and the MOH should determine the operational priority in these remaining objectives. If these other items are to be maintained, additional resources should be identified.

Recommendation: A number of important problems were identified which are not reflected in the logframe. They include: (1) inadequate supervision at the regional level; (2) lack of effective supervision lines between the central level and the regions; (3) administrative and management problems resulting from a lack of a separate budget for the maintenance division; (4) a potential serious loss of trained technicians to the private market due to lower pay levels for government personnel; (5) inadequate provision of tools and maintenance equipment; and (6) the low priority given to facilities maintenance.

Each one of these problems areas should be investigated prior to the design of Health Sector II so that they may be effectively incorporated into its design. Actions which can be taken during Health Sector I to address these problems should be initiated or stepped up.

Component No. 18: Operations Research

Recommendation: The Operations Research Unit should be maintained and strengthened. The research activities it manages, however, should be limited in scale and scope, focusing on practical problems of ongoing Ministry

operations. Large studies should continue to be conducted by contracted organizations.

Component No. 16: Continuing Education

Recommendation: No Project-sponsored training activities should be programmed for 1987. The overriding priority should be to complete, install the projected training information system in all appropriate units and the Division of Human Resources. At present, there is no manner in which to adequately monitor all training activities, nor can plans and decision-making be justified with such a meager source of documentation.

Component No. 15: Extension of Supervision

Recommendation: To have an efficient and fully functional supervision system, equal and comparable standards must be applied to all personnel at all levels throughout the system. Therefore, provisions must be made to conduct formal and regular supervision activities in logistics, maintenance and transportation. Also, regularly scheduled supervision visits should be made to the area from the region and to the regions by the normative and administrative support directors from the central level.

Recommendation: It should be noted that, at present, the information derived from supervision activities conducted from the area to health center to community is very useful in determining local priorities and needs, including training, logistics, and supplies. Once all levels of the MOH are incorporated into the system it could be the most effective management tool for overall program operations and decision-making. Therefore, the team strongly suggests that formal group training in supervision should not be conducted until the operation manuals and supervision forms for the remaining two levels (region to area, and central to region) are completed.

Recommendation: In an attempt to overcome the persistent and ever-present limitations on effective supervision at the levels where it is being conducted, it may be necessary to limit on-site, one-on-one supervision. This would place more emphasis on paper monitoring or group supervision sessions normally conducted in the area office at the end of the month.

Component No. 12: Management and Planning

Information Systems:

Recommendation: Ministry officials should reconsider the heavy dependence on a centralized data processing capacity. With low cost and wide usability of micro-computer equipment it is recommended that processing capacity be placed at points where data will be used for operational decision making. Measures should be sought to reduce the heavy burden of hand tabulation and hand processing that are now the responsibility of health service providers.

Local Programming:

Recommendation: While conceptually this is a good mechanism for strengthening planning capability at local levels, it is recommended that AID funding should not be provided until an information system is in place and functioning, and until regionalization is better supported by the MOH.

Management Development:

Recommendation: AID and the MOH should consider the possibility of sending several mid-level administration personnel for long-term training in public administration or health administration. A mix of regional level and central level administrative personnel should be considered as candidates.

Cost Analysis:

Recommendations: Some specific measures should be taken to generate more interaction between MOH and MSH on the issues of cost recovery and cost control. This would build on the work already accomplished.

Impact on Women:

Recommendation: Recognition of improved capacity and increased responsibility of nurse auxiliaries should take the form of better salaries and the

establishment of possible career steps within the structure of the Ministry. If supervisory level positions were established for nurse auxiliaries it would allow graduate nurses, an especially scarce resource, to be utilized elsewhere.

#### Environmental Impact

The focus of Health Sector I is not directed towards environmental sanitation, although vector control has considerable environmental implications. The storage and use of insecticides for house spraying, the eradication of insect breeding places, both in homes and over larger areas, are environmental concerns.

In at least two regions, it was found that temporary storage facilities for insecticides posed a public health hazard because of their proximity to humans.

Recommendation: It is recommended that a survey be made of insecticide storage and, where it is deemed to constitute a health hazard, that other storage areas be found.

It is also recommended that more attention be paid by the Project to destroying stagnant water and removing garbage. These items not only serve as breeding places for disease carrying vectors, but play a role in the transmission of other diseases.

### VIII. LESSONS LEARNED

1. A project with as many components as Health Sector I required establishment of coordinating and monitoring mechanisms. This was done in this case by establishment of the PCU. The PCU or a new unit should, however, be fully institutionalized into the MOH with appropriate authority to direct the Project.
2. The "management by objectives" approach, while time consuming, can lead to improved outputs.
3. The participatory style of Project management allows problem recognition and the formulation of solutions to take place earlier, before problems become larger and solutions more difficult.
4. External conditions, political and economic, beyond the Project's ability to control, should be anticipated and reckoned with, during design and implementation.
5. The Project will not show immediate, quantifiable results on health status due to its heavy emphasis on management aspects. Also, various components of the Project did not progress as rapidly as others. Since the team feels that the Project has attempted to accomplish too much, too quickly, it would seem necessary to establish new priorities based on a scaled-down approach to accomplishments. All of this should, of course, be based on the needs and desires of the GOH in general, and the MOH in particular.
6. Major construction is not within the present capacity of the Ministry of Health. The experience with the construction of warehouses and work shops points out the problems and delays associated with this activity in a developing country. In light of the fact that barely 5 percent of AID-allocated construction money has been actually spent, it seems apparent that neither the MOH, nor USAID had any grasp of the complexities and difficulties involved in health facility construction. This type of activity

should perhaps be relegated to the IDB or World Bank, institutions with a broader background in the field. In the event this is not possible, AID contracting modes and U.S. contractors should be considered if the size of the construction program warrants it.

7. In projects such as HS-I, it is necessary to continuously assess the project's level of effort for both the USAID and TA contractors, so that the workload does not exceed managerial capacity. Complex, management-oriented projects tend to require more administrative oversight than normally associated with a basic health improvement project. The alternative is fewer project activities at any one time.

**ANNEXES**

- A. List of publications reviewed by evaluation team.
- B. List of Health Sector related surveys, 1980-86.
- C. Table showing annual slides examined and indices.
- D. Table showing index of positive malaria cases detected -- by population, 1981-85.
- E. Graph showing annual index of slides examined and cases detected, 1980-85.  
Graph showing annual index of cases of plasmodium falciparum, 1980-85.
- F. Charts showing MOH levels of Health care (2).
- G. Organigrams of central MOH in 1984 and 1986 showing differences in structure.
- H. 1986 organigram of Division de Recursos Humanos, Division de Educacion de Salud, Division de Epidemiologia, Direccion de Planificacion, Estructura Organizativa de las Regiones Sanitarias, Estructura Organizativa de los Niveles por Regiones y Areas Sanitarias and Organigramas de la Division de Mantenimiento.
- I. Republica de Honduras, Ministerio de Salud Publica, Division Politica de Salud, 1985 (Shows the 8 sanitary regions).
- J. Ministerio de Salud Publica, Infraestructura Fisica de Salud y Recursos Humanos, 1985.
- K. Logical Framework from amendment No.3, Health Sector I.
- L. List of Persons Visited.

M. Government of Honduras, Annual National Budget.

N. Health Sector I Project: AID Pipeline Summary.

O. Recurrent Cost Analysis.

P. Ministry of Health, Annual National Budget.

Q. Attentions by Health Centers.

R. Cost Recovery at CESAMOs.

S. Ministry of Health, Actual Budget Expenditures,  
Including External Funds.

T. Evaluation Statement of Work.

1285D/8.86

PUBLICATIONS

AID April 10, 1986	Draft Action Plan/AID FY/1987/88
AID July 1984	Project Evaluation Summary, Guidelines
AID No date	Health Sector I PP Amendment
AID FY 1987/88	Action Plan for Honduras (FP and Health Components)
ASHONPLAFA 1985	Informe de labores 1985
Birch and Davis Associates, Inc. June 1984	Administrative Analysis Report of Health Sector I Project for Agency for International Development Mission to Honduras Project Manager
CELADE, SAN JOSE Septiembre de 1985	(EDENE II 1983) Encuesta Demográfica Nacional de Honduras. Informe General
CONSUPLANE 1982	Plan Nacional de Desarrollo. Plan de Salud 1982-1986
CONSUPLANE Noviembre 1982	(Volumen II Plan Global). Plan Nacional de Desarrollo - CONSUPLANE 1982-1986
CONSUPLANE 1982-1986	Plan de Salud Consejo Superior de Planificación Económica
CONSUPLANE Diciembre 1985	Monografía de la Población de Honduras CONSUPLANE
EDMONDS, Scott September 1985	Mass Media and Health Practices Project: Honduras AID Technology Transfer Series Report
HERNANDEZ, Orlando May 5, 1984	PES Review Memo. Mission Evaluation Review Committee Memorandum

ANNEX A (Cont'd)

LEVY, Irwin, LAC/DR  
December 10, 1984

Information Memorandum for the Assistant  
Administrator (LAC): Honduras-Health Sector I  
Project Paper Amendment (522-0153)

MANAGEMENT SCIENCES FOR HEALTH  
1983

Case Studies. Health Services Financing  
Alternatives

MANAGEMENT SCIENCES FOR HEALTH  
Julio a Diciembre 1985

Reporte Semestral Julio a Diciembre de 1985.  
Proyecto: Sector Salud I. Contrato No.  
522-0153-C-00-5397-00

MANAGEMENT SCIENCES FOR HEALTH  
September 1985

Plan de Trabajo, Agosto a Diciembre 1985. Proyecto  
Sector Salud I

MANAGEMENT SCIENCES FOR HEALTH  
Febrero 1986

Documento de Observaciones que Creemos Importantes  
para las Nuevas Autoridades del Ministerio de Salud  
Pública

MANAGEMENT SCIENCES FOR HEALTH  
No date

Análisis Técnico de Informe de Análisis  
Administrativo Proyecto Sector Salud I Presentado  
por Birch Y Davis Associates.

Also in English, attached

MANAGEMENT SCIENCES FOR HEALTH  
Enero de 1986

Informe Mensual. Management Sciences for Health -  
Contrato No. 522-0153-C-00-5397-00 Proyecto Sector  
Salud I

MANAGEMENT SCIENCES FOR HEALTH  
1986

Plan de Trabajo 1986, Proyecto: Sector Salud I -  
Contrato No. 522-0153-C-00-5397-00

MANAGEMENT SCIENCES FOR HEALTH  
No date

Perfil Administrativo de los Centros de Salud  
Rural. Questionnaire

MANAGEMENT SCIENCES FOR HEALTH  
1986

Análisis Preliminar del Presupuesto 1986 para el  
Ministerio de Salud Pública

ANNEX A ( Cont'd)

MANAGEMENT SCIENCES FOR HEALTH

No date Propuesta Técnica Presentada en Respuesta a  
Socilitud de Presentación de Propuestas Honduras  
85-002 para Asistencia Técnica: Proyecto Sector  
Salud I: Provento USAID 522-0153

Volume I  
Volume II (Anexos)

Memo de Vicente Díaz  
March 21, 1986

Incorporation of Questions in Evaluation Sows

MINISTERIO DE SALUD PUBLICA  
año 1973

Anuario Estadístico

MINISTERIO DE SALUD PUBLICA  
Año 1975

Memoria Anual de Actividades. Situación de Salud,  
Recursos, Realizaciones, Regiones de Salud

MINISTERIO DE SALUD PUBLICA  
Año 1976

Memoria Anual de Actividades

MINISTERIO DE SALUD PUBLICA  
Año 1979

Boletín de Estadística e Información de Salud.  
Estadísticas de Atención ambulatoria. División de  
Planificación Sectorial

MINISTERIO DE SALUD PUBLICA  
Año 1979-1980

Boletín de Estadística e Información de Salud.  
Estadísticas Hospitalarias. División de  
Planificación Sectorial de Salud.

MINISTERIO DE SALUD PUBLICA  
Año 1980

Boletín de Estadística e Información de Salud.  
Estadísticas de Atención Ambulatoria. División de  
Planificación Sectorial

MINISTERIO DE SALUD PUBLICA

Enero-Diciembre 1980-1981

Boletín de Estadística e Información de Salud.  
Estadísticas Hospitalarias. División de Planifi-  
cación

MINISTERIO DE SALUD PUBLICA  
Año 1980

El Guardián de Salud, Programa de Adiestramiento,  
Actividades, Tareas

MINISTERIO DE SALUD PUBLICA

July 31, 1980

Convenio de Proyecto  
Volumen 2 de Documentos de Apoyo al Primer Informe  
Oficial del Proyecto AID 522-0153: Desarrollo  
Institucional y Mejoramiento de Recursos Humanos

ANNEX A (Cont'd)

MINISTERIO DE SALUD PUBLICA  
July 1980

Convenio de Préstamo para un Proyecto entre la República de Honduras y los Estados Unidos de América para Programa I del Sector Salud

Documento de Apoyo al Primer Informe Oficial del Programa AID 522-0153

MINISTERIO DE SALUD PUBLICA  
September 30, 1980

Desarrollo Institucional y Mejoramiento de Recursos Humanos: Documento de Apoyo al Primer Informe Oficial del Proyecto AID 522-0153  
Volumen IV: Enmiendas  
Acuerdo de Enmienda No. 1 entre la República de Honduras y los Estados Unidos de América para Programa I del Sector Salud

March 6, 1981  
September 6, 1981  
September 29, 1981  
No date  
No date  
September 30, 1982  
September 29, 1982  
December 30, 1983  
June 7, 1984

Acuerdo de Enmienda No. 2  
Acuerdo de Enmienda No. 3  
Acuerdo de Enmienda No. 4  
Acuerdo de Enmienda No. 5  
Acuerdo de Enmienda No. 6  
Acuerdo de Enmienda No. 7  
Acuerdo de Enmienda No. 8  
Acuerdo de Enmienda de Proyecto No. 9  
Enmienda de Convenio de Proyecto No. 10

MINISTERIO DE SALUD PUBLICA  
Año 1981

Boletín de Estadística e Información de Salud. Estadísticas de Atención Ambulatoria. División de Planificación Sectorial de Salud

MINISTERIO DE SALUD PUBLICA  
1o. de Abril al  
31 Dic. 1981

Primer Informe Anual. Proyecto 522-0153  
Préstamo IAD 522-U-042

MINISTERIO DE SALUD PUBLICA  
Año 1981

ENP-1981 Encuesta Nacional de Prevalencia - Anticonceptivos

MINISTERIO DE SALUD PUBLICA  
Año 1982

Boletín de Estadística e Información de Salud. Estadísticas de Atención Ambulatoria. División de Planificación Sectorial

MINISTERIO DE SALUD PUBLICA  
1o. Enero al  
31 de Diciembre 1982

Segundo Informe Anual. Proyecto 522-0153  
Préstamo AID 522-U-042

ANNEX A (Cont'd)

- MINISTERIO DE SALUD PUBLICA  
Enero-Diciembre 1982-1983 Boletín de Estadística e Información de Salud.  
Estadísticas Hospitalarias. División de  
Planificación
- MINISTERIO DE SALUD PUBLICA  
1o. Enero al Tercer Informe Anual. Proyecto 522-0153  
31 de Diciembre 1983 Préstamo AID 522-U-042
- MINISTERIO DE SALUD PUBLICA  
Año 1983 Boletín de Estadística e Información de Salud.  
Estadísticas de Atención Ambulatoria. División de  
Planificación Sectorial
- MINISTERIO DE SALUD PUBLICA  
1983 Plan Nacional de Salud.  
Manual. Subsistema Nacional de Suministros.  
CESAMO, CESAR, Nivel Local
- MINISTERIO DE SALUD PUBLICA  
1983 Manual de Normas para Vigilancia Epidemiológica
- MINISTERIO DE SALUD PUBLICA  
Enero-Diciembre 1983-1984 Boletín de Estadística e Información de Salud.  
Estadísticas Hospitalarias. División de  
Planificación
- MINISTERIO DE SALUD PUBLICA  
1983 Plan Nacional de Salud. Manual. Administración  
de Suministros Almacén Central y Almacenes  
Regionales
- MINISTERIO DE SALUD PUBLICA  
Año 1984 Boletín de Estadística e Información de Salud.  
Estadísticas de Atención Ambulatoria. División de  
Planificación Sectorial
- MINISTERIO DE SALUD PUBLICA  
15 de Julio de 1984 Sistema de Información de Red de Frío
- MINISTERIO DE SALUD PUBLICA  
1o. Enero al 31 de Cuarto Informe Anual. Proyecto 522-0153  
Diciembre de 1984 Préstamo AID 522-U-042
- MINISTERIO DE SALUD PUBLICA  
1984 Hospital Contr 1984
- MINISTERIO DE SALUD PUBLICA  
1984 - 1985 Boletín de Estadística e Información de Salud.  
Estadísticas Hospitalarias

ANNEX A (Cont'd)

- MINISTERIO DE SALUD PUBLICA  
1985 Boletín de Estadística e Información de Salud.  
Estadísticas de Atención Ambulatoria
- MINISTERIO DE SALUD PUBLICA  
De 1980 a 1985 Cronograma, Programación y Ejecución  
Proyecto 522-0153
- MINISTERIO DE SALUD PUBLICA  
1980 - 1985 Cronograma de Trabajo  
Proyecto 52-0153
- MINISTERIO DE SALUD PUBLICA  
1 de Enero al 31 de Quinto Informe Anual. Proyecto 522-0153  
Diciembre de 1985 Préstamo AID 522-U-042
- MINISTERIO DE SALUD PUBLICA  
1 Abril 1981 al 31 de Informe Consolidado. Proyecto 522-0153  
Diciembre de 1985 Préstamo AID 522-U-042
- MINISTERIO DE SALUD PUBLICA  
DIVISION CONTROL DE VECTORES  
DEPTO. DE ENTOMOLOGIA  
Año 1985 Informe de Memoria Anual de Actividades del  
Departamento de Entomología de la División de  
Control de Vectores
- MINISTERIO DE SALUD  
Septiembre de 1985 Proceso de Programación Local. Manual Operativo  
del Sistema de Información. Segunda Edición
- MINISTERIO DE SALUD  
1985 Manual de Normas de Almacenamiento de  
Anticonceptivos Suministrados por el Ministerio de  
Salud Pública.  
  
Programa de Planificación Familiar y Lactancia  
Materna. División Materno Infantil
- MINISTERIO DE SALUD PUBLICA  
Año 1985 Política de Recursos Humanos para la Salud de  
Honduras
- MINISTERIO DE SALUD PUBLICA  
1985 Evaluaciones-Abril/Junio/Julio/Septiembre 1985
- MINISTERIO DE SALUD PUBLICA  
Año 1985 Auxiliary Training 1985
- MINISTERIO DE SALUD PUBLICA  
Enero/Marzo 1986 Incomplete First Quarter Progress  
ESI 1986. Waiting for more

ANNEX A (Cont'd)

- MINISTERIO DE SALUD PUBLICA  
Febrero 1986                      Situación Actual y Proyección.  
Programa de Saneamiento Básico
- MINISTERIO DE SALUD PUBLICA  
No date                              Programa Nacional de Planificación Familiar y  
Lactancia Materna. Normas de Programas de  
Planificación Familiar y Lactancia Materna.  
Financiado por el Proyecto 522-0253    A.I.D.
- MINISTERIO DE SALUD PUBLICA  
Date 1986                            M.S.P. División Materno Infantil, Programa de  
Planificación Familiar y Lactancia Materna. Unidad  
#2 Sistema Reproductivo Masculino. Borrador
- MINISTERIO DE SALUD PUBLICA  
May 1986                              División Materno Infantil, Programa de  
Planificación Familiar y Lactancia Materna. Unidad  
#5. Planificación Familiar: Su Efecto en la Salud  
de la Mujer y el Niño. Métodos de Planificación  
Familiar. Borrador
- MINISTERIO DE SALUD PUBLICA  
1986                                    Plan Operativo Anual
- MINISTERIO DE SALUD PUBLICA  
1986                                    Primer Informe Oficial No. 00  
Metas/Realizaciones/Problemática
- MINISTERIO DE SALUD PUBLICA  
1986                                    Primer Informe Oficial  
Cronología del Proyecto No. 0
- MINISTERIO DE SALUD PUBLICA  
No date                                Convenio Enmienda. Desarrollo Institucional y  
Mejoramiento de Recursos Humanos
- MSE  
No date                                El Plan para Uni/Cómputo
- MINISTERIO DE SALUD PUBLICA  
1986                                    Presupuesto Asignado Año 1986. Proyecto 522-0153
- HEALTH SECTOR I  
De 1980 a 1985                        Contents, Immunization, Data, Malaria, and Training  
of Auxiliary Nurses
- REGION SANITARIA METROPOLITANA, Tegucigalpa, D.C.  
Año 1980                                Informe Estadístico

ANNEX A (Cont'd)

REPUBLICA DE HONDURAS: MINISTERIO DE SALUD PUBLICA  
Agosto 1983  
Alternativas de Financiamiento de los Servicios de Salud  
  
A Study done with the assistance of Management Sciences for Health

REPUBLICA DE HONDURAS: MINISTERIO DE SALUD PUBLICA  
Agosto 1985  
Proceso de Programación Local. Documento Básico, Segunda Edición

STANFORD UNIVERSITY ACT.  
August 1983  
Anti-Malaria  
Final Report on the Evaluation of the PROCOMSI II Anti-Malaria Project

STANFORD UNIVERSITY ACT.  
June 1985  
The Mass Media and Health Practices Evaluation in Honduras

STANFORD UNIVERSITY ACT.  
August 1985  
Tuberculosis Campaigns  
Final Report on the Evaluation of the PROCOMSI II

STANFORD UNIVERSITY ACT.  
September 1985  
Cost-Effectiveness of the Mass Media and Health Practices Projects

STANFORD UNIVERSITY ACT.  
September 1985  
Final Report of the Evaluation of the PROCOMSI II Diarrhea and Immunizations Campaigns

USAID  
July 31, 1980 -  
February 3, 1986  
Project Agreement between the Republic of Honduras and United States of America for Health Sector I. Project Agreements and Amendments Nos. 2 to 13

USAID/HONDURAS  
23-26 de Abril de 1985  
Informe Monitoria del Proyecto Sector Salud I No. 522-0153

USAID/HONDURAS  
15-17 de Julio de 1985  
Informe Monitoria del Proyecto Sector Salud I No. 522-0153

USAID/HONDURAS  
19-22 de Agosto de 1985  
Informe Monitoria del Proyecto Sector Salud I No. 522-0153

ANNEX A (Cont'd)

USAID/HONDURAS 16-20 de Sept. de 1985	Informe Monitoria del Proyecto Sector Salud I No. 522-0153
USAID/HONDURAS 30 de Octubre al 1 de Noviembre de 1985	Informe Monitoria del Proyecto Sector Salud I No. 522-0153
USAID/HONDURAS 5-6 de Noviembre de 1985	Informe Monitoria del Proyecto Sector Salud I No. 522-0153
USAID May 16, 1986	Memo from Daniel Cruz to Director. Rotating Fund for Health Sector I Project
USAID August 31, 1984	Project Agreement Amendment No. 11 for Health Sector I Between the Republic of Honduras and the United States of America
USAID/HONDURAS December 29, 1984	Health Sector I Project Amendment No. 3
USAID June 7, 1984	Project Agreement Amendment No. 10 for Health Sector I
USAID February 8, 1985	Project Agreement Amendment No. 12 for Health Sector I Between the Republic of Honduras and the United States of America
USAID February 3, 1986	Project Amendatory Agreement No. 13 for Health Sector I Between the Republic of Honduras and the United States of America
USAID February 3, 1986	Project Agreement Amendment No. 13 for Health Sector I
USAID No date	The AID Child Survival Strategy
USAID No date	Issues Paper: Mosquitia Relief and Development Project
USAID No date	Sectoral Summary of Policy Objectives and Achievements: Health, Population and Nutrition

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ANNEX A (Cont'd)

WESTINGHOUSE HEALTH SYSTEMS  
1983

A Health Planning Manual: Prepared for the  
Hashemite Kingdom of Jordan Ministry of Health

Volumes I and II

WESTINGHOUSE ELECTRIC CORPORATION  
December 1983

Westinghouse First Mid-Term Evaluation Health  
Sector I - Honduras

ANNEX B

LIST OF HEALTH SECTOR RELATED SURVEYS 1980-86

Studies

1. Diagnóstico del sector salud en Honduras USAID/Honduras Junio de 1980.
2. An assessment of factors which affect community participation in the Honduras Rural Health System, AID.March,1981.
3. Estudios de alternativas de financiamiento de los servicios básicos de salud en Honduras,Unidad de Ciencia y Tecnología (MSP) Agosto,1983.
4. Corte Evaluativo del Sistema de Información de Red de Frío Unidad De Ciencia y Tecnología (MSP) 1984.
5. Encuesta Nacional Salud Materno Infantil de Honduras, Unidad de Ciencia y Tecnología 1984.
6. La partera tradicional.- Estudio operacional sobre partera empírica en Santa Bárbara-. Región Sanitaria #3, Unidad de Ciencia y Tecnología (MSP) Junio,1985.
7. Evaluación del sistema de suministros de las sales de rehidratación oral en Honduras, Unidad de Ciencia y Tecnología (MSP) Agosto,1984.
8. The Mass Media and Health practices evaluation in Honduras,Stanford University, September, 1985.
9. Evaluation of the Procomsi II tuberculosis campaigns, Stanford University, September, 1985.
10. Final Report on the Evaluation of the Procomsi II. Anti-malaria project. Stanford University, September, 1985.

129

ANNEX B (Cont'd)

11. Cost-Effectiveness of the Mass Media and Health Practices project. Stanford University, September, 1985.
12. Final Report on the Evaluation of the Procomsi II. Diarrhea and Immunization campaigns. Stanford University, September, 1985.
13. Estudio en el personal de salud sobre sus conocimientos actitudes y practicas en relación a las normas de la terapia de rehidratación oral, Unidad de Ciencia y Tecnología (MSP), 1985.
14. Conocimiento-actitudes y practicas sobre Planificación Familiar, en el personal Institucional de Salud, Unidad de Ciencia y Tecnología (MSP), 1985.
15. Evaluación Operativa local de los programas de salud-Mini-encuesta 1986.
16. Estudio de mercado de sales de rehidratación oral, Unidad de Ciencia y Tecnología (MSP), Abril, 1986.
17. Feasibility study of PANI, Management Sciences for Health, June, 1986.

ANNEX C

BUSQUEDA DE CASOS E INDICES DE POSITIVIDAD POR MALARIA

AÑOS 1958 - 1985

REPUBLICA DE HONDURAS

ANO	HABITANTES · AREA MALARICA	MUESTRAS EXAMINA- DAS.	MUESTRAS POSITIVAS	CASOS PF + PZ	IAES	ILP	IPA	IPP
1958	1570162	27061	2049	953	1.72	7.57	1.30	46.51
1959	1632251	66391	6675	3170	4.07	10.05	4.09	47.49
1960	1698047	109677	3517	1737	6.46	5.03	3.25	31.40
1961	1765846	164965	4334	961	9.34	2.63	2.45	19.87
1962	1832044	239655	5750	593	13.08	2.40	3.14	10.31
1963	1895456	264131	7077	680	13.94	2.68	3.73	9.72
1964	1955822	207000	6673	641	10.50	3.22	3.41	9.61
1965	2013627	310301	6952	163	15.41	2.24	3.45	2.34
1966	2083612	360002	17127	1204	17.32	4.75	8.22	7.03
1967	2155047	465590	16152	072	21.61	3.47	7.49	5.40
1968	2230056	504896	15666	4201	26.22	2.68	7.02	27.33
1969	2303650	591544	29584	5528	25.66	5.00	12.83	18.69
1970	2397253	357436	34537	5075	14.91	9.66	14.41	17.01
1971	2468233	256122	48506	4444	10.38	19.00	19.60	9.15
1972	2544767	226579	18651	652	8.90	8.23	7.33	3.50
1973	2627205	226231	8862	239	8.61	3.92	3.37	22.70
1974	2715616	227042	7503	150	10.60	2.61	2.76	2.00
1975	2809233	266923	30289	1070	9.50	11.35	10.70	3.56
1976	2908867	295126	40004	2603	10.15	16.54	16.75	5.03
1977	3015170	264265	39414	1355	8.76	14.92	13.07	3.44
1978	3129011	236650	34554	2541	7.56	14.60	11.04	7.35
1979	3241073	143485	25297	4505	4.43	17.63	7.80	17.01
1980	3360307	175623	43010	6709	5.23	24.49	12.00	15.70
1981	3501863	221022	49377	7048	6.33	22.26	14.10	14.77
1982	3627611	322002	57402	4232	8.00	17.01	15.05	7.36
1983	3756104	336879	57536	2376	9.00	11.14	10.00	6.33
1984	3886505	452184	27332	1589	12.62	6.04	7.0	5.81
1985	4018925	410720	33020	1616	10.21	0.84	8.41	4.77

FUENTE: DIVISION CONTROL DE VECTORES

IAES = M. EX x 100  
M.E. A. MALARICA

ILP = S. POSIT. x 100  
MUESTRAS EXAMINADAS

IPA = M. POSIT. x 1000  
MUESTRAS A. MALARICA

P.F. = CASOS P. FALCIPARUM

IZ = CASOS MIXTOS (PF + PZ).

## ANNEX D

POBLACION, CASOS DE MALARIA E INDICE PARASITARIO ANUALHONDURAS, C.A. 1981 - 1985

REGION	1981			1982			1983			1984			1985		
	Población	Casos	Ipa												
Metropolitana	459923	244	0.5	478577	353	0.7	497658	300	0.6	516894	296	0.6	536411	407	0.7
1	321752	6734	17.8	333213	6483	16.6	344894	4782	13.9	356751	1819	5.1	385370	3396	8.8
2	277315	1865	6.7	286042	2620	9.2	294822	1801	6.1	303878	1096	3.6	312856	1616	4.8
3	1020414	5367	5.3	1061998	8305	8.8	1104908	6412	5.8	149276	3973	2.7	1177479	5543	4.7
4	447216	20697	46.3	460423	18421	40.0	473739	3557	7.5	487068	3915	8.0	500406	6227	10.6
5	336378	1391	4.1	344216	3490	10.1	352004	2933	8.3	359013	2456	6.8	366647	1910	5.2
6	478399	9737	22.7	445689	9817	22.0	463533	10142	21.9	481871	6431	13.3	500693	8203	19.8
7	230468	4362	20.7	217453	7933	36.9	474648	7609	11.9	231756	7346	31.7	239103	5883	24.6
TOTAL	3501863	49377	14.1	3627611	67482	18.8	3756104	37636	10.0	3886505	27332	7.0	4018985	33828	8.4

Fuente: División Control de Vectores.

ANNEX E

GRAFICO No. 14

BUQUEDA DE CASOS DE MALARIA  
INDICE ANUAL DE EXAMENES DE SANGRE  
HONDURAS, C.A. 1980-1985

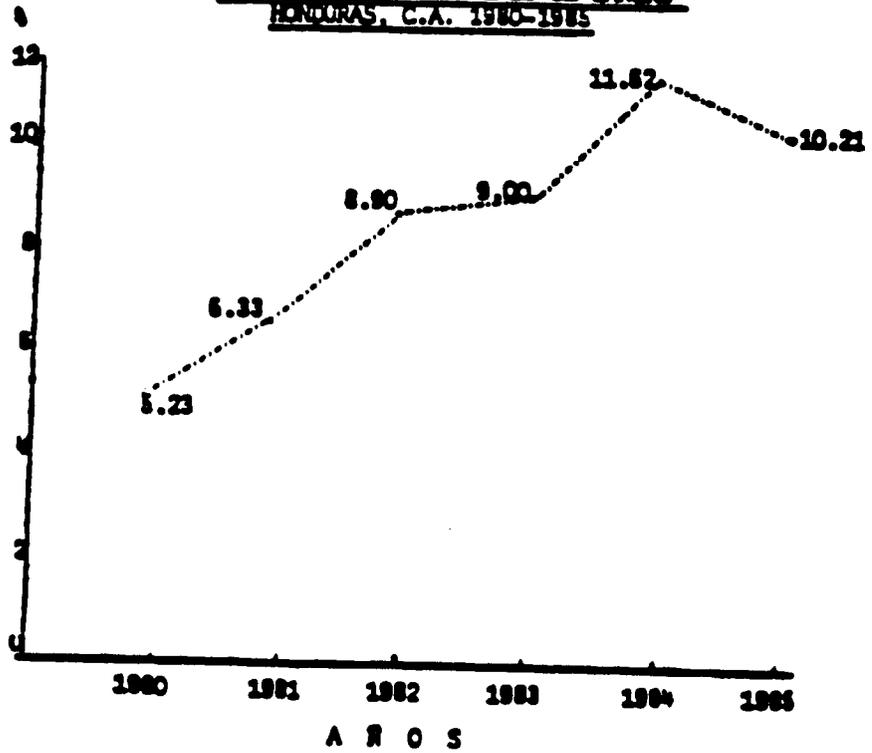
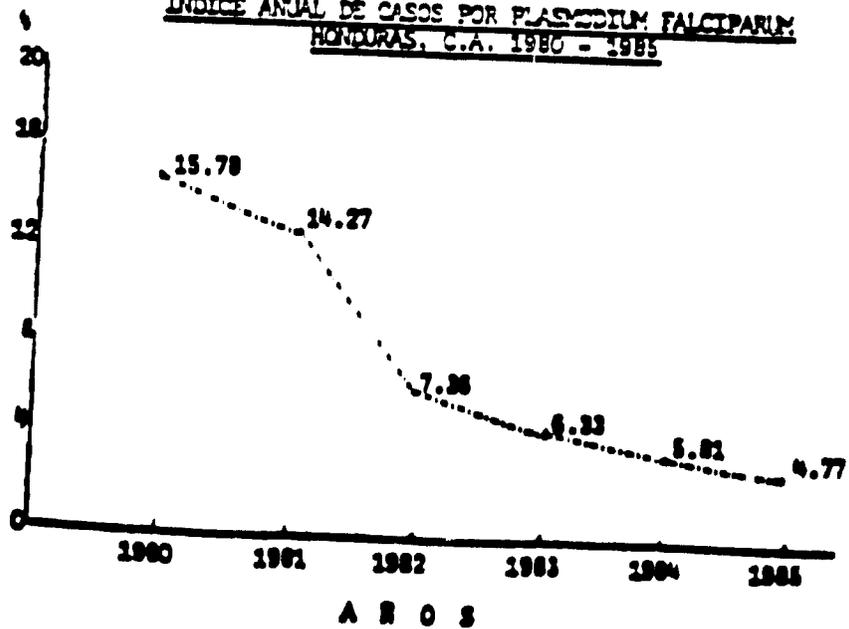


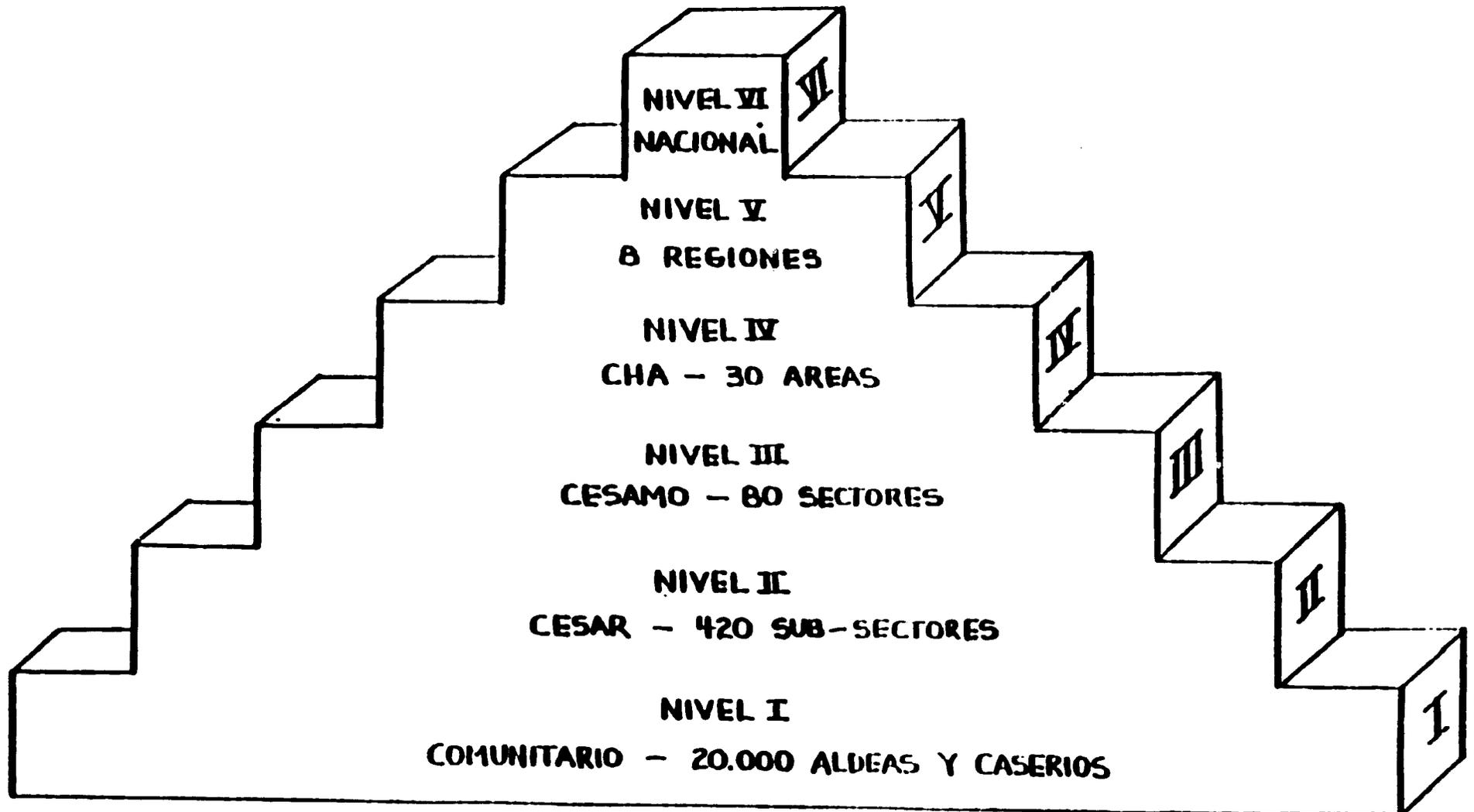
GRAFICO No. 15

INDICE ANUAL DE CASOS POR PLASMODIUM FALCIPARUM  
HONDURAS, C.A. 1980 - 1985



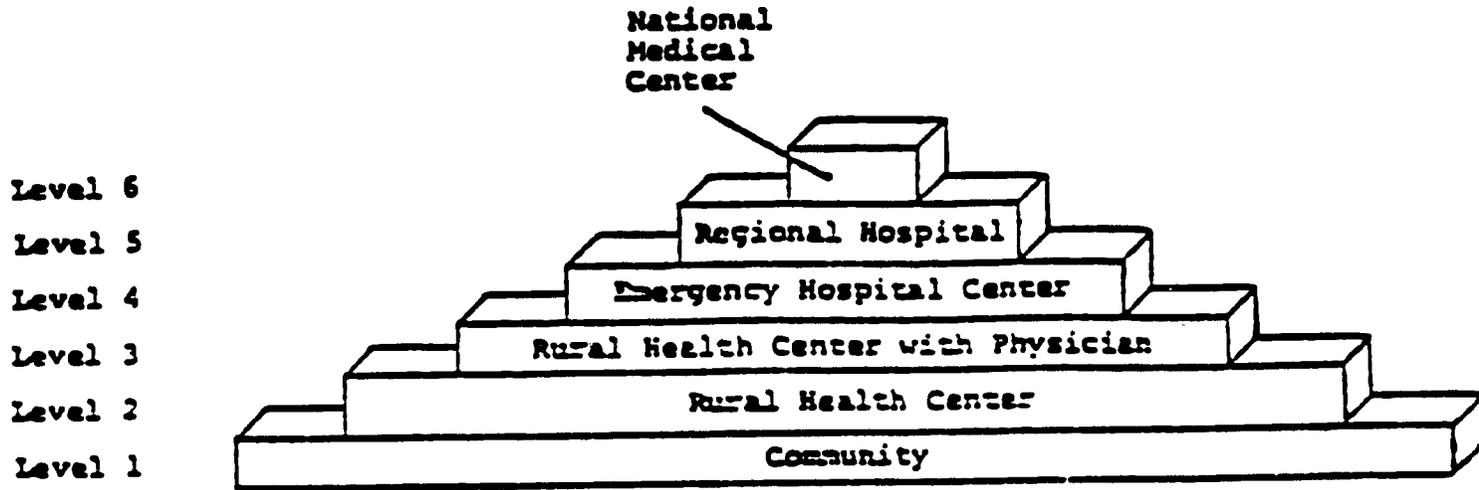
ANNEX F

NIVELES DE ATENCION EN SALUD  
MINISTERIO DE SALUD PUBLICA -- HONDURAS C.A.  
AÑO 1986

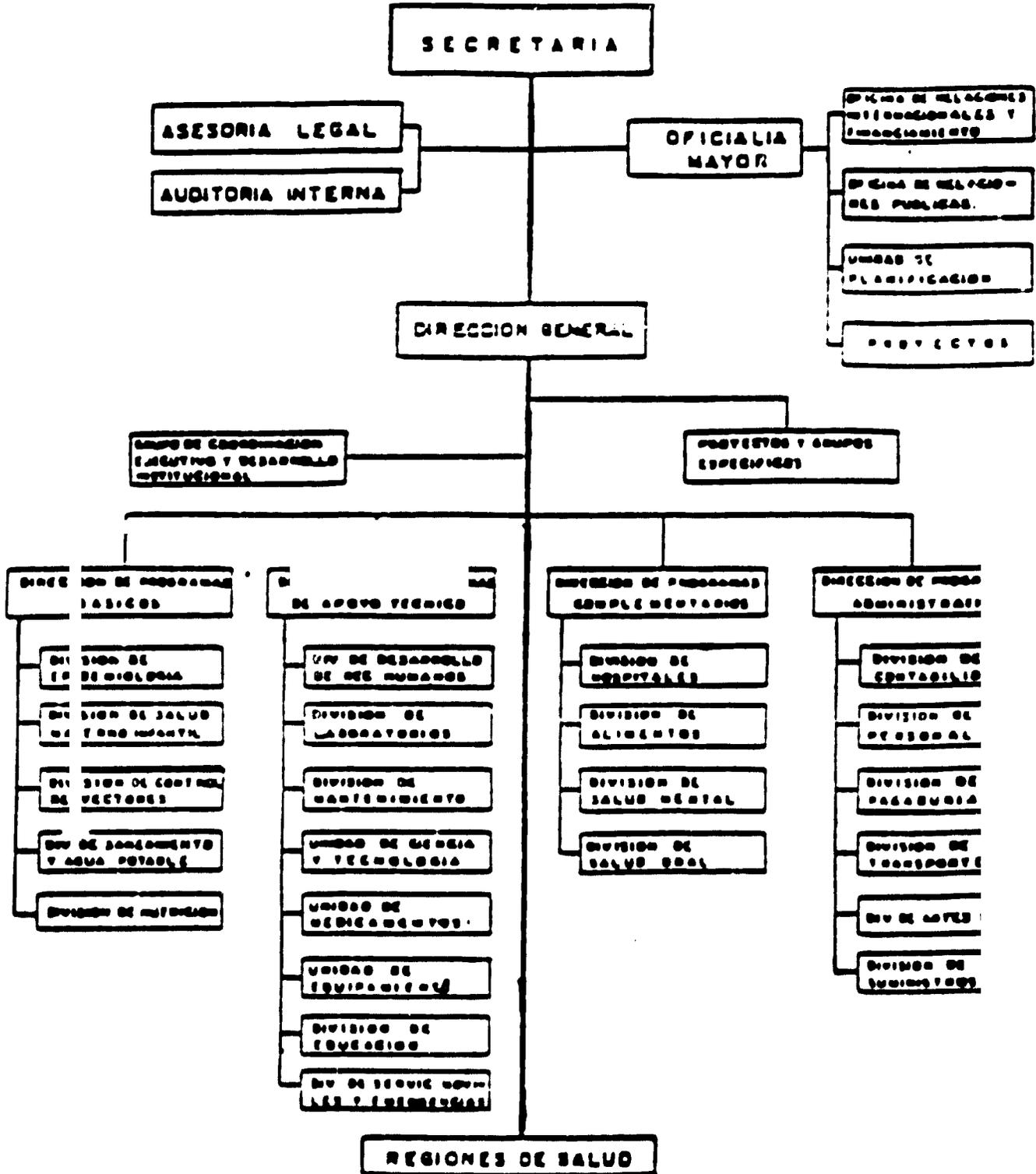


ANNEX F (Cont'd)

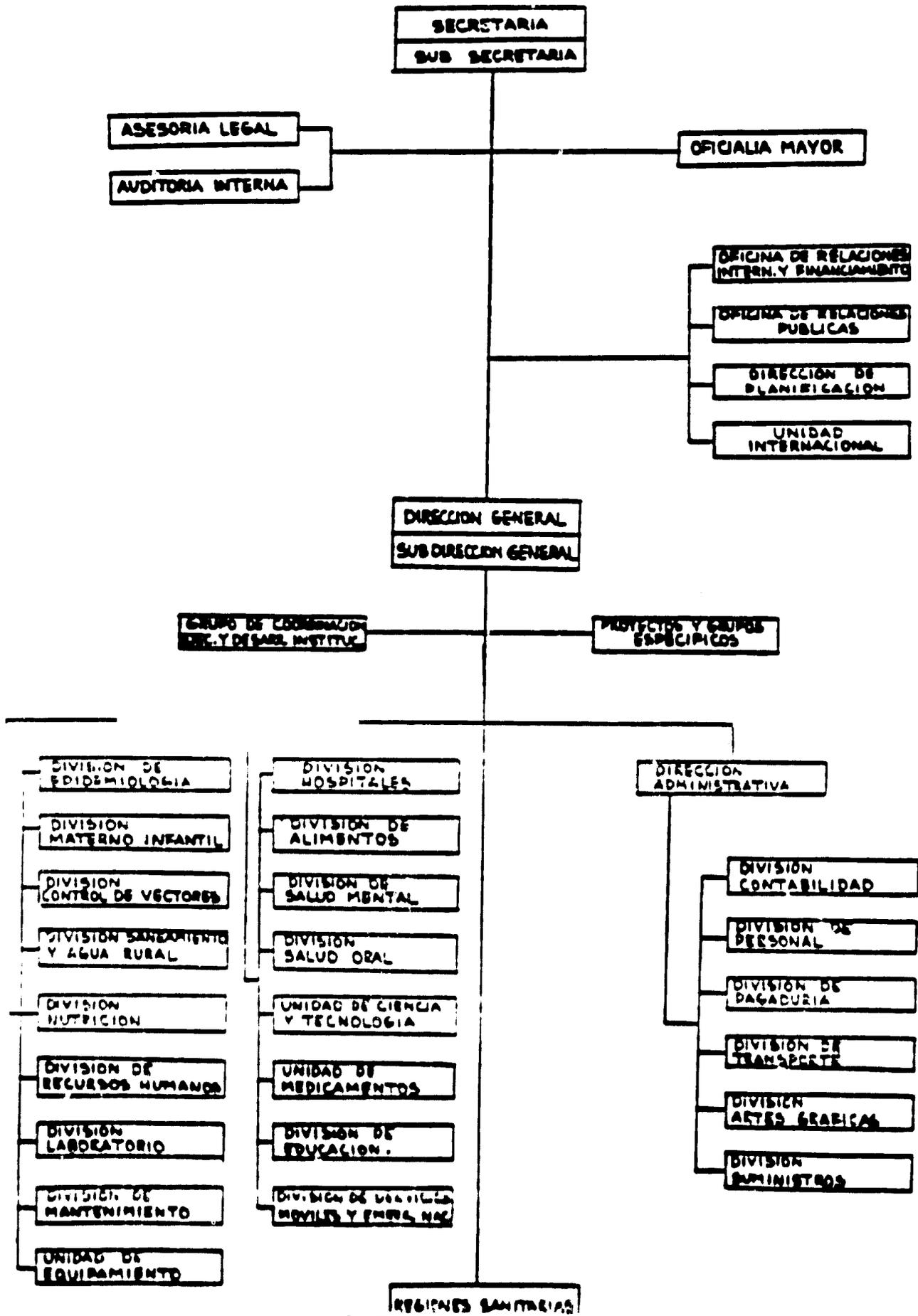
HONDURAS HEALTH SYSTEM



ORGANIGRAMA DEL  
MINISTERIO DE SALUD PUBLICA  
1984



ORGANIGRAMA DEL MINISTERIO DE SALUD PUBLICA  
HONDURAS C.A AÑO 1986

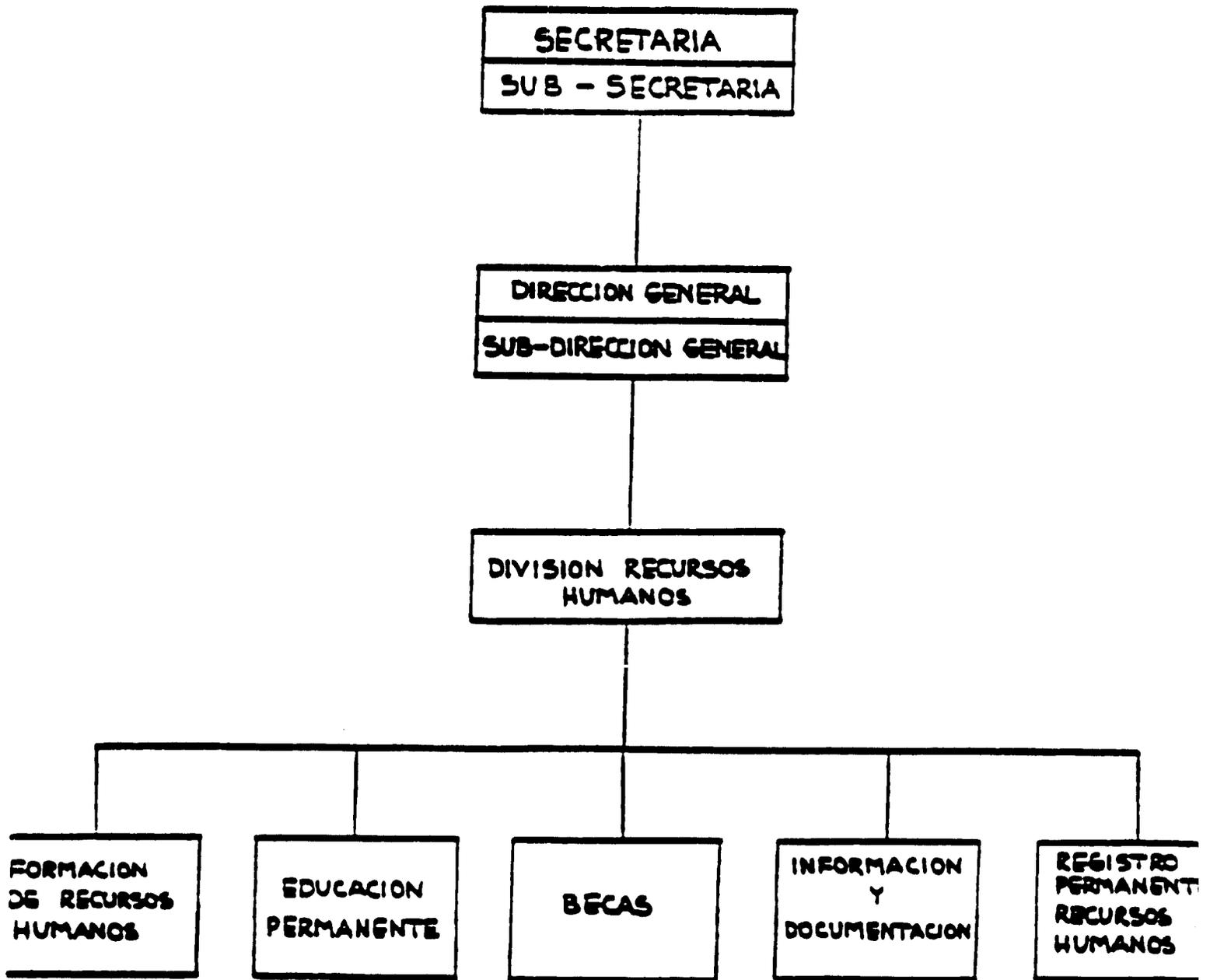


ANNEX H

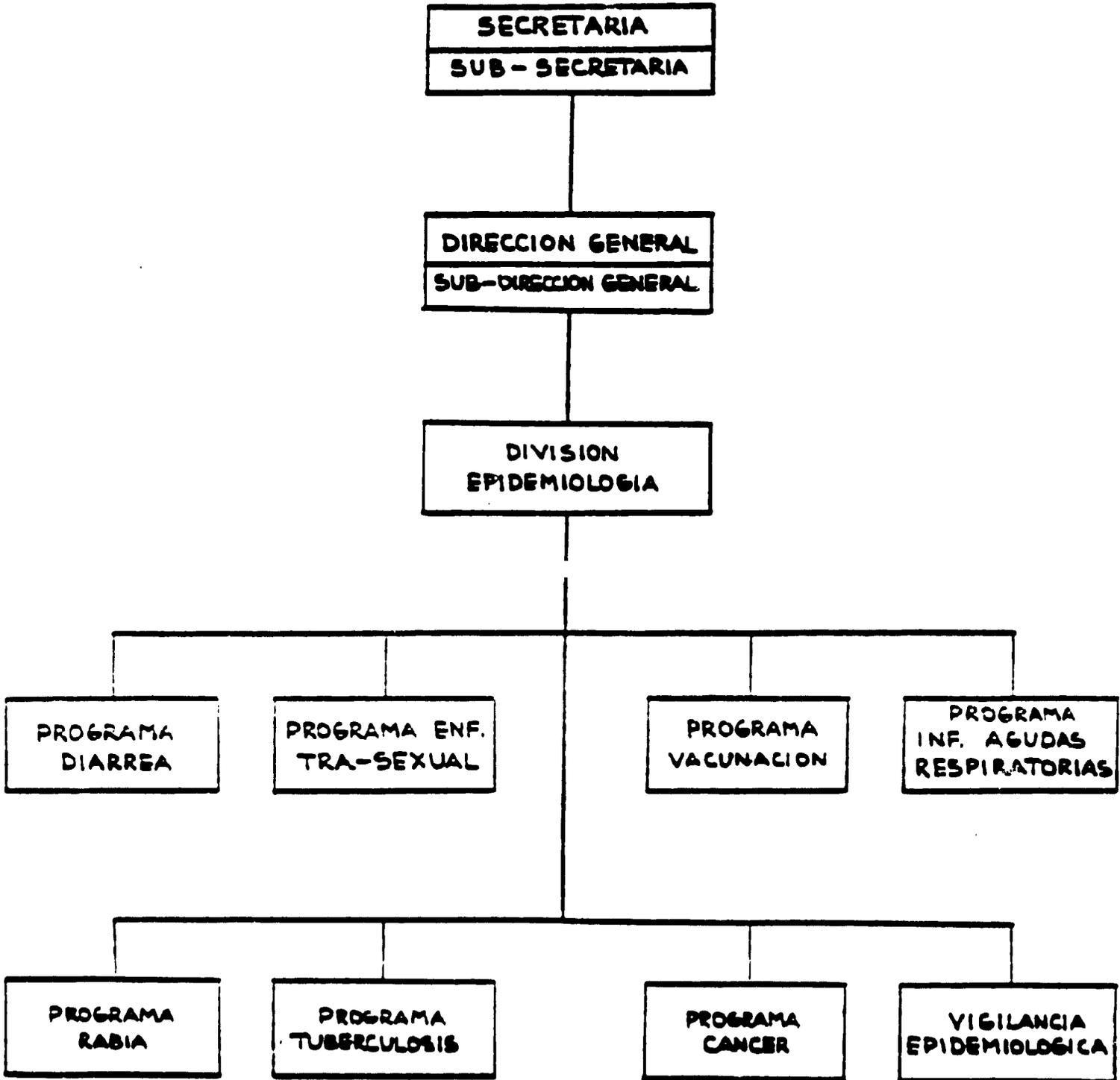
ORGANIGRAMA DE LA DIVISION DE RECURSOS HUMANOS

MINISTERIO DE SALUD PUBLICA - HONDURAS C.A.

AÑO 1986

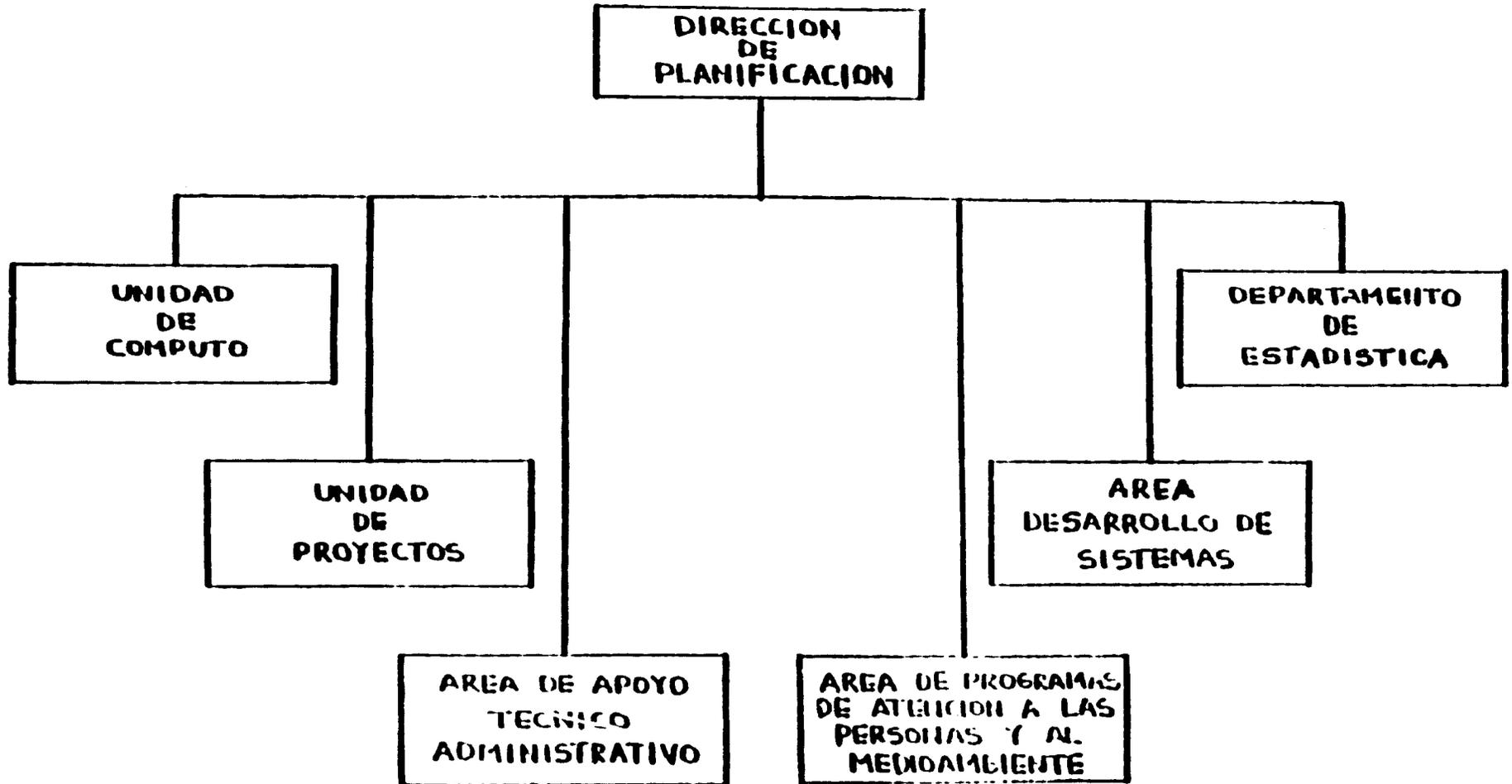


ORGANIGRAMA DE LA DIVISION DE EPIDEMIOLOGIA  
MINISTERIO DE SALUD PUBLICA - HONDURAS C.A  
AÑO 1986

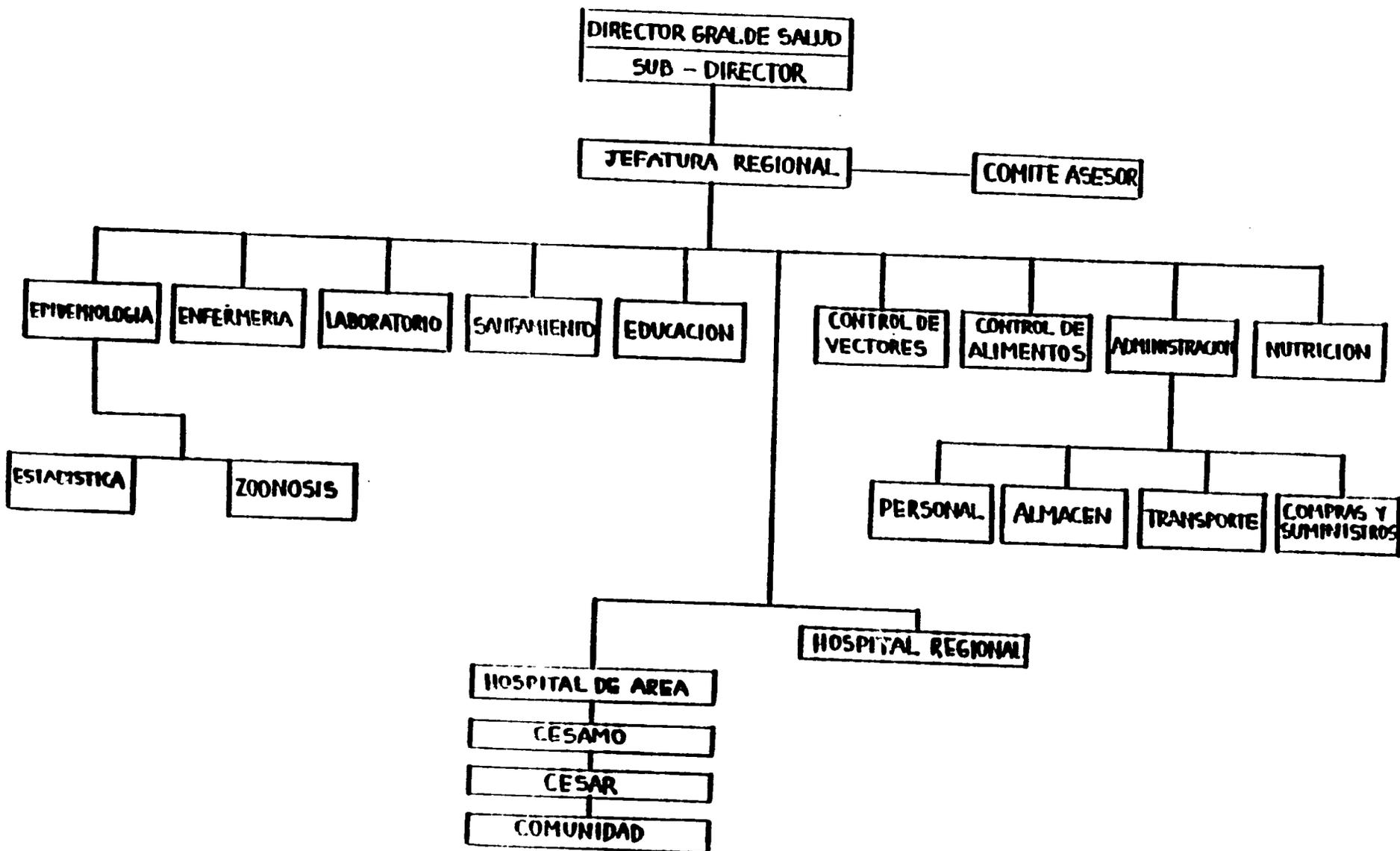


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ORGANIGRAMA DE LA DIRECCION DE PLANIFICACION  
MINISTERIO DE SALUD PUBLICA - HONDURAS C.A.  
AÑO 1986



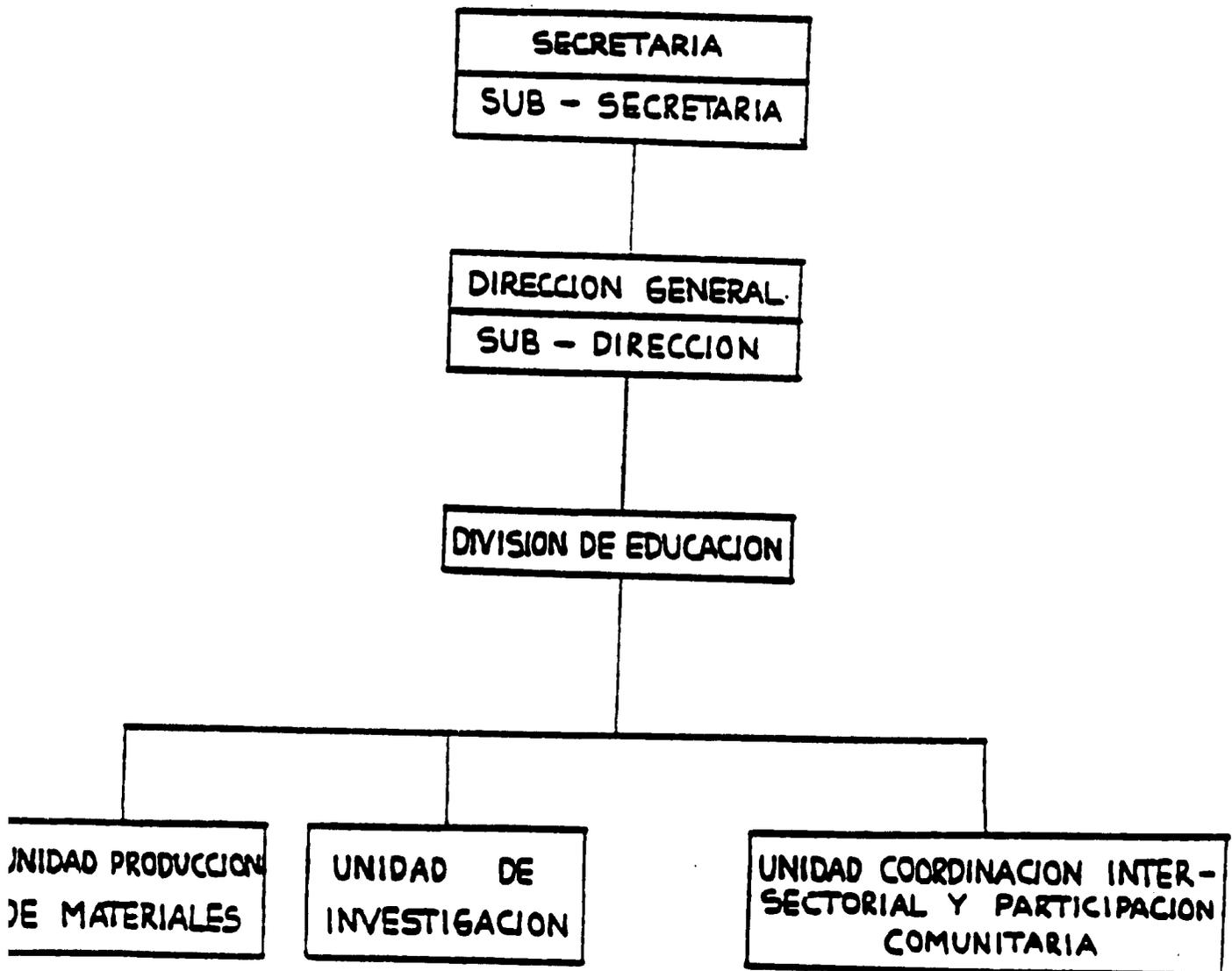
ESTRUCTURA ORGANIZATIVA DE LAS REGIONES SANITARIAS  
MINISTERIO DE SALUD PUBLICA - HONDURAS C.A.  
AÑO 1986



1/11

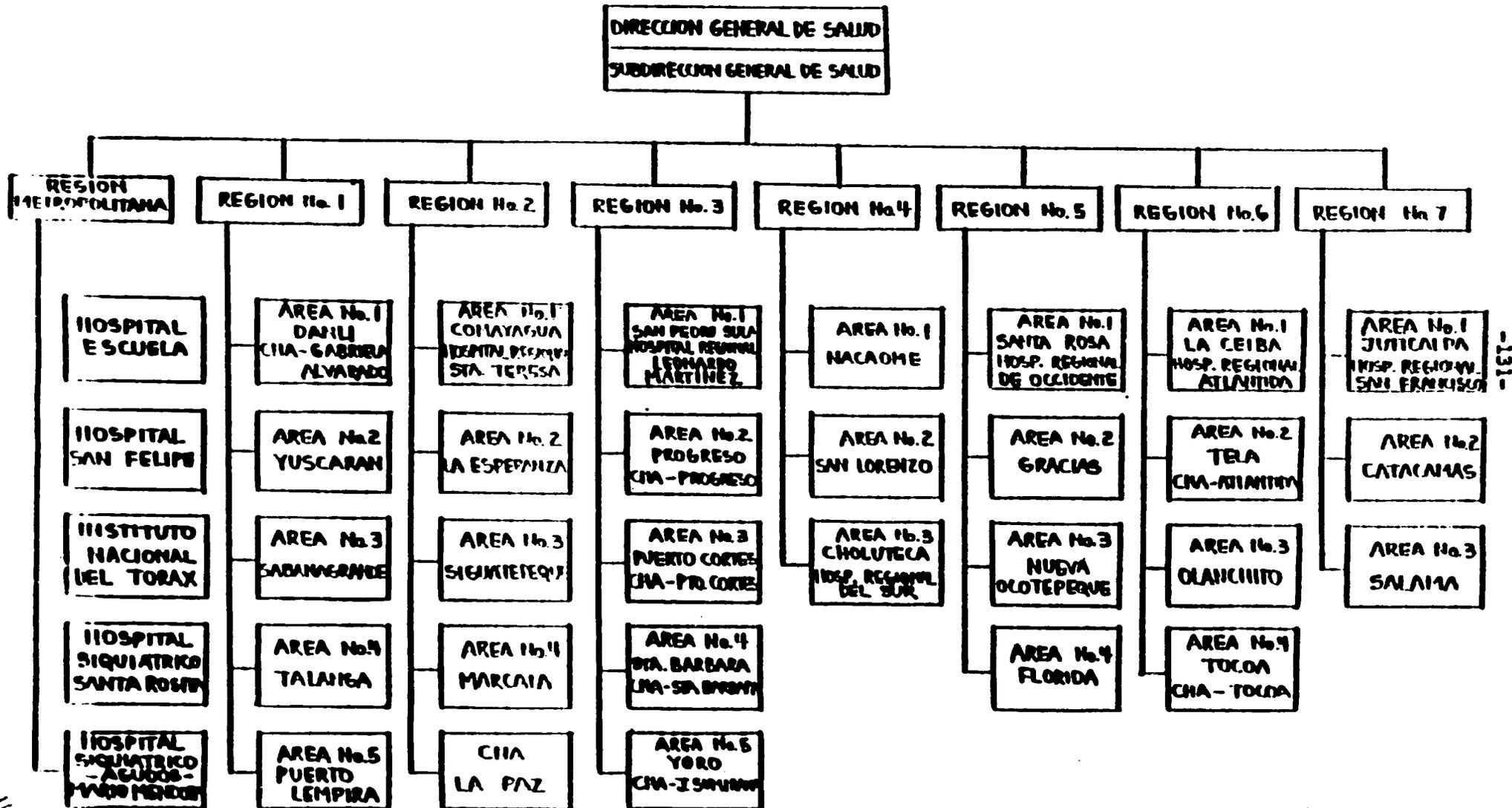
ORGANIGRAMA DE LA DIVISION DE EDUCACION DE SALUD  
MINISTERIO DE SALUD PUBLICA - HONDURAS C.A.

AÑO 1986



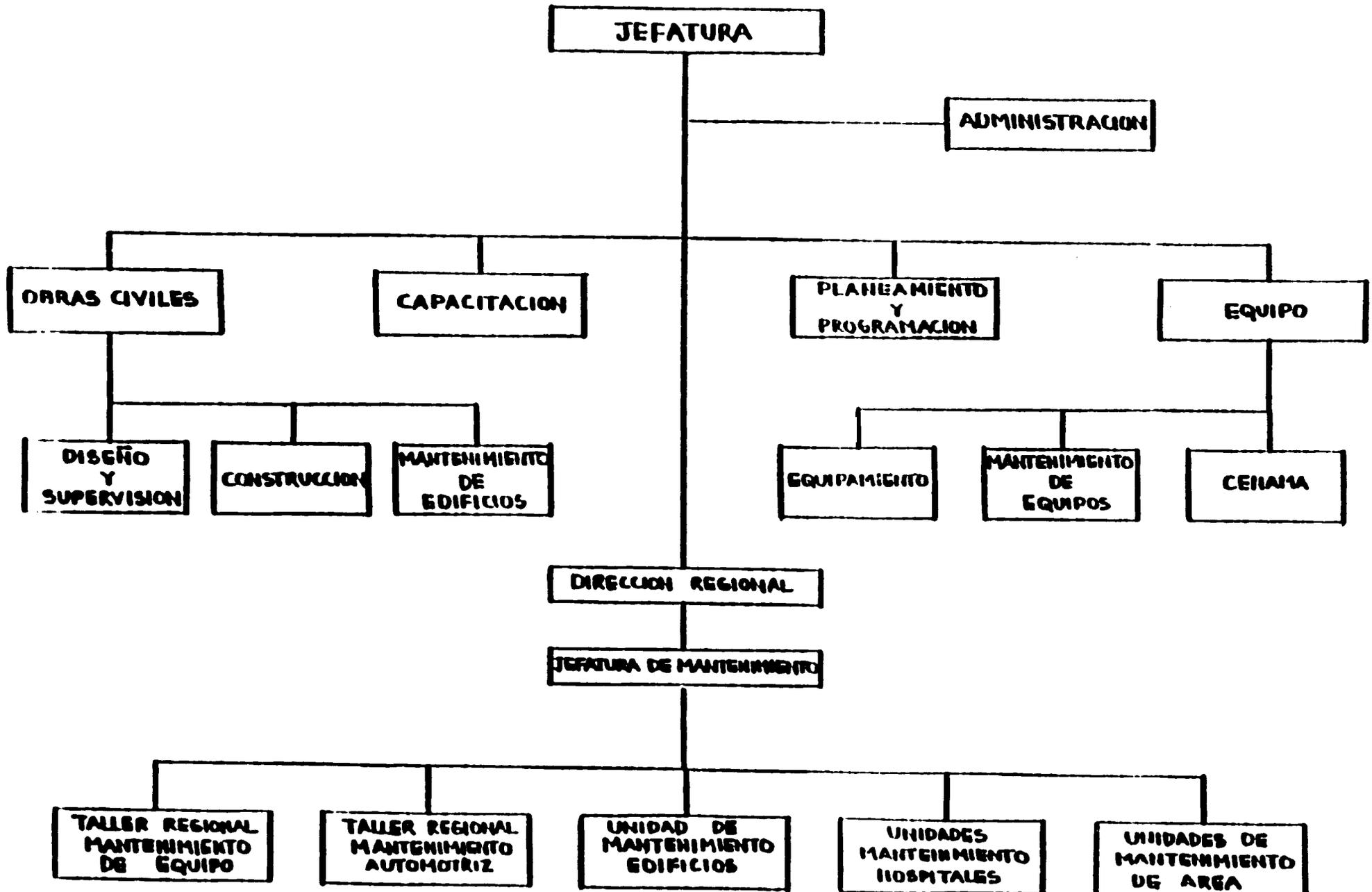
1/23

ESTRUCTURA ORGANIZATIVA DE LOS NIVELES OPERATIVOS POR REGIONES Y AREAS SANITARIAS  
HONDURAS C.A. AÑO 1986

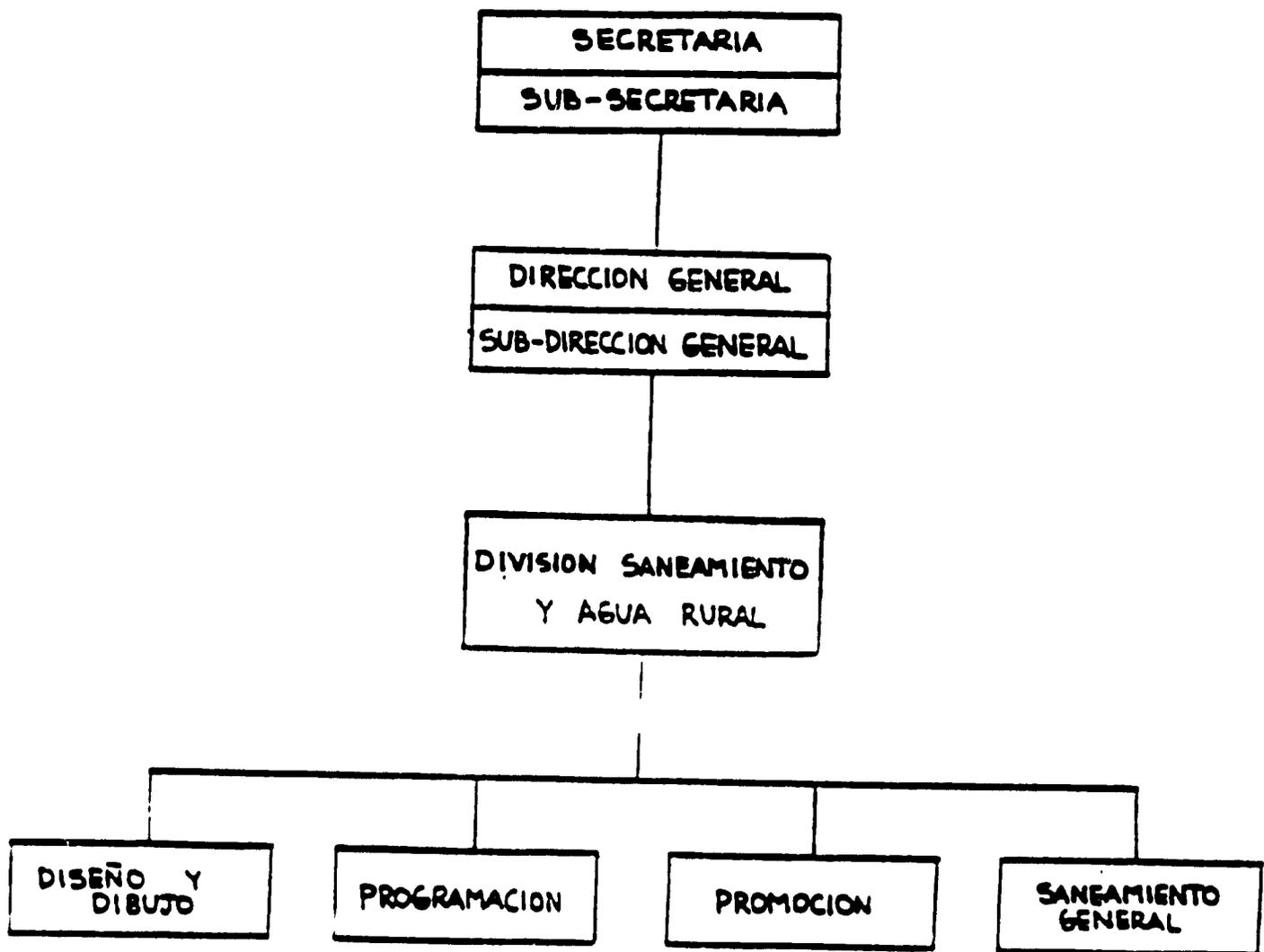


11/17

ANEX II (Cont'd)  
**ORGANIGRAMA DE LA DIVISION DE MANTENIMIENTO**  
**MINISTERIO DE SALUD PUBLICA - HONDURAS C.A.**  
**AÑO 1986**

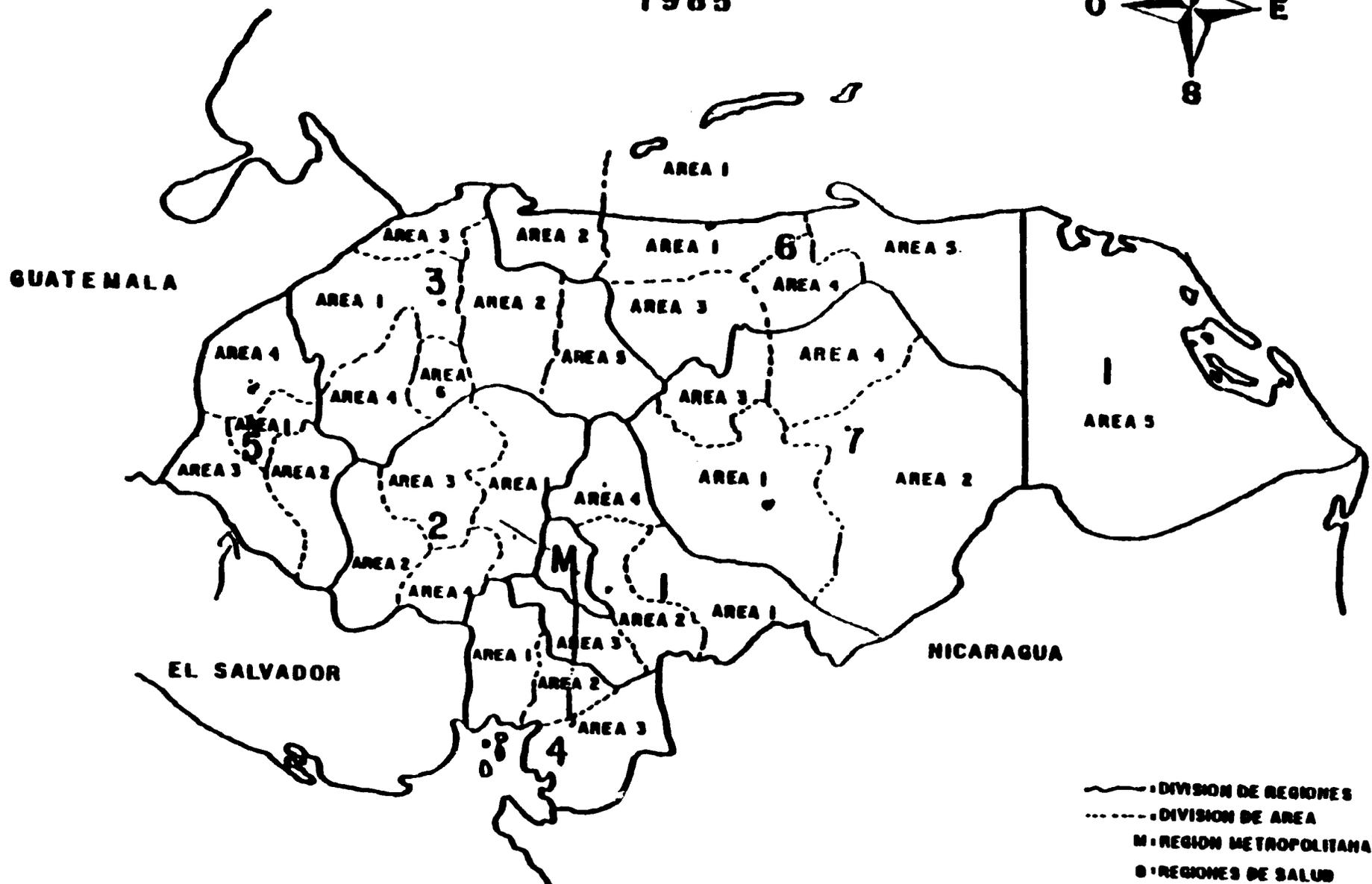
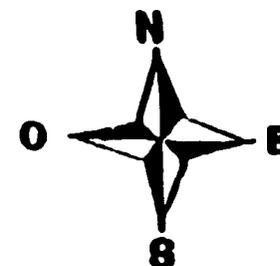


ORGANIGRAMA DE LA DIVISION DE SANEAMIENTO Y AGUA RURAL  
MINISTERIO DE SALUD PUBLICA - HONDURAS C.A.  
AÑO 1986



11/5

ANNEX I  
**REPUBLICA DE HONDURAS**  
**Ministerio de Salud Publica**  
**DIVISION POLITICA DE SALUD**  
**1985**



**ANNEX J**  
**MINISTERIO DE SALUD PÚBLICA**  
**INFRAESTRUCTURA FÍSICA DE SALUD Y RECURSOS HUMANOS**

	INFRAESTRUCTURA FÍSICA						RECURSOS HUMANOS												
	Áreas	Hospitales Nacion.	Hospitales Region.	Hospitales de Área	CESAM	CESAR	Médicos (Total)	Enfermera	Aux. Enf. Hosp. Nacion.	Aux. Enf. Hosp. Reg.	Aux. E. Hosp. Área	Aux. E. CESAM	Téc. Nivel Medio (Total)	Parteras		Guardianes		Representantes.	
		Totales	ACTIVAS.	Totales	Activos														
Metropolitano	C. y T.	6	-	-	6	11	432	105	1.130	-	-	79	409	329	95	113	65	40	
Nº 1	5	-	-	1	15	71	36	20	-	-	37	136	37	1.667	757	679	350	191	
Nº 2	4	-	-	1	12	72	43	20	-	75	42	152	60	1.905	643	444	313	381	
Nº 3	6	-	1	4	29	80	170	82	-	219	152	101	128	1.934	830	525	377	76	
Nº 4	3	-	1	-	8	73	48	25	-	93	-	113	30	1.577	477	290	205	303	
Nº 5	4	-	1	-	14	74	46	17	-	116	-	135	45	1.358	434	711	178	104	
Nº 6	5	-	1	3	16	89	90	36	-	99	95	141	40	1.968	762	447	189	253	
Nº 7	3	-	1	-	7	52	26	13	-	75	-	74	26	1.226	816	126	77	103	
<b>TOTAL</b>	<b>32</b>	<b>6</b>	<b>5</b>	<b>9</b>	<b>107</b>	<b>482</b>	<b>891</b>	<b>398</b>	<b>1.100</b>	<b>677</b>	<b>326</b>	<b>1.011</b>	<b>783</b>	<b>11.964</b>	<b>4.822</b>	<b>3.343</b>	<b>1.754</b>	<b>1.500</b>	

FUENTE: -República de Honduras. Secretaría en los Despachos de Salud Pública. Boletín de Estadísticas e Información de Salud. Tegucigalpa, D.C., 1984.

-República de Honduras. Ministerio de Salud Pública. Plan Nacional de Salud, 1982-1986. Plan Operativo Anual, 1985. Tegucigalpa, D.C., Cuadro Nº 4.

C. y T. Tegucigalpa y Comayagua.

ANNEX K  
CONCEPT DESIGN SUMMARY  
LOGICAL FRAMEWORK

ATTACHMENT "A"  
Page 1 of 13 pages  
Title of Project:  
From FY 00 to FY 01

Project Title & Number: HEALTH SECTOR I - 522-0152

BRIEF SUMMARY	OBJECTIVELY MEASURABLE INDICATORS	BASES OF VERIFICATION	IMPORTANT ASSUMPTIONS
Goal: Improve the health status of the Burundian people.	Decrease infant mortality to at least 30/1000 live births by the year 2001.	Surveys or statistical projections	Complementary development in other programs including water, environmental sanitation, nutrition and agriculture.

## ANNEX K (Cont'd)

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORKATTACHMENT "A"  
Page 2 of 13

Project Title &amp; Number: HEALTH SECTOR I - 527-0153

NARRATIVE SUMMARY	OBJECTIVELY MEASURABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS												
1) Purpose: Increase effectiveness, efficiency, coverage and use of the health care delivery system.	<p>1. Number of cases of malaria detected will have declined to 20,000 in the year 1987.</p> <p>2. The annual average of cases detected 1985 - 1987 will be less than 25,000.</p> <p>3. PAMU morbidity rates per 100,000 inhabitants during 1987:</p> <table border="0"> <tr> <td>a) Tuberculosis</td> <td>47.3</td> </tr> <tr> <td>b) Measles</td> <td>19.9</td> </tr> <tr> <td>c) Whooping cough</td> <td>7.0</td> </tr> <tr> <td>d) Polio</td> <td>0.1</td> </tr> <tr> <td>e) Tetanus</td> <td>0.5</td> </tr> <tr> <td>f) Diphtheria</td> <td>0.0</td> </tr> </table> <p>4. 80% of the cases of diarrhea which occurring in children under the age of five in 1987 will be treated according to MNM norms.</p> <p>5. 90% of the cases of diarrhea in children under the age of five which present to the MNM health system will be treated according to MNM norms in 1987.</p> <p>6. 80% of identified active cases of tuberculosis are being treated in 1987.</p> <p>7. Annual incidence of tuberculosis increases to 50/100,000 population in 1987</p> <p>8. Achieve a level of 60,000 contraceptive users in the MNM family planning program by 1987.</p>	a) Tuberculosis	47.3	b) Measles	19.9	c) Whooping cough	7.0	d) Polio	0.1	e) Tetanus	0.5	f) Diphtheria	0.0	<p>Malaria information system reports.</p> <p>Information system reports.</p> <p>Surveys. Information system reports. Immunization evaluations.</p> <p>Surveys.</p> <p>Information system reports</p> <p>Information system reports.</p> <p>Information system reports</p> <p>Information system reports. Surveys.</p>	<p>Continued support from other external donors.</p> <p>Continued support from other external donors (e.g. G3).</p> <p>Sufficient drugs available</p>
a) Tuberculosis	47.3														
b) Measles	19.9														
c) Whooping cough	7.0														
d) Polio	0.1														
e) Tetanus	0.5														
f) Diphtheria	0.0														

## ANNEX K (Cont'd)

PROJECT DESIGN SUMMARY  
MEDICAL RESEARCH

ATTACHMENT "A"

Page 3 of 13

Project Title &amp; Number: HEALTH SECTOR I - 122-0153

SUBSIDIARY SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Parasites:	9. 10% of CS240's reporting have 10% of the supplies needed for BOM priority programs in the last six months of 1987.	Logistics information system.	Approval of a separate purchasing authority for the BOM. Sufficient BOM funds are made available for the purchase of drugs
	10. The weighted average unit cost of the drugs used in the BOM priority programs will be less in 1987 than 1986 when adjusted for inflation.		
	11. Reports of non-functioning refrigerators will average less than 25% of the total number of refrigerators supposed to be functioning during each quarter of 1987.	Cold-chain information system.	Sufficient spare parts.
	12. A similar reporting system with similar results exists for at least five other operations important to BOM priority programs	Reports available	Sufficient spare parts.
	13. Cost per patient treated has declined over the 1986 level in hospitals and health centers.	Management information system. Inspection.	
	14. The unit cost (adjusted for inflation) of top BOM services shows a decrease in 1987 over pre-1986 levels.		
	15. 100% of regions and priority programs program their supervision visits by February of each year	Management information system Inspection.	
	16. 80% of the supervision visits planned at each level are carried out.	Information system	

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Project Title & Number: HEALTH SECTOR I - 522-0153

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
PRIORITY:	<p>17. The target population has changed knowledge and actions according to the content of educational messages.</p> <p>18. 80% of auxiliary nurses working in CHSAB's have received training in four of the seven priority programs by PACO.</p> <p>19. 80% of the auxiliary nurses working in CHSAB's have received training in three of the following support systems: logistics maintenance, local programming and supervision</p> <p>20. 50% of operations research studies have an effect on RPH decision-making.</p>	<p>Special evaluations of the mass media campaign.</p> <p>Continuing education program evaluations.</p> <p>Evaluations.</p>	

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PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Project Title &amp; Number: HEALTH SECTOR I - 522-0153

<u>DESCRIPTIVE SUMMARY</u> Objective:	<u>OBJECTIVE VERIFIABLE INDICATORS</u> Measures of Output:	<u>MEANS OF VERIFICATION</u>	<u>IMPORTANT ASSUMPTIONS</u>
<b>MALARIA:</b>			
1. Treat identified cases			
a. Treat patients with positive smears.	75%	Contactee reports.	
b. Administer slides within 15 days.	75%	Malaria information system.	
c. Begin treatment of patients with positive smears detected in the last 3 months within 21 days of table; smear.	60%	Malaria information system.	
2. Local control occurring in different areas of the country.	Six areas	Malaria information system.	
3. Houses programmed are sprayed.	90%	Malaria information system.	
4. LDCB spraying is carried out as programmed.	90% of localities programmed.	Malaria information system.	
5. Carry out mass medication campaigns where malaria incidence is above 50/1000 inhabitants.	90% of villages where incidence is above 50/1000.	Evaluations. Malaria information system.	
6. Reports on vector density, biting counts, light trap capture and mosquito resting count for the previous three months available in the Vector Control Division.	Quarterly reports from each of the four indicator districts are available.	Malaria information system. Entomologists reports.	

**PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK**

Project Title & Number: HEALTH SECTOR I - 522-0153

<u>NARRATIVE SUMMARY</u>	<u>OBJECTIVELY VERIFIABLE INDICATORS</u>	<u>MEANS OF VERIFICATION</u>	<u>IMPORTANT ASSUMPTIONS</u>
<b>Polio:</b>			
<u>Immunizations</u>			
1. CBSAB's program annual immunization goals by March.	90%	Information system	
2. CBSAB's achieve programmed goals.	90%	Information system	Sufficient vaccine exists Cold-chain functioning
<u>Diarrhoea Control</u>			
1. CBSAB's indicate no shortage of Litreal in the last 3 months	90%	Surveys Logistics information system.	
2. Annual evaluation carried out	One per year.		
3. Auxiliary nurses working in CBSAB's have received training in program norms.	90%	Human resources information system	
<u>Tuberculosis</u>			
1. Symptomatic patients which present to CBSAB's have sputum samples taken	90%	Evaluation	
2. Auxiliary nurses working in CBSAB's have received training in program norms.	90%	Human resources information system.	

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PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Project Title & Number: HEALTH SECTOR I - 523-0153

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<b>Female Fertility:</b>			
<b>Fertility Planning</b>	<b>Knowledge of Contraception:</b>		
1. Redefine and reinforce family planning program.	Program norms are defined, approved and officialized.	Observation.	
2. Auxiliary workers working in CSAB's have received training in program norms.	90%	Human resources information system	
3. CSAB's have reported no contraceptive stock-outs in the last three months.	80%	Logistics information system	Sufficient supplies exist.
4. Program evaluation carried out annually.	One per year.	Observation	
5. Women in fertile age know one method of family planning and one source.	90%	Surveys Evaluations	
6. Empirical midwives are trained in family planning.	70%	Information system	

## ANNEX K (Cont'd)

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Project Title &amp; Number: HEALTH SECTOR I - 522-0153

<u>NARRATIVE SUMMARY</u>	<u>OBJECTIVELY VERIFIABLE INDICATORS</u>	<u>MEANS OF VERIFICATION</u>	<u>IMPORTANT ASSUMPTIONS</u>
<b>Inputs:</b>	<b>Magnitude of Outputs:</b>		
<b>Logistics</b>			
1. CHSAR's have programmed their drug needs by June.	80%	Logistics information system.	
2. Drugs are purchased in bulk quantities.	80% of total value purchased	Logistics information system.	
3. Development and implementation of drug supply system.	Manuals produced.	Observation	
4. Follow-up and supervision of system.	Supervision guidelines exist.	Logistics information system. Contract or reports.	
5. Supply catalogs produced for drugs, medical-surgical supplies, laboratory equip and supplies, hospital equipment, office supplies.	One for each area.	Observation	Priority placed on this activity by NOW.
6. Regional and central supply warehouses constructed.	6 regional warehouses 1 central warehouse	Observation.	
7. Popular pharmacies established	Chain of low-cost popular pharmacies.	Observation	Legal obstacles overcome. Political approval given.
8. Feasibility study to increase and diversify PAMI drug supply completed	Report available.		
9. Community managed rotating funds for the purchase of drugs exist.	100 communities have such funds.	Reports	Initial pilot study is successful.

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**PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK**

Project Title & Number: HEALTH SECTOR I - 522-0153

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<b>Outputs:</b>	<b>Quantity of Outputs:</b>		
***Maintenance			
1. Supervision and Administration manual(s) have been prepared.	Manuals exist.	Observation	
2. Manual of norms and procedures for the national maintenance system which includes at least five pieces of equipment essential for the primary health care system is prepared.	Manual exists	Observation	
3. Regional and National workshops are constructed.	2 central and 6 regional workshops		
4. Technicians are trained according to norms.	90% of technicians		
<b>Management and Planning</b>			
1. Develop management information system.	Financial and productivity reports available within 45 days of close of quarter.	Observation.	
2. Computer work stations are being used for data analysis at the central level.	Equivalent of two stations being used full time.	Evaluation Contractor reports	

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Project Title & Number: HEALTH SECTOR I - 522-0153

<u>QUANTITATIVE SUMMARY</u>	<u>OBJECTIVELY VERIFIABLE INDICATORS</u>	<u>MEANS OF VERIFICATION</u>	<u>IMPORTANT ASSUMPTIONS</u>
<b>Objective:</b>	<b>Magnitude of Outputs:</b>		
3. A control level technical group responsible for technical coordination has been formed and is meeting regularly.	Group formed 80% of programmed meetings held	Observation	
4. Procedures manuals exist for the Administrative Division.	Manuals exist	Observation Contractor reports Evaluation	
5. Administrative norms and procedures manuals exist for the regional level.	Manuals exist.	Observation	
6. Health regions receive administrative supervision visits at least twice annually.	100%	Reports	
7. CESAR's are programming their own goals according to norms.	80% of CESAR's	Information system	
8. Operational investigations are being used for decision making.	Each priority program is subject of at least one operational investigation.	Observation.	

ANNEX K (Cont'd)  
 PROJECT DESIGN SUMMARY  
 LOGICAL FRAMEWORK

Project Title & Number: HEALTH SECTOR I - 522-0153

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<b>Outputs:</b>			
<b>Health Sector:</b>			
1. Create national and regional teams capable of designing, producing and carrying out educational campaigns.	1 national and 7 regional teams created.	Observation system. Evaluation Contractor reports.	
2. Conduct educational campaigns (1/75-12/87) with an average of four per year focusing on BOn priority programs.	12 campaigns carried out. 12 evaluation reports available	Observation Contractor reports.	
3. Provide ongoing support to BOn priority programs.	8,000 flipcharts 18,000 manuals 110,000 pamphlets		
<b>Structuring:</b>			
1. Supervision norms and procedure for control to regional, regional to area, area to health center, and health center to community are produced.	Manuals available	Observation	
<b>Information System:</b>			
1. Visits programmed are carried out.	100% 100% 95% 75%	Information system Project monitoring	
1. Visits programmed are carried out.	80% at control level 80% at regional level 80% at area level 80% at health center level		

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ANNEX K (Cont'd)

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Project Title & Number: HEALTH SECTOR I - 522-0153

<u>QUALITATIVE SUMMARY</u>	<u>OBJECTIVELY MEASURABLE INDICATORS</u>	<u>MEANS OF VERIFICATION</u>	<u>IMPORTANT ASSUMPTIONS</u>
<b>Priority:</b>	<b>Regulate of Goutelo:</b>		
<b>Continuing Activities:</b>			
1. An in-service continuing education program is operational:		Project reports. Project reports.	
a. training plans for the year are available by March of each year.	Plans available	Observation	
b. quarterly reports showing all training at central and regional level during the quarter are available within 45 days of the close of the quarter	Reports available	Observation	
c. training programmed is carried out.	75% of courses planned in 1987 and an average of 60% of courses planned over the 1985 - 1987 period.		
d. results of evaluations of training in 3 of the 9 priority programs are available.	Evaluation reports available.	Observation	
e. results of evaluations of training in 3 of the 4 support programs are available.	Evaluations reports available	Observation	

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**PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK**

Project Title & Number: HEALTH SECTOR I - 523-0153

<b>NARRATIVE SUMMARY</b>	<b>OBJECTIVELY VERIFIABLE INDICATORS</b>	<b>MEANS OF VERIFICATION</b>	<b>IMPORTANT ASSUMPTIONS</b>
<b>Outlets:</b>	<b>Essentials of (supplies):</b>		
2. Establish a national information center and provide information to MCH personnel.	One national and eight regional information centers functioning.	Observation.	
	16 issues of "Salud para Todos" published and 5000 of each issue distributed.	Observation.	
	3 issues of health information bulletin published.	Issues received.	
3. Increase training	12 persons per year in long-term training in priority programs or public health disciplines.	Documentation processed	
	99 person months of short-term courses on observational visits in priority and support programs.		
<b>Outlets:</b>			
Updated information on nutritional status.	National nutritional survey conducted.	Report available.	
Nutrition education system established.	Nutrition education programming in all health regions.	Observation	Approval of CARR nutrition education project.

ANNEX L

LIST OF PERSONS VISITED

1. AMAYA, Roberto  
PAHO
2. APLICANO, Rodolfo  
Demographer  
CONSUPLANE
3. AQUINO, Dr. Eduardo  
PAHO
4. AYALA, Bertha  
Auxiliary Nurse, CESAR, Region III  
Guaymitas, Cortes  
MOH
5. AYES, Maria del Carmen  
Statistics  
MOH
6. BAILEN, Patsy  
Family Health Incorporated
7. BANEAS, Carlos Enrique  
Chief of Automotive Shop  
Region III  
La Ceiba  
MOH
8. BANEAS, Dr. Cesar Augusto  
Chief Region IV  
Choluteca  
MOH
9. BARRONIA, Fidel  
Science and Technology  
MOH
10. BARDALES, Dr. Gustavo  
Evaluation Coordinator  
Directorate of Budgets  
Ministry of Finance
11. BONNANO, Maria Rosa  
Diarrhea Control  
MOH
12. BOURDETTE, Luz Angelica Ruiz  
Procurement Officer  
Project Coordination Unit

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13. BROCATO, Carlos  
Warehouse Chief, Region III  
San Pedro Sula, Cortes  
MOH
14. CALDERON, Dr. Nancy  
Assistant, Pharmaceutical Unit and  
CONAME Representative  
MOH
15. CALIX, Dr. Prospero  
Chief, Region II  
Comayagua  
MOH
16. CARDENAS, Tomasa  
Regional Family Planning Nurse, Region IV  
Choluteca  
MOH
17. CARRANZA, Dr. Marco Tulio  
Epidemiology Surveillance Program  
MOH
18. CAMPOS, Marielos  
Nurse, Region II  
Comayagua  
MOH
19. CARVAJAL, Vilma  
CESAMO Pespire, Region IV  
Choluteca  
MOH
20. CAMPOS, Elizabeth  
Warehouse, Region IV  
Choluteca  
MOH
21. CASAS, Dr. Antonio  
UNICEF
22. CASTELLON, Julio  
MSH
23. CASTILLO, Dr. Mario  
MSH
24. CASTRO, Pedro  
Engineer, Region IV  
Choluteca  
MOH
25. CHAN, Maira  
PAHO

26. CHAVARRIA, Dr. Wilfredo  
Area Chief, Region VI  
Tela, Atlantida  
MOH
27. CERRATO, Francisco  
Vector Control  
MOH
28. CORDOVA, Jorge  
Regional Maintenance Coordinator, Region III  
San Pedro Sula, Cortes  
MOH
29. CORRALES, Dr. Gustavo A.  
MSH
30. CROSS, Peter  
Chief-of-Party  
MSH
31. CRUZ GABIDIA, Dr. Roberto  
Epidemiology  
MOH
32. CRUZ JIMENEZ, Mari  
Supervisory Nurse, Region V  
Florida, Copan  
MOH
33. DEARA, Dr. Delia  
Epidemiologist, Region III  
San Pedro Sula, Cortes  
MOH
34. DE AGUILAR ESTRADA, Ana Lucia  
Acute Respiratory Infection Program  
MOH
35. DE CANALES, Francisca  
PAHO
36. DEL CASTILLO, Eduardo  
ASHONPLAFA
37. DE CASTILLO, Thelma Olivia  
Pharmacy Manager, CESAMO, Region V  
Florida, Copan  
MOH
38. DE CHAVEZ, Maria Cristina  
Social Worker, Region VI  
La Ceiba  
MOH

39. DE DURON VELASQUEZ, Melida  
Chief of Central Medicine Warehouse  
MOH
40. DE LA IGLESIA, Yolanda Aviles  
Project Coordination Unit
41. DE RIVAS, Dr. Maria Elena  
Tuberculosis Control Program  
MOH
42. DE RODRIGUEZ GARCIA, Martha  
Nurse Supervisor, Region III  
San Pedro Sula  
MOH
43. DIAZ, Bertilia  
Auxiliary Nurse, CESAR, Region IV  
Choluteca  
MOH
44. DIAZ, Vicente  
AID
45. DOMINGUEZ BORJAS, Jose Cruz  
MOH
46. DURAN, Regina  
MSH
47. ELVIR, Julia  
INCAP
48. ERAZO, Oscar  
Social Worker, Region IV  
Choluteca  
MOH
49. ESCALON VALLEZUELA, Carlos Humberto  
Accountant, Region V  
Santa Rosa de Copan  
MOH
50. ESCOBAR, Dr. Arturo  
Epidemiologist, Region V  
Santa Rosa de Copan  
MOH
51. ESTRADA, Dr. Anarda  
Human Resource Development Division  
MOH

52. EUCEDA A., Prof. Jorge  
Permanent Education Coordinator, Region V  
Santa Rosa de Copan  
MOH
53. FAJARDO, Prof. Eliseo  
Permanent Education Coordinator, Region III  
San Pedro Sula, Cortes  
MOH
54. FALCONERY TURCIOS, Dr. William  
Physician, CESAMO, Region V  
Santa Rita de Copan  
MOH
55. FERNANDEZ, Dr. Jorge  
Chief of Pharmaceutical Unit and  
Coordinator of CONAME  
MOH
56. FIALLOS, Dr. Carlos Ernesto  
Assistant, Science and Technology Unit  
MOH
57. FLORES, Alejandro  
ASHONPLAFA
58. FLORES, Tony  
MSH
59. GARCIA C., Isabel  
Auxiliary Nurse, Region III  
San Pedro Sula  
MOH
60. GALEAS, Ivan  
Chief of Automotive Shop, Region III  
San Pedro Sula  
MOH
61. GARCIA, America Azucena  
Auxiliary Nurse, CESAMO Corozal, Region III  
La Ceiba  
MOH
62. Garcia, Georgina  
Auxiliary Nurse, CESAMO, Region V  
Copan Ruinas  
MOH
63. GARCIA, Dr. Yanuario  
Director General of Health  
MOH

64. GIRON, Martha Lidia  
Regional Secretary  
Public Health Warehouse, Region IV  
Choluteca  
MOH
65. GODOY, Dr. Carlos  
Honduran Institute of Social Security
66. GORGES, Dr. Guillermo  
PAHO
67. HERMENENS DR.  
Director, Region V  
Copan  
MOH
68. HERNANDEZ, Carlos  
Director of Planning  
MOH
69. HERRERA, Regis  
Controllers office  
AID
70. HOLLEY, John  
MSH
71. IZAGUIRRE, Francisco  
Administrator, Region VI  
La Ceiba  
MOH
72. LAINEZ, Olimpia  
Regional Nursing Supervisor, Region VI  
La Ceiba  
MOH
73. LARA, Peter  
AID
74. LEONARD, Glynn  
MSH
75. LINARES, Marco Tulio  
Chief of Transportation Department  
MOH
76. LOPEZ, Jose Ricardo  
Accounting Auxiliary, Region V  
Santa Rosa de Copan.  
MOH
77. MCCARTHY, David  
MSH

78. MADRID, Julia  
Nursing Supervisor, Region V  
La Entrada, Copan  
MOH
79. MAGANA, Rodolfo  
MSH
80. MARADIAGA ERAZO, Juan Alberto  
Administrator, Region IV  
Choluteca  
MOH
81. MARTINEZ, Dr. Norberto  
MOH
82. MARTINEZ ORTEGA, Abelardo  
Administrator, Region II  
Comayagua  
MOH
83. MEJIA, Jorge  
Program Officer  
Project Coordination Unit  
MOH
84. MELARA, Dr. Alejandro  
Division of Maternal and Child Health  
MOH
85. MEMBRENO, Roman Arturo  
Warehouse Construction Supervisor, Region I  
Santa Rosa de Copan  
MOH
86. MIRANDA, Dr. Maria del Carmen  
Family Planning  
AID
87. MOLINA, Dr. Luis  
Epidemiologist, Region IV  
Choluteca  
MOH
88. MONCADA MENCIA, Sandra Regina  
Statistician, Region VI  
La Ceiba, Atlantida  
MOH
89. MONTES, Dr. Adan  
Division of Maternal and Child Health  
MOH

90. MONTOYA, Carlos  
Health Education Division  
MOH
91. MORENO, Orlando  
Permanent Education, Region IV  
Choluteca  
MOH
92. NAVARRO, Cesar  
Administration Office  
MOH
93. NAVARRO, Irma  
Auxiliary Nurse, CESAMO Corozal, Region III  
Atlantida  
MOH
94. OCHOA, Jose  
MSH
95. ORDONEZ, Julio Roberto  
Cold Chain Technician, Region III  
La Ceiba, Atlantida  
MOH
96. PADILLA, Norma  
Regional Nurse, Region IV  
Choluteca  
MOH
97. PADILLA, Vilma Yolanda  
Administrator  
Project Coordinator Unit
98. PARK, Tom  
Population Officer  
AID
99. PAVON, Gerardo  
Computer Unit  
MOH
100. PETERSON, Randy.  
AID
101. PINTO, Dr. Ernesto  
Project Coordinator  
AID
102. PORTILLO, Hilda  
Supervisory Nurse, Region V  
Santa Rosa de Copan  
MOH

103. POSADAS, Hernan  
Electrical Technician, Region III  
La Ceiba, Atlantida  
MOH
104. RAMIREZ PINTO, Emilio  
Coordinator, Region VI  
La Ceiba, Atlantida  
MOH
105. RAMIREZ, Reina de los Angeles  
Accountant  
Project Coordination Unit
106. RIOS RIVERA, Emilio  
Division of Maintenance and Engineering  
MOH
107. RIVERA, Dr. Benjamin  
Division of Environmental Sanitation  
MOH
108. SANCHEZ, Alicia  
Warehouse, Region IV  
Choluteca  
MOH
109. SIEGEL, Anita  
Assistant Population Officer  
AID
110. SUAZO, Margarita  
Demographer  
ASHONPLAFA
111. STIVERS, Jeffrey  
Vector Control Specialist  
MOH
112. SMITH, Dr. Barry  
Project Officer, Health Sector I  
AID
113. TABORA, Jacobo  
Chief, Region VI  
La Ceiba, Atlantida  
MOH
114. TAYLOR, Scott  
Administrative Assistant, Health Sector I  
AID
115. TOBON NIEVES, Dr. Carlos  
MSH

116. TROCHEZ, Dr. Hilton  
Honduran Institute of Social Security
117. TROCHEZ, Jorge  
Warehouse Assistant Guard, Region V  
Santa Rosa de Copan  
MOH
118. URTECHO GOMEZ, Dr. Reynaldo  
Coordinator  
Project Coordination Unit
119. VARELA ESCOTO, Humberto Salomon  
Mechanic's Assistant, Region V  
Santa Rosa de Copan.  
MOH
120. VARELA, Dr. Mauricio  
Academic Director, "Escuela" Hospital  
MOH
121. VARELA, Raul Blas  
Administrator, "Escuela" Hospital  
MOH
122. VELZEBOUR, Marijke  
MSH
123. VILLAMIL, Juan Angel  
Chief of Cold Chain, Region V  
Santa Rosa de Copan  
MOH
124. VOLLBRECHT, Tony  
Program Officer  
AID
125. ZELAYA, Dr. Enrique  
Epidemiology Division  
MOH

## ANNEX H

## GOVERNMENT OF HONDURAS

ANNUAL NATIONAL BUDGET  
(U.S. Dollars)

GOVERNMENT FUNCTION	1 9 8 3		1 9 8 4		1 9 8 5		1 9 8 6	
	Budget	% of Tot						
LEGISLATURE	67,025,000	1.2%	67,025,000	1.2%	67,375,000	1.0%	610,407,550	1.3%
JUDICIARY	6,700,000	1.1%	6,500,000	1.1%	6,800,000	0.9%	7,000,000	0.9%
ELECTORAL BODY	4,800,000	0.8%	4,500,000	0.8%	10,000,000	1.4%	4,000,000	0.5%
<b>EXECUTIVE BRANCH:</b>								
Presidency	6,000,475	1.0%	6,207,000	1.4%	6,202,000	1.3%	3,512,500	1.1%
Justice	7,000,000	1.2%	6,102,300	1.0%	6,522,000	1.0%	7,510,400	0.9%
External Relations	6,100,453	1.0%	6,702,970	1.1%	7,400,400	1.1%	6,220,000	1.0%
Defense	46,153,000	7.7%	46,103,000	7.8%	60,000,000	0.8%	67,000,000	0.8%
Economy & Commerce	6,455,301	1.1%	6,001,334	1.0%	6,001,334	0.8%	6,700,000	0.8%
Finance & Public Credit	10,000,710	3.2%	10,000,179	2.0%	17,500,179	2.8%	19,000,000	2.5%
General Procurement	441,200	0.1%	441,200	0.1%	500,000	0.1%	702,000	0.1%
Education	121,847,049	20.7%	117,707,441	18.0%	141,000,032	20.1%	107,032,041	21.1%
Public Health	71,124,540	12.1%	71,741,300	10.4%	66,000,000	0.9%	63,100,550	10.5%
Culture & Tourism	3,235,711	0.5%	2,710,070	0.4%	2,757,375	0.4%	2,000,000	0.4%
Labor & Social Assistance	13,350,427	2.3%	11,001,007	1.6%	11,001,007	1.7%	12,202,000	1.5%
Communications, Public Works, & Transport	46,003,450	7.7%	37,100,000	5.3%	37,400,000	0.5%	42,120,500	0.8%
Natural Resources	36,352,210	6.0%	33,000,201	4.7%	33,632,432	4.8%	30,000,000	4.9%
Public Debt	163,427,415	28.0%	161,025,170	22.3%	246,100,000	34.0%	274,000,000	34.0%
Control Services of Public Expn. for Exec. Branch	31,004,111	5.3%	29,461,277	4.3%	33,101,012	4.7%	32,100,000	4.0%
<b>TOTAL NATIONAL BUDGET</b>	<b>6500,000,000</b>	<b>100.0%</b>	<b>6502,221,000</b>	<b>100.0%</b>	<b>6705,040,943</b>	<b>100.0%</b>	<b>6704,001,133</b>	<b>100.0%</b>

SOURCE: Ministry of Finance and Public Credit, "General Budget of Income and Expenditures of the Republic," 1983 - 1986.

ANNEX N

HEALTH SECTOR I PROJECT: AID PIPELINE SUMMARY  
July 1, 1986

TECHNICAL ASSISTANCE

SUB-COMPONENT	(A) Expended to Date (6/30/86)	(B) Budgeted LOP (Actually Obligated)	(C) Projected to PACO (12/31/87)	(D) Projected LOP Total (A + C)	(E) Difference (B - D)
Malaria	9501.136	9790.344	9117.868	9419.004	(628.060)
Rabies	1.072	1.072	-	1.072	0
Diarrhea Control	1.072	1.072	-	1.072	0
Tuberculosis	1.072	1.072	-	1.072	0
Logistics	575.220	575.220	575.000	949.220	(373.000)
Maintenance	575.220	575.220	522.100	924.720	342.100
Management & Planning	3,716.517	3,801.188	2,679.734	6,396.071	(2,594.883)
Mass Media	428.401	678.292	419.361	847.762	(169.470)
Supervision	205.000	415.000	-	205.000	210.000
Human Resources	444.442	610.442	441.000	895.442	(275.000)
Science & Technology	2.922	225.000	275.000	277.922	(24.922)
Teacher Training	2.147	2.147	-	2.147	0
MCH	312.362	310.248	-	312.362	(2.114)
<b>TOTAL - TA</b>	<b>46,521.387</b>	<b>47,549.920</b>	<b>64,550.082</b>	<b>611,051.470</b>	<b>(63,501.550)</b>

COMMODITIES

SUB-COMPONENT	(A) Expended to Date (6/30/86)	(B) Budgeted LOP (Actually Obligated)	(C) Projected to PACO (12/31/87)	(D) Projected LOP Total (A + C)	(E) Difference (B - D)
Malaria	81,484,846	81,817,631	6442,128	81,927,004	(6109,373)
Rabies	7,843	7,843	-	7,843	0
Immunizations	18,379	18,379	1,150	19,529	(1,150)
Diarrhea Control	20,393	290,393	202,000	292,393	(1,998)
Tuberculosis	38,082	38,082	-	38,082	0
Logistics	1,383,806	2,145,366	586,939	2,170,745	(23,381)
Maintenance	340,399	760,707	926,053	1,286,652	(525,957)
Management & Planning	93,493	93,128	40,000	137,493	(38,365)
Mass Media	368,086	453,229	120,018	488,104	(34,873)
Supervision	311,332	311,332	-	311,332	0
Human Resources	141,084	225,346	128,298	229,292	(75,846)
Science & Technology	1,088	3,200	3,912	5,000	(1,800)
Nutrition	-	51,000	102,000	102,000	(51,000)
Contingency	220,384	275,000	102,000	322,384	(50,384)
Sexually Trans. Dis.	1,180	1,180	-	1,180	0
MCH	228,508	641,784	603,880	842,188	(176)
<b>TOTAL - COMMODITIES</b>	<b>84,938,922</b>	<b>87,560,460</b>	<b>13,318,590</b>	<b>98,277,222</b>	<b>(9916,862)</b>

ANNEX N (Cont'd)

LOCAL COSTS

SUB-COMPONENT	(A) Expended to Date (6/30/86)	(B) Budgeted LOP (Actually Obligated)	(C) Projected to PACD (12/31/87)	(D) Projected LOP Total (A + C)	(E) Difference (B - D)
Malaria	6158.944	6783.732	6429.702	6588.648	6195.104
Rabies	1.556	1.556	-	1.556	0
Immunizations	55.594	506.742	450.000	505.594	1.151
Diarrhea Control	53.358	53.358	-	53.358	0
Tuberculosis	11.150	11.150	-	11.150	0
Epidemiology	7.828	7.828	-	7.828	0
Logistics	110.340	140.539	15.000	125.340	14.999
Maintenance	153.740	205.740	55.840	211.600	(5.860)
Management & Planning	400.082	636.777	216.515	616.595	20.182
Mass Media	8.492	8.492	-	8.492	(1)
Supervision	585.455	745.198	411.947	997.382	(222.184)
Human Resources	1,117.717	1,801.152	538.842	1,456.559	344.593
Science & Technology	-	60.800	16.900	16.900	43.900
Contingency	-	20.000	-	0	20.000
Teacher Training	12.256	12.256	-	12.256	0
Sexually Trans. Dis.	5.885	5.885	-	5.885	0
MCM	557.607	1,234.959	1,051.120	1,388.727	(153.768)
<b>TOTAL - LOCAL COSTS</b>	<b>65,001,986</b>	<b>66,215,986</b>	<b>62,982,884</b>	<b>65,987,870</b>	<b>6228,116</b>

OTHER EXPENDITURES

(Construction, Scholarships, Observation Trips, Evaluations, etc)

SUB-COMPONENT	(A) Expended to Date (6/30/86)	(B) Budgeted LOP (Actually Obligated)	(C) Projected to PACD (12/31/87)	(D) Projected LOP Total (A + C)	(E) Difference (B - D)
Materials	65,467	6545,550	-	65,467	6480,083
Tuberculosis	7,257	7,216	1,261	7,216	0
Logistics	692,876	3,162,719	2,916,500	3,609,306	(642,587)
Maintenance	55,189	142,799	628	55,827	86,972
Management & Planning	601,551	1,038,995	345,689	947,240	91,745
Mass Media	86,484	260,211	105,465	189,949	70,262
Human Resources	84,755	168,462	136,197	220,950	(52,488)
Nutrition	-	100,000	100,000	100,000	0
Contingency	2,000	-	-	2,000	(2,000)
Teacher Training	27,255	25,491	8,256	25,491	0
Sexually Trans. Dis.	545	545	-	545	0
MCM	175,550	114,887	9,422	182,972	(68,085)
<b>TOTAL - OTHER</b>	<b>61,979,549</b>	<b>65,579,677</b>	<b>67,621,457</b>	<b>65,560,977</b>	<b>918,662</b>

ANNEX N (Cont'd)

S U M M A R Y   D A T A

	(A)	(B)	(C)	(D)	(E)
TYPE OF ASSISTANCE	Expended to Date (6/30/96)	Budgeted LOP (Actually Obligated)	Projected to PACB (12/31/97)	Projected LOP Total (A + C)	Difference (B - D)
Technical Assistance	92,521,297	97,549,920	94,550,087	911,051,470	(92,501,297)
Commodities	4,998,977	7,760,460	3,319,790	3,277,727	(916,267)
Local Costs	3,001,986	2,212,986	2,992,884	2,987,870	229,116
Other Expenditures	1,939,546	2,579,633	3,621,427	3,560,973	18,662
<b>GRAND TOTAL</b>	<b>98,421,832</b>	<b>926,706,001</b>	<b>914,483,784</b>	<b>930,877,636</b>	<b>(94,171,633)</b>

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## ANNEX O

## RECURRENT COST STATEMENTS

I T E M	Y E A R			
	1984	1985	1986	1987
<b>SALARIES:</b>				
Malaria	-	-	963,762	975,642
Rabies	-	-	-	-
Immunizations	-	-	-	-
Diarrhea Control	-	-	-	-
Tuberculosis	-	-	-	-
Epidemiology	-	-	-	-
Logistics	-	1,130	-	-
Maintenance	26,860	-	-	-
Management & Planning	63,762	75,886	89,783	121,174
Mass Media	-	-	-	-
Supervision	-	-	-	-
Human Resources	-	-	-	-
Science & Tech	-	11,520	12,320	18,480
Nutrition	-	-	-	-
Acute Resp Infects	-	-	-	-
Contingency	-	-	-	-
Teacher Training	-	-	-	-
Sexually Transm Dis	-	-	-	-
MCH	22,287	28,570	29,448	30,672
Continuing Educat	-	1,930	-	-
<b>TOTAL</b>	<b>112,911</b>	<b>119,076</b>	<b>177,313</b>	<b>265,968</b>

I T E M	Y E A R			
	1984	1985	1986	1987
<b>PER DIEM (inc. training materials)</b>				
Malaria	843,844	817,757	8190,697	8286,045
Rabies	278	640	-	-
Immunizations	44,467	42,701	186,220	279,331
Diarrhea Control	6,078	3,887	-	-
Tuberculosis	3,340	17,220	-	-
Epidemiology	-	-	-	-
Logistics	50,291	6,850	12,000	18,000
Maintenance	57,083	19,341	20,000	30,000
Management & Planning	1,264	1,607	-	-
Mass Media	7,277	19,443	-	-
Supervision	192,744	237,851	122,548	183,822
Human Resources	-	-	340,000	510,000
Science & Tech	-	1,618	12,200	18,300
Nutrition	-	4,117	400	400
Acute Resp Infects	-	11,571	-	-
Contingency	-	-	-	-
Teacher Training	-	-	-	-
Sexually Transm Dis	296	-	-	-
MCH	-	-	454,990	682,485
Continuing Educat	132,192	458,871	-	-
<b>TOTAL</b>	<b>1,339,354</b>	<b>1,443,494</b>	<b>11,339,055</b>	<b>12,000,583</b>

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I T E M	Y E A R			
	1984	1985	1986	1987
<b>TRAINING:</b>				
Malaria	-	83,813	88,476	812,144
Rabies	-	-	-	-
Immunizations	-	-	-	-
Diarrhea Control	-	-	-	-
Tuberculosis	-	-	514	756
Epidemiology	-	-	-	-
Logistics	3,863	-	-	-
Maintenance	22,418	-	-	-
Managmt & Planning	-	-	22,870	34,306
Mass Media	-	-	-	-
Supervision	-	-	-	-
Human Resources	-	-	60,000	90,000
Science & Tech	-	-	-	-
Nutrition	-	-	-	-
Acute Resp Infects	-	-	-	-
Contingency	-	-	-	-
Teacher Training	-	-	102	154
Sexually Trans Dis	-	-	-	-
MDI	38,818	-	969	1,453
Continuing Educat	-	50,935	-	-
<b>TOTAL</b>	<b>644,799</b>	<b>654,748</b>	<b>692,541</b>	<b>6138,813</b>

I T E M	Y E A R			
	1984	1985	1986	1987
<b>COMMODITIES: (and other non-personal services)</b>				
Malaria (a)	651,491	6445,370	6149,642	6224,462
Rabies	1,514	3,534	-	-
Immunizations	-	3,966	-	-
Diarrhea Control	103,866	2,484	80,000	120,000
Tuberculosis	-	9,911	2,000	4,200
Epidemiology	-	-	-	-
Logistics	1,204,618	21,357	233,840	350,761
Maintenance	30,223	2,565	361,431	542,147
Managmt & Planning	-	41,973	-	-
Mass Media	114,777	162,307	150,526	225,788
Supervision	4,506	-	-	-
Human Resources	-	-	6,000	9,007
Science & Tech	-	1,088	645	967
Nutrition	-	297	47,200	70,800
Acute Resp Infects	-	237	-	-
Contingency	-	-	-	-
Teacher Training	-	-	33,906	50,860
Sexually Trans Dis	3,067	-	-	-
MDI (a)	211,174	98,920	200,000	300,000
Continuing Educat	30,646	11,409	-	-
<b>TOTAL</b>	<b>61,493,217</b>	<b>6261,128</b>	<b>6916,354</b>	<b>61,374,531</b>

**ANNEX D (Cont'd.)**  
**SUMMARY DATA**  
**ITEM III SECTION I RECURRENT COSTS**  
**Assuming Improved Cost Recovery**  
**(Current US\$)**

I T E M	Y E A R									
	1984	1985	1986	1987	1988	1989	1990	1991	1992	
Initial Recurrent Cost	02,210,281	01,278,446	02,525,263	03,787,875	02,389,626	02,389,626	02,389,626	02,389,626	02,389,626	02,389,626
Hospital Cost Recovery (1)	-	-	-	192,528	416,345	644,520	892,510	1,160,263	1,392,315	1,392,315
CEBAND Cost Recovery (2)	-	-	-	5,769	7,000	8,500	9,500	10,600	12,000	12,000
Reduced Cost	02,210,281	01,278,446	02,525,263	03,589,599	01,966,281	01,736,606	01,487,616	01,218,764	0985,311	0985,311

(1) Estimated by calculating the percentage increase in hospital cost recovery over the 5% of required funds which has historically been in order to operate hospitals at their current level of functioning. Thus: '87 = .5%, '88 = 1%, '89 = 1.5%, '90 = 2%, '91 = 2.5%, and '92 = 3%. The base used for each year (Total Funds Required and Sources of Funds.)

(2) Estimated for 1987 by assuming that (US\$) cost recovery would grow by .5% above its historical rate (estimated at about 10%). Projections for subsequent years are the evaluation team's own estimates, based on informed judgments.

**RECURRENT COST ANALYSIS**  
**(With cost recovery)**

(1) ONGOING RECURRENT COSTS (Current US\$)	(2) Percent of Budget	(3) Percent of Internal Funds	(4) Percent of FIC Funds	(5) Recurrent Cost per capita	(6) Estimated Population (a)
<b>For 1988:</b>					
Using 1986 Budget:					
03,589,599	2.7%	4.3%	13.5%	00.77	4,635,000
Using 1984 Budget:					
01,487,616	1.1%	1.8%	5.6%	00.31	4,771,733

(a) Assuming 2.9% average annual population growth.

MNH/EA U (LINE U.)  
**S U M M A R Y   D A T A**  
**HEALTH SECTOR I RECURRENT COSTS (a)**  
 (Current US\$)

I T E M (1)	Y E A R									
	1984	1985	1986	1987	1988	1989	1990	1991	1992	
Salary (2)	0112,911	0119,074	0177,313	0265,968	354,626	354,626	354,626	354,626	354,626	
Training (3)	64,799	54,748	92,541	130,813	60,000	60,000	60,000	60,000	60,000	
Commodities (4)	1,493,217	261,128	916,354	1,374,511	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	
Per Diem (5)	539,354	843,494	1,339,035	2,008,583	650,000	650,000	650,000	650,000	650,000	
Physical Plant (6)	-	-	-	-	25,000	25,000	25,000	25,000	25,000	
<b>GRAND TOTAL</b>	<b>02,210,281</b>	<b>01,278,446</b>	<b>02,525,263</b>	<b>03,787,895</b>	<b>02,389,626</b>	<b>02,389,626</b>	<b>02,389,626</b>	<b>02,389,626</b>	<b>02,389,626</b>	

- (a) Analysis assumes that the Project terminates completely at the FACD.
- (1) Data for 1984-85 was taken from annual reports prepared by the Project Coordination Unit (FCU), and converted from leopras to dollars at 2:1. Data for 1986 and 1987 was taken from the Project financial spreadsheet of 12/31/85. Data for 1986 was assumed to be 40% of Projected FACD expenditures, and 1987 was assumed to be 60%.
- (2) Salary data for 1988-89 was calculated by simply doubling the estimated 1986 expenditures.
- (3) Training expenditures are noticeably lower due to the fact that modules have been developed for priority programs and support programs. This approach allows for more coverage at minimum cost. Thus, the 60,000 estimate of MHI was scaled back accordingly.
- (4) Commodity costs for 1988-89 were calculated by first accepting the MHI argument (seen in their critique of the Birch & Davis Report) that international donors will continue to cover virtually all MCH-related and malaria-related (insecticide) expenses. Their critique of the high spare parts values used by B & D was not accepted. If the MHI wishes to maintain the Project activity, this sum of approximately 900,000 will be required.
- (5) Per Diem values were taken out of the Birch & Davis Report, although scaled back slightly.
- (6) Maintenance and guards for seven new buildings.

**RECURRENT COST ANALYSIS**  
 (Without cost recovery)

(1)	(2)	(3)	(4)	(5)	(6)
GRAND RECURRENT COSTS (Current US\$)	Percent of Budget	Percent of Internal Funds	Percent of PIC Funds	Recurrent Cost per capita	Population
<b>FOR YEARS 1988 - 1992:</b>					
<b>Using 1986 Budget:</b>					
02,389,626	1.8%	2.9%	9.0%	60.53	4,500,000
<b>Using 1985 Budget:</b>					
02,389,626	3.3%	3.6%	11.5%	60.55	4,372,000

ANNEX P

MINISTRY OF HEALTH  
ANNUAL NATIONAL BUDGET

I T E M	1 9 8 1		1 9 8 2		1 9 8 3		1 9 8 4		1 9 8 5	
	Budget	%								
Control Administration	82,177,000	3.0%	81,007,000	3.1%	82,102,000	3.0%	82,723,000	4.1%	82,510,027	3.0%
Diagnostic Services	2,440,000	4.2%	2,000,000	3.0%	2,107,000	3.1%	2,023,000	3.0%	2,070,403	3.0%
Ext. & Int'l Transfers	800,000	1.0%	800,000	1.1%	787,000	1.1%	804,000	0.0%	710,007	1.1%
Study & Construction	8,110,000	18.9%	4,202,000	6.7%	8,271,000	7.7%	8,100,000	8.2%	8,540,041	8.1%
National Transfers	3,007,000	0.1%	10,001,000	10.7%	10,007,000	14.0%	8,723,000	0.0%	8,070,000	0.0%
Environmental Sanitation & Health Promotion	4,030,000	0.4%	4,100,000	0.0%	5,007,000	0.0%	0,000,000	0.0%	0,419,337	0.0%
Infectious Disease Control	10,103,000	17.7%	11,403,000	17.0%	12,401,000	17.0%	12,034,000	10.4%	10,101,000	24.0%
Institutional Development			800,000	1.0%	1,004,000	2.0%	1,070,000	2.0%		0.0%
Hospitals	24,770,000	43.0%	27,000,000	40.0%	29,740,000	41.4%	29,007,000	40.0%	29,700,300	40.0%
<b>TOTAL</b>	<b>267,870,000</b>	<b>100.0%</b>	<b>264,010,000</b>	<b>100.0%</b>	<b>268,437,000</b>	<b>100.0%</b>	<b>268,000,000</b>	<b>100.0%</b>	<b>268,000,000</b>	<b>100.0%</b>

ANNEX Q

ATTENTIONS BY HEALTH CENTERS

CEBANO

REGION	1980		1981		1982		1983		1984	
	Attente	Chg	Attente	Chng	Attente	Chng	Attente	Chng	Attente	Chng
Metropolit	158,746		217,377	24%	230,083	6%	294,708	28%	319,621	8%
1	43,936		62,780	43%	68,629	9%	79,971	17%	91,035	14%
2	49,516		85,915	74%	105,495	17%	111,818	-12%	77,885	-12%
3	210,978		260,175	23%	295,235	13%	295,531	-1%	258,293	-12%
4	70,283		69,193	-2%	68,984	0%	62,166	-10%	52,874	-15%
5	46,648		78,926	77%	94,266	19%	11,824	-13%	74,577	-9%
6	32,559		41,443	28%	65,839	58%	115,395	75%	115,684	0%
7	34,019		42,148	24%	84,970	30%	54,535	-1%	54,149	-1%
TOTAL	661,685		1,058,157	30%	1,178,492	14%	1,670,948	9%	1,644,120	-3%

CEBANO

REGION	1980		1981		1982		1983		1984	
	Attente	Chg	Attente	Chng	Attente	Chng	Attente	Chng	Attente	Chng
Metropolit	15,630		25,381	62%	46,943	85%	47,740	2%	48,276	1%
1	168,208		155,936	-7%	177,652	14%	172,519	-3%	146,899	-15%
2	122,400		131,177	7%	161,069	23%	141,786	-12%	117,717	-17%
3	171,386		154,619	-9%	190,148	21%	150,266	-17%	124,557	-21%
4	167,722		211,154	26%	231,997	10%	195,330	-16%	183,653	-6%
5	146,782		162,839	11%	188,727	16%	176,131	-7%	161,125	-9%
6	105,494		135,233	28%	190,017	41%	119,656	-37%	119,941	0%
7	97,839		121,426	24%	139,903	15%	126,288	-10%	103,407	-18%
	993,461		1,099,763	10%	1,326,456	21%	1,157,716	-14%	1,005,575	-12%

ANNEX R

COST RECOVERY AT CEBAND  
Current Leptiras

	1980		1981		1982		1983		1984		1985	
Metropolit	L.	190,470	L.	274,103	L.	250,354	L.	320,672	L.	347,780	L.	347,780
1		47,903		48,591		74,666		87,017		99,053		99,053
2		51,215		87,113		104,262 (a)		92,147		80,804		80,804
3		231,129		204,208		321,246		319,392		281,049		281,049
4		70,923		67,205		69,296 (a)		62,447		53,113		53,113
5 (Base)		48,697		84,174		102,571 (a)		89,033		81,147		81,147
6		35,424		45,112		71,640		125,562		125,878		125,878
7		37,105		44,010		59,813		59,340		58,920		58,920
TOTAL		712,866 (aa)		925,136 (aa)		1,053,846		1,155,609 (aa)		1,127,747 (aa)		1,127,747 (aa)
Growth Rate				10%		14%		10%		-2%		0%
3-Year Average		10%										

(a) MSI estimates ("Alternativas de Financiamiento, Servicios de Salud, Estudios de Casos de Honduras, 1983. MSI) All other figures for 1982 are estimated by: (1) Calculating the ratio that that region's total number of CEBAND attentions is of Region 5; and (2) Multiplying that ratio by the MSI estimate of cost recovery in Region 5. Region 5 was chosen as the base since its level of CEBAND attentions (9.6% of the total) is the closest to the regional average of 12.5% of the entire number of attentions.

(aa) Regional data for 1980-81, and 1983-85 were calculated by assuming that cost recovery increased (decreased) at the same rate as attentions for that respective region. For 1985, as no data were available on attentions by region, it was assumed that there was virtually no change, since this was the case for all CESARs and CEBANDs combined.

UNIT COST RECOVERY  
CESARs  
(Current Leptiras)

Year	Cost Recovery	Attentions	Unit Cost Recovery
1980	L. 712,866	641,693	1.00
1981	925,136	859,157	1.00
1982	1,053,846	779,472	1.00
1983	1,155,609	1,070,948	1.00
1984	1,127,747	1,044,120	1.00
1985	1,127,747 (a)	1,044,120 (a)	1.00

(a) 1985 data is the same as that for 1984, as there was no available data on the breakdown. Since there was virtually no change in total attentions for both CESARs and CEBANDs combined, it was assumed that the distribution stayed the same.

## ANNEX S

MINISTRY OF HEALTH  
ACTUAL EXPENDITURES

INCLUDING EXTERNAL FUNDS  
Current U.S. Dollars

ACTIVITY	1980	1981	1982	1983	1984	1985	Budget 1986
Vector Control	-	-	-	-	83,364,620	83,162,307	83,387,476
Ambulatory Care	8,816,733	10,183,222	11,484,662	12,481,843	12,834,720	14,838,002	16,788,782
Institutional Development	-	-	828,337	1,854,376	1,878,882	3,848,828	7,483,819
<b>Subtotal</b>	<b>88,816,733</b>	<b>110,183,222</b>	<b>112,231,100</b>	<b>114,418,010</b>	<b>117,878,210</b>	<b>120,821,938</b>	<b>128,558,178</b>
Environmental Sanitation	83,847,884	84,838,838	84,188,374	88,887,142	81,841,480	81,785,588	82,844,584
Feeding Programs	-	-	-	-	442,870	432,732	478,828
Medical Brigades	-	-	-	728,512	888,122	740,887	788,888
Hospitals	21,488,178	24,838,281	27,888,888	28,743,711	29,287,888	38,883,248	36,877,188
Central Administration	888,483	2,177,421	1,887,458	2,181,875	2,723,218	2,861,848	14,488,772
Nursing Services	2,121,838	2,445,887	2,387,838	2,187,588	2,823,887	2,888,815	2,228,488
<b>TOTAL OPERATING EXPENSES</b>	<b>127,888,887</b>	<b>144,468,181</b>	<b>147,888,842</b>	<b>158,741,857</b>	<b>165,888,848</b>	<b>168,214,888</b>	<b>182,887,888</b>
Construction	88,288,738	88,138,847	84,282,181	88,871,488	88,158,884	88,878,248	88,188,488
Current Transfers	418,483	2,587,152	18,881,127	18,287,385	5,723,833	8,778,218	17,532,888
Capital Transfers	4,777,887	588,483	888,833	787,538	584,288	782,887	828,582
<b>CAPITAL EXPENDITURES</b>	<b>93,485,108</b>	<b>91,314,482</b>	<b>103,892,141</b>	<b>107,946,411</b>	<b>94,466,405</b>	<b>98,439,353</b>	<b>106,551,958</b>
<b>TOTAL EXPENDITURES</b>	<b>181,373,995</b>	<b>235,782,663</b>	<b>251,780,983</b>	<b>266,688,268</b>	<b>260,354,253</b>	<b>266,654,241</b>	<b>289,139,146</b>

ANNEX T

STATEMENT OF WORK

BACKGROUND

The Government of Honduras has been carrying out a USAID/Honduras funded health project since 1980. That project underwent a mid-term evaluation in November, 1983. The Project is designed to end in December, 1987. This evaluation will be undertaken to determine how the project contributed to meeting Health Sector objectives, to advancing NMCCA goals and to determine lessons which could be useful for future projects in Honduras or elsewhere.

The Project which is to be evaluated has total AID financing of over \$26 million and has over twenty sub-components each containing one or more of the usual AID inputs of training, construction, equipment, administrative support and miscellaneous.

ARTICLE I - TITLE

HEALTH SECTOR I EVALUATION

ARTICLE II - OBJECTIVE

To carry out an impact evaluation of the AID/Government of Honduras Health Sector I Project and provide guidance and recommendations to both organizations about a follow-on Project.

ARTICLE III - STATEMENT OF WORK

METHODOLOGY:

The methodology to be used is based on the logical framework developed for the Project (see attachment "B"). The evaluator will begin by looking at the degree to which the goal and purpose of the Project as stated in the logical framework have been achieved. That information will be provided by AID and the Ministry of Health to the contractor.

From that base, the contractor will, on a sub-component by sub-component basis, attempt to determine why each indicator has or has not been achieved; where successful, he will try to ascertain the role played by Project resources in goal attainment. Where a high level of attainment has occurred, he will attempt to determine to what extent attainment is the result of the Project and to what extent external factors have intervened. He will focus on both design and implementation issues as well as factors related to the overall political and economic environment in which the Project operates. Design issues include such things as whether linkages between inputs, outputs, purpose and goal were logical and could reasonably have been expected to lead to the achievement of the goal; whether assumptions were correctly identified; whether the complexity of the Project was adequately planned for, etc.

ANNEX T (Cont'd)

Implementation issues include all of the mechanics of project planning, execution, monitoring, problem identification and solution and coordination. The principal participants in implementation have been AID, the Ministry of Health and the Project Coordination Unit. Other government units, such as the Ministry of Finance, have also played key roles. The contractor will also address the issues of sustainability of Project activities (from both a management and financial perspective) and specifically address the issue of the role and impact of technical assistance in achieving success.

In order to arrive at his conclusions the contractor will: rely on interviews with officials of the Honduran Government both within the Ministry of Health and outside of it and upon officials of the Agency for International Development; make field visits to at least two of the eight health regions visiting establishments at all levels of the system; and; review Project documentation made available to him by AID and the Ministry of Health.

The contractor will, as a result of his information gathering, form recommendations which will guide the Ministry of Health and AID in the preparation of a follow-on Project to the one being evaluated.