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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

No. 32

MINISTRY OF PUBLIC HEALTH,  
THE REPUBLIC OF HONDURAS

THE STUDY  
ON  
THE STRATEGIES AND PLANS  
FOR  
THE UPGRADING OF HEALTH STATUS  
IN  
THE REPUBLIC OF HONDURAS

FINAL REPORT  
VOLUME II  
MAIN REPORT

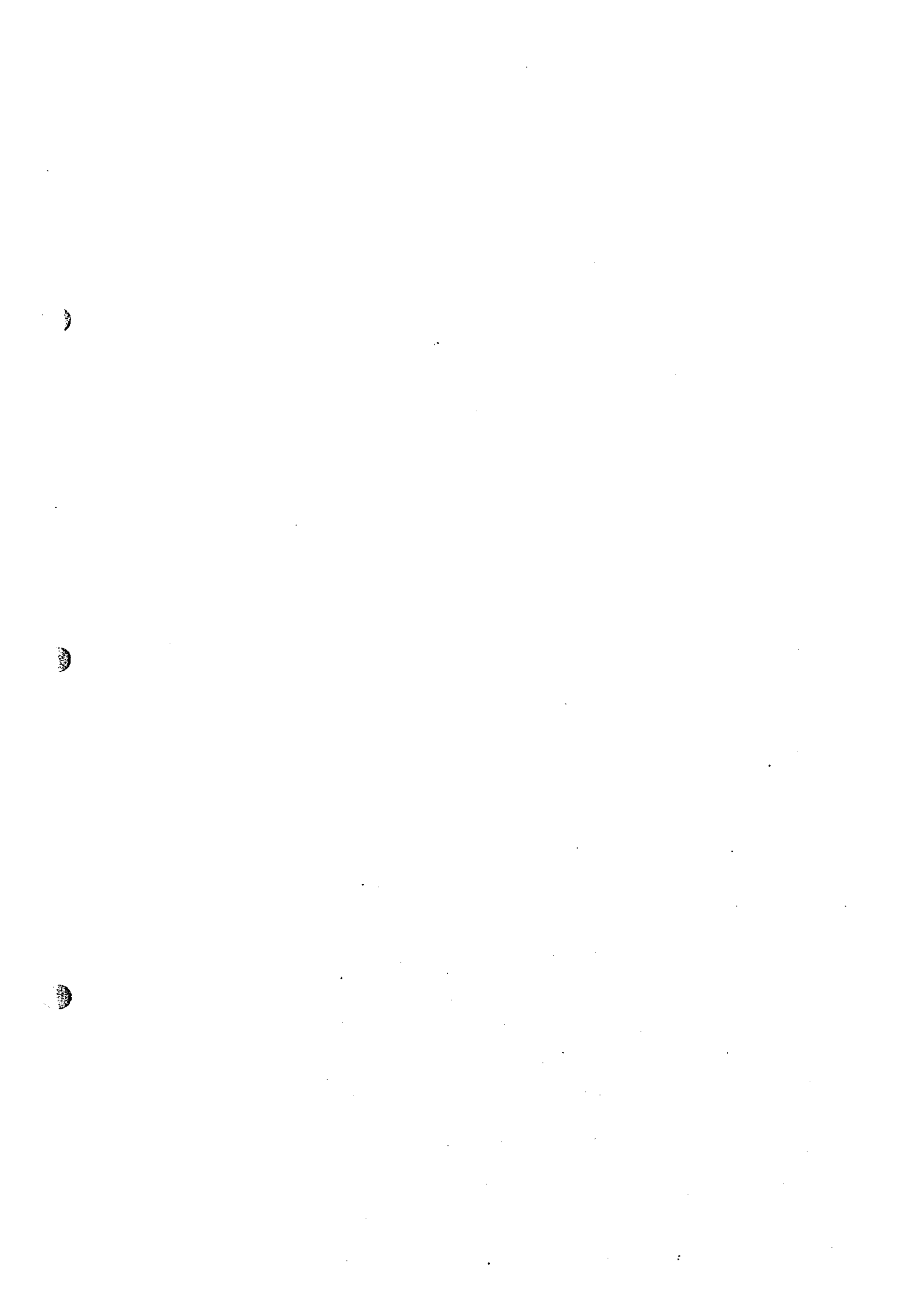
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**SYSTEM SCIENCE CONSULTANTS INC.**



In this report, project cost is estimated at March 1996 price and at an exchange rate of US \$ 1.00=11.00 Lempira(Lps.).

## PREFACE

In response to the request from the Government of the Republic of Honduras, the Government of Japan decided to conduct the Study on the Strategies and Plans for the Upgrading of the Health Status and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Honduras a study team headed by Mr. Tateo KUSANO of SYSTEM SCIENCE CONSULTANTS INC. several times between January 1995 to July 1996.

The team held discussions with the officials concerned of the Government of Honduras, and conducted field surveys at the study area. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Honduras for their close cooperation extended to the team.

September, 1996



Kimio Fujita  
President

Japan International Cooperation Agency

September 1996

Mr. Kimio Fujita  
President  
Japan International Cooperation Agency  
Tokyo, Japan

Dear Mr. Kimio Fujita

### LETTER OF TRANSMITTAL

We are pleased to submit to you the report of the Study on the Strategies and Plans for the Upgrading of Health Status in the Republic of Honduras. The report contains the advice and suggestions of the relevant authorities of the Government of Japan and the Government of Honduras as well as the formulation of the above mentioned project.

This study has been conducted by System Science Consultants Inc., based on a contract with JICA, from January 6, 1995 to October 24, 1996. In this study, we formulated a nationwide master plan and model programs for the selected model zones in the country.

In view of the urgency of improving the health status in the Republic of Honduras, we recommend that the Government of Honduras implement the proposed plans as a priority.

We wish to take this opportunity to express our sincere gratitude to the relevant officials of JICA, the Ministry of Foreign Affairs, and the Ministry of Health and Welfare of Japan. We also wish to express our deep gratitude to the concerned officials of the Ministerio de Salud Pública (MSP), Secretaría de Planificación, Coordinación y Presupuesto (SECPLAN), Servicio Nacional de Acueductos y Alcantarillado (SANAA), Secretaría de Recursos Naturales (RRNN), Secretaría de Estado en el Despacho del Ambiente (SEDA), Secretaría de Educación (SEP) and Instituto Hondureño de Seguridad Social (IHSS) in Honduras, and the Embassy of Japan and the JICA office in the Republic of Honduras for their close cooperation and assistance extended to the team during the study.

Very truly yours,



---

Tateo Kusano  
Team Leader  
The Study on the Strategies and Plans  
for the Upgrading of Health Status  
in the Republic of Honduras  
System Science Consultants Inc.

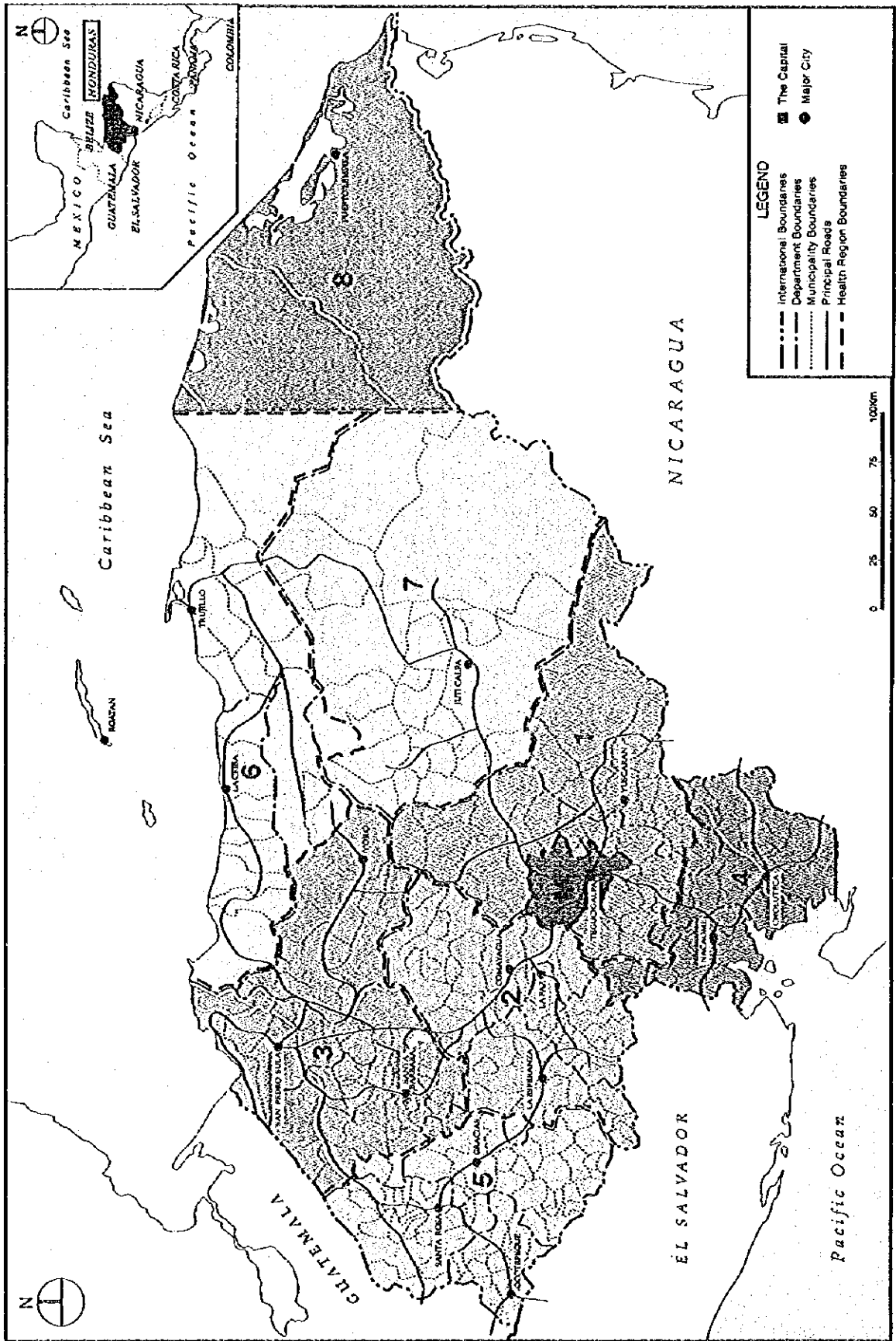


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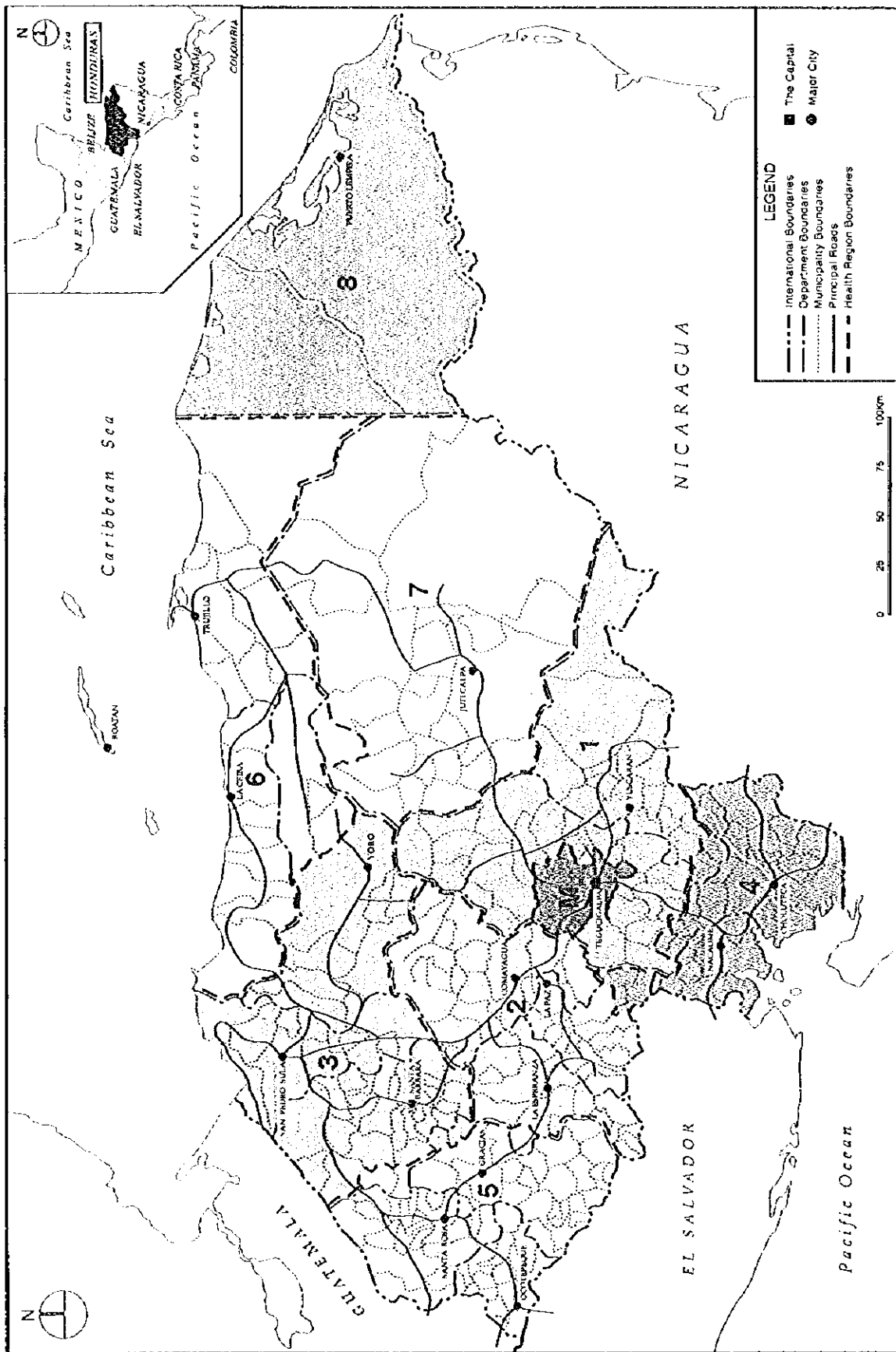
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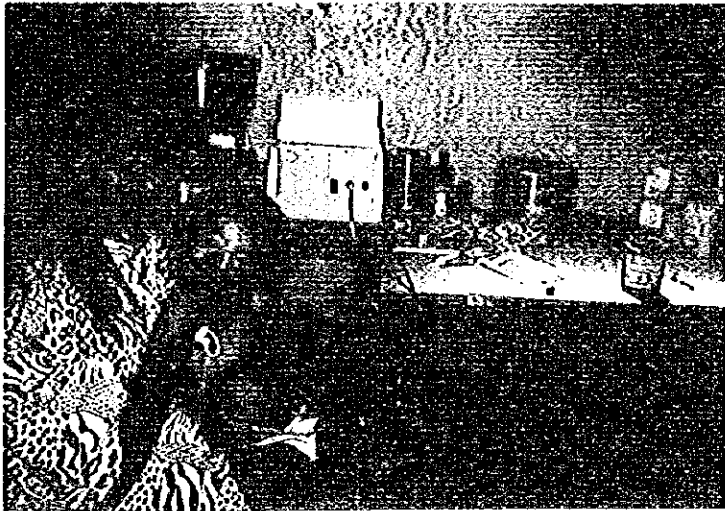
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Map of Honduras (Health Regions)

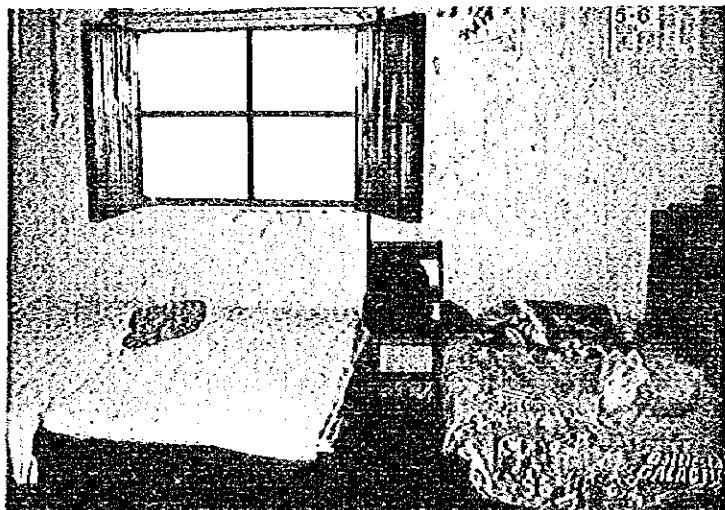


Map of Honduras (Health Regions)



#### High levels of infant mortality

Significant progress has been made in Honduras in the last twenty years; however, the Infant Mortality Rate is still high comparing with the international standards.



#### High levels of maternal mortality

Maternal Mortality Rate in rural area is still high. In order to solve the problem, a Maternal Inn has been established near regional and area hospitals for taking care of pregnant women of high risk delivery expected.



#### Malnutrition

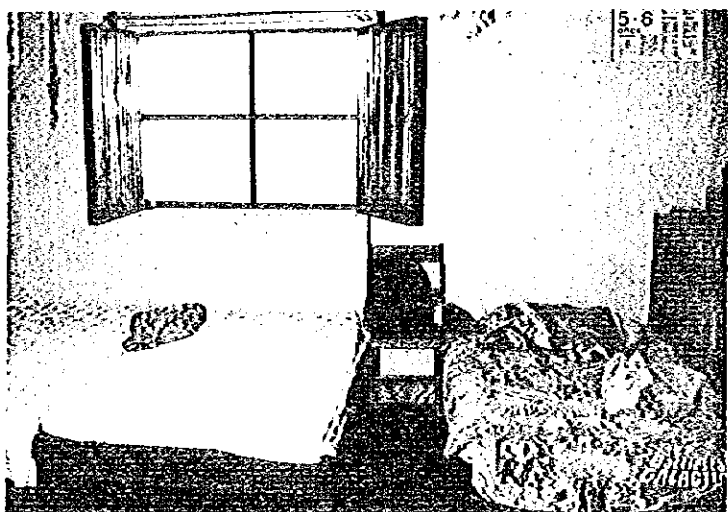
Protein-energy malnutrition is widespread among children and pregnant/lactating women. There are various kinds of vegetables sold in rural market, but most of the rural people can not afford them.

Plate 1 Current Situation of the Health-related Sector (1)



#### High levels of infant mortality

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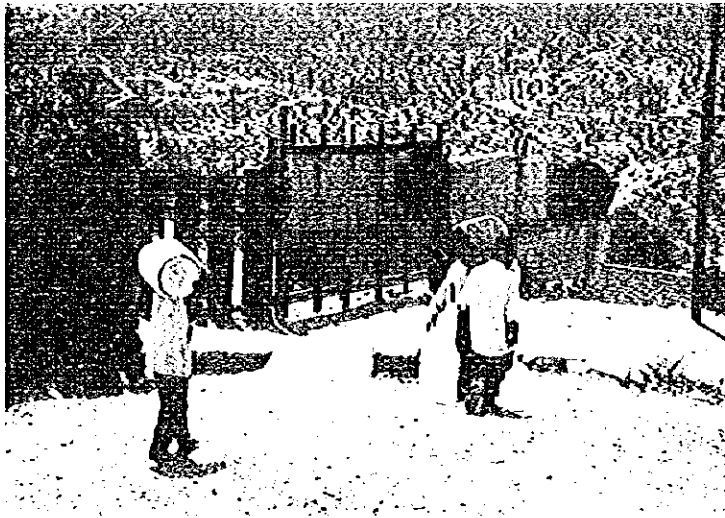
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#### Malnutrition

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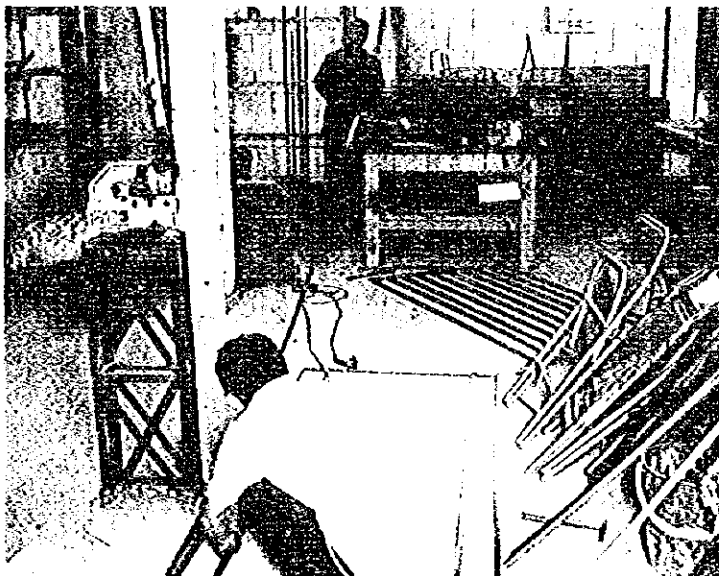
#### Poor access to safety water

Poor accessibility to safe water is a serious problem all over the country. In the marginal areas of Tegucigalpa, children carrying big bucket full of water can be seen.



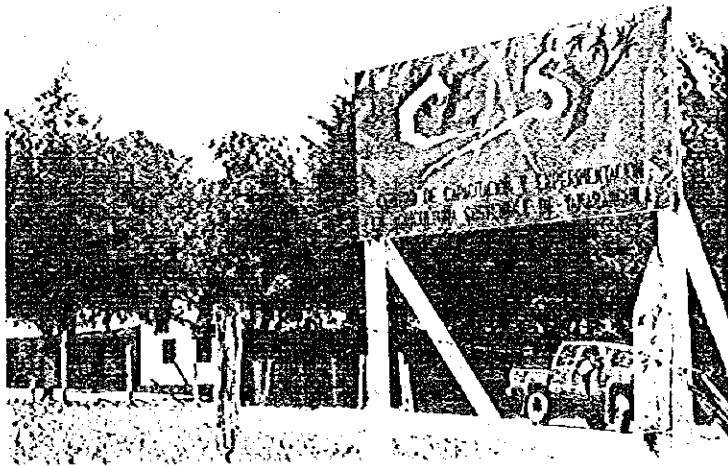
#### High mortality from accidents

In the urban areas, high mortality rate from accidents including traffic accidents has been one of the most serious problems. With the rapid growth of the population, the emergency service provided by public hospitals can not meet the needs in the urban areas.



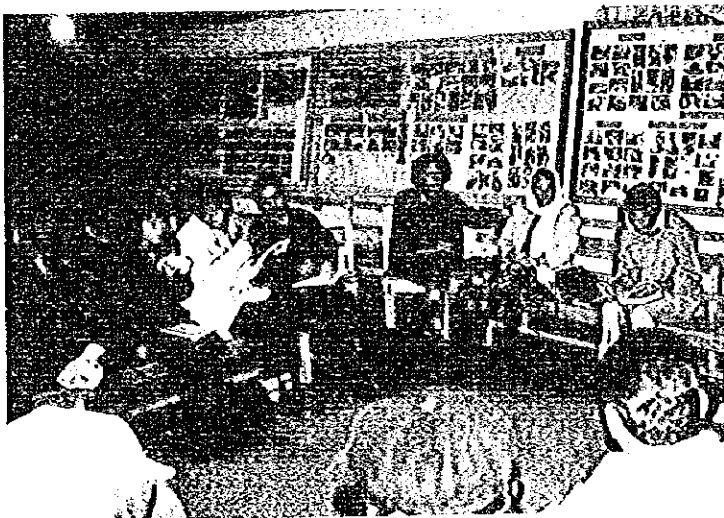
#### High mortality from violence

Besides the traffic accidents, violence is another serious problem which causes high mortality and morbidity in the urban areas. NGOs, MSP and IHADFA have implemented various programs providing vocational training, recreation facilities etc. in order to cope with juvenile delinquency.



#### Poverty alleviation programs

In rural areas, NGOs in coordination with RRNN have actively implemented income generation programs including agriculture training and seed fund provision programs.



#### Health promotion through social participation

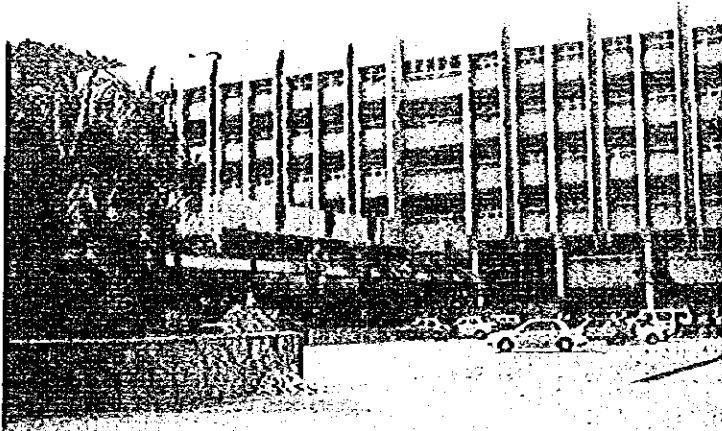
Community development organizations have been established by the UNDP programs in the western mountain areas in Honduras. Those organizations have made development activity plans through discussions among community members.



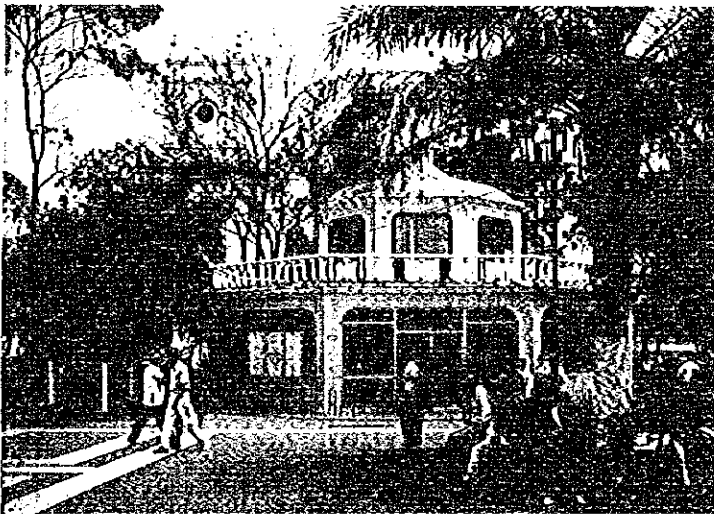
#### Drug supply logistics

Although the drug management system of health centers has been improved through the assistance of international agencies such as USAID and OPS, many health institutions suffer from insufficient supply of drugs in reality.

### Hospital Mario Catarino Rivas

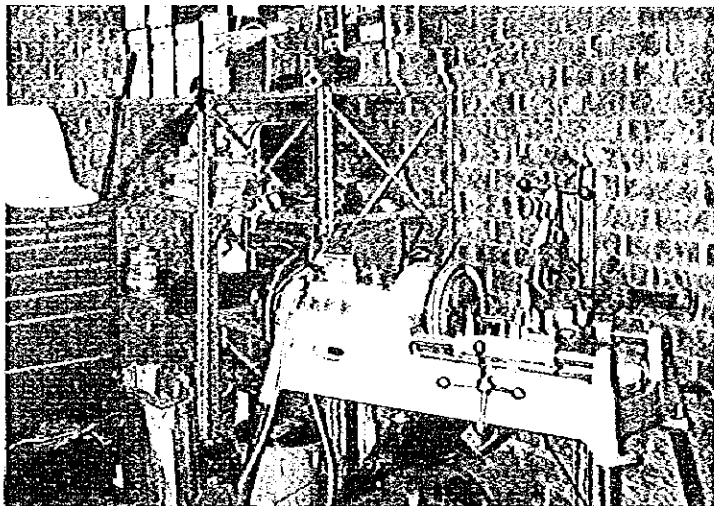


This hospital is the only tertiary health service provider in the northern region of Honduras. In addition, it is also the only public hospital providing birth delivery and emergency care services in San Pedro Sula. The workload of the hospital has been growing to cope with the rapid population growth.



### AIDS prevention campaign

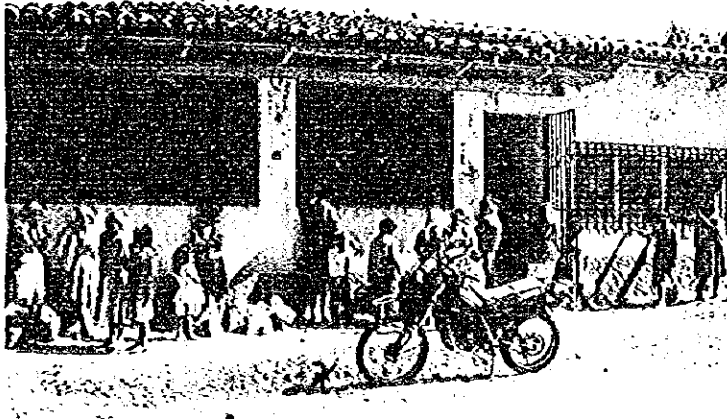
As one of the AIDS prevention programs (COMVIDA) conducted by the municipality and MSP, information about AIDS and AIDS prevention has been presented to the public in the Kiosk located in the central park.



### Workshop of the Health Region Office

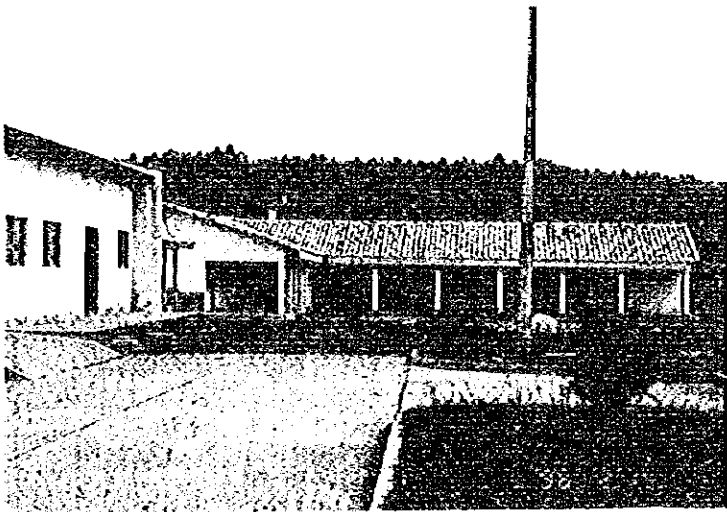
CENAMA of MSP, which is responsible for maintenance and operation of facilities and equipment, can not provide adequate technical assistance to local health service providers due to lack of financial resources.





Health center (CBSAR) in the mountain areas

This health center is located in Yamaranguila municipality, which has serious poverty rate and most of whose population are lenca people. Some people, living far from the health center, need to walk to the center for about 5 hours.



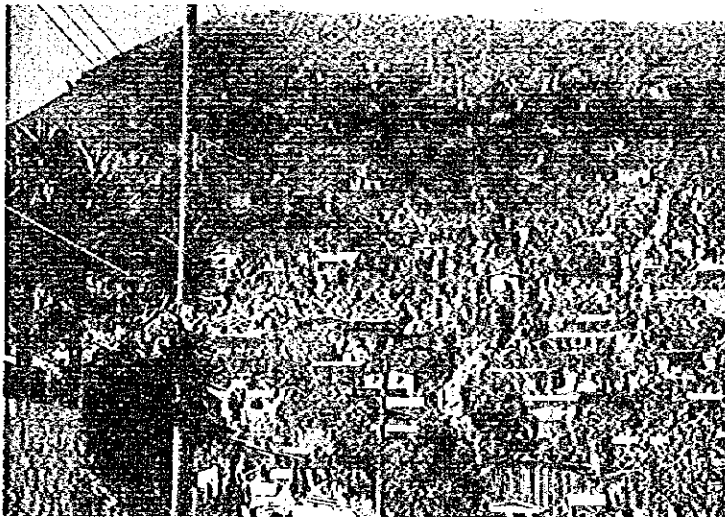
Establishment of maternal inn

A maternal inn was constructed in the backyard of Hospital La Esperanza through social participation activities in cooperation with MSP.



Downtown area of La Esperanza municipality

La Esperanza, is the center of the Dept. of Intibucá, where the municipal administration offices are located. Infrastructures such as water supply, electricity, and road have not been well developed in this area.



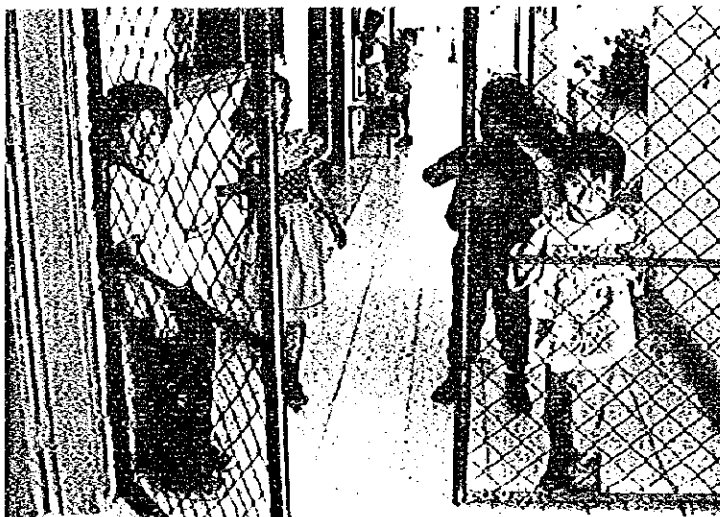
Housing conditions in the marginal areas

The number of immigrants, who come from the rural areas and live in the marginal areas of Tegucigalpa, has been rapidly increasing. They live in the steep slope of the mountains where there is no sufficient infrastructure.



Poor accessibility to safe water

SANAA and UNICEF have been actively implementing water supply programs in the marginal areas. However, the management system has not functioned well due to lack of maintenance care of water source. In this photo, community members are collecting water spilled out of the broken public faucet.



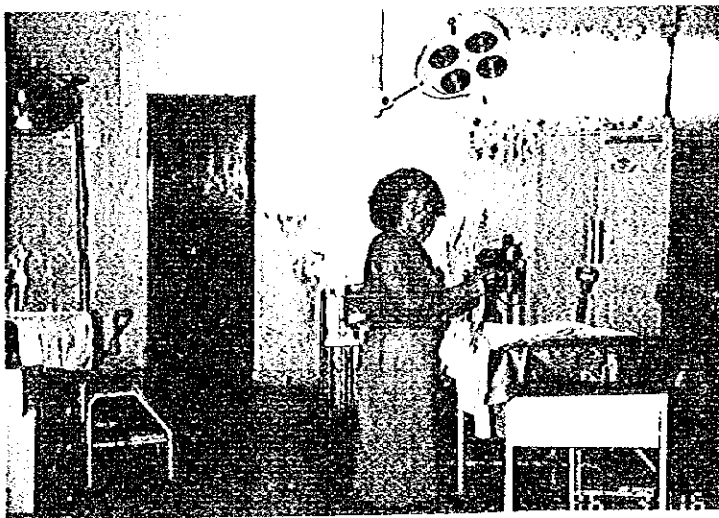
Day care center

NGOs provide various programs including day care center service, informal education, health education etc. in order to allow single mothers to go work and to cope with the problem of street children.



Active agriculture production

The Dept. of Olancho enjoys its rich agriculture production because of plenty of natural resources and effective support through the foreign aid programs including CIDA.



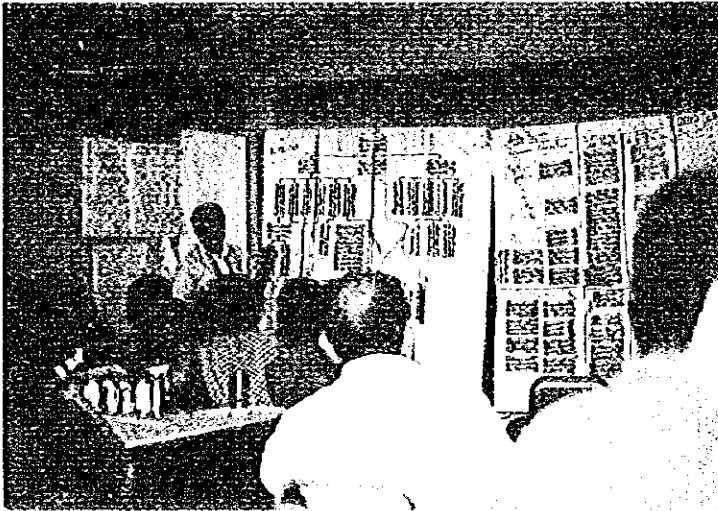
MCH Clinic

MCH clinics have been constructed in order to improve accessibility to maternal health services in the rural areas in the Dept. of Olancho.



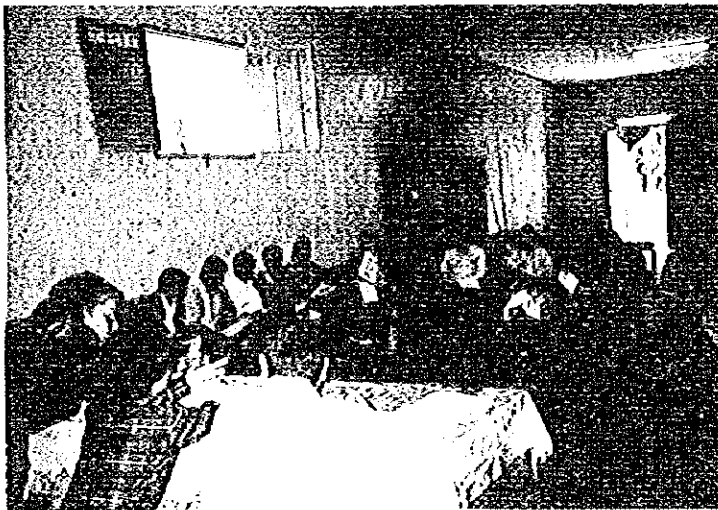
Hospital San Francisco

This regional hospital has provided health services with community members' acceptance.



#### PCM/ZOPP Workshop

During the field study in the Phase I and Phase II study period, PCM workshops were held for problem analysis and formulating common basis for planning; officials from related ministries were involved in these workshops.



#### Small group discussions

During the field study in the Phase III study period, small group discussions were held for obtaining the consensus from the concerned people; health staff, community leaders etc. participated in the discussions.



#### Interviews with community members

During the field study in the Phase III study period, the study team members made interviews with community members in order to reflect actual needs of ethnic people and especially voices of women to planning.

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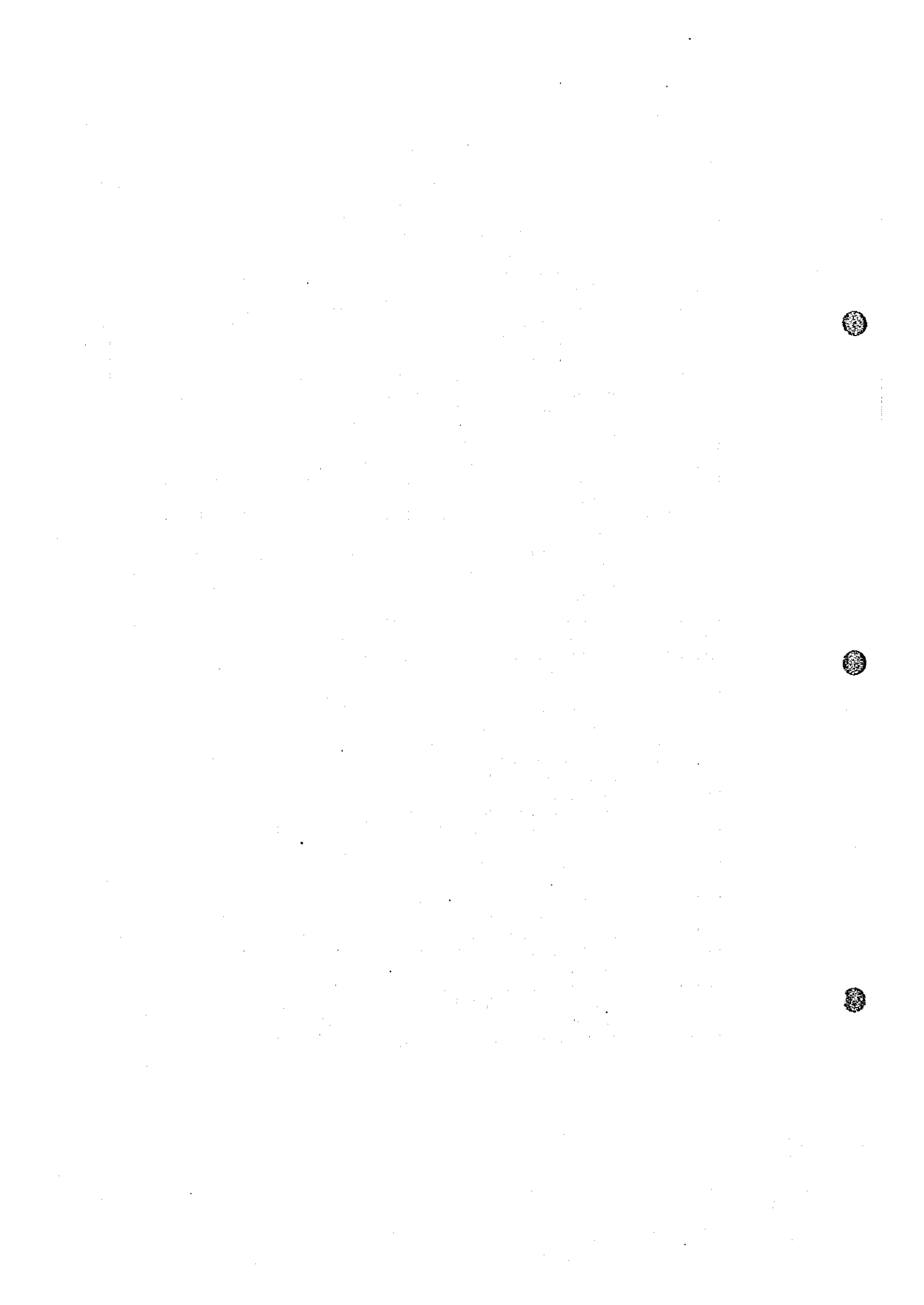
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## Acronyms / Abbreviations

AHMON	: Asociación Hondureña de Municipalidades
AIDS	: Acquired Immune Disease Syndrome
AIDSCAP	: AIDS Control and Prevention
ARI	: Acute Respiratory Infection
ASHONPLAFA	: Asociación Hondureña de Planificación Familiar
AV	: Audio-visual equipment
AZT	: Azathioprine
BCH	: Banco Central de Honduras
BCIE	: Central American Bank for Integration and Economy
BHN	: Basic Human Needs
CAD	: Computer Assisted Design
CDM	: Comité de Derechos de la Mujer
CENAMA	: Centro Nacional de Mantenimiento
CESAL	: Special Health Commission
CESAMO	: Centro de Salud con Médico y Odontólogo
CESAR	: Centro de Salud Rural
CESCCO	: Centro de Estudio para el Control de Contaminantes
CMI	: Clínica Materno Infantil
CODA	: Consejo de Desarrollo Agrícola
COHDEFOR	: Corporación Hondureña de Desarrollo Forestal
COHEP	: Consejo Hondureña de la Empresa Privada
CONSUMI	: Consejo Superior del Ministerio
COTIAS	: Technical Committee on Environment and Health
DALY	: Disability-Adjusted Life Years Lost
DIMA	: División de Ingeniería y Mantenimiento
EAP	: Economically Active Population
EMD	: Engineering & Maintenance Division
ENEE	: Empresa Nacional de Energía Eléctrica
ENESF	: Encuesta Nacional de Epidemiología y Salud Familiar
ENT	: Ear, Nose and Throat
EPI	: Expanded Program for Immunization
FHHA	: Fundación Hondureña de Investigación Agrícola
FHIS	: Fondo Hondureño de Inversión Social
GDP	: Gross Domestic Product
GOH	: Government of Honduras
GTZ	: German Cooperation Agency
HED	: Health Education Division
HRD	: Human Resource Development Division
IBRD	: International Bank for Reconstruction and Development (World Bank)
ICU	: Intensive Care Unit
IEC	: Information, Education and Communication
HHADFA	: Instituto Hondureño de Alcolismo, Drogadicción y Farmaco Dependencia
HISS	: Instituto Hondureño de Seguridad Social
IMR	: Infant Mortality Rate
INFOP	: Instituto de Formación Profesional
IPPF	: International Planned Parenthood Federation
JNBS	: Junta Nacional de Bienestar Social
JOCV	: Japan Overseas Cooperation Volunteer
JUPSA	: Jovenes Unidos Para la Salud
KAP	: Knowledge, Aptitude and Practices
M&E	: Maintenance and Evaluation

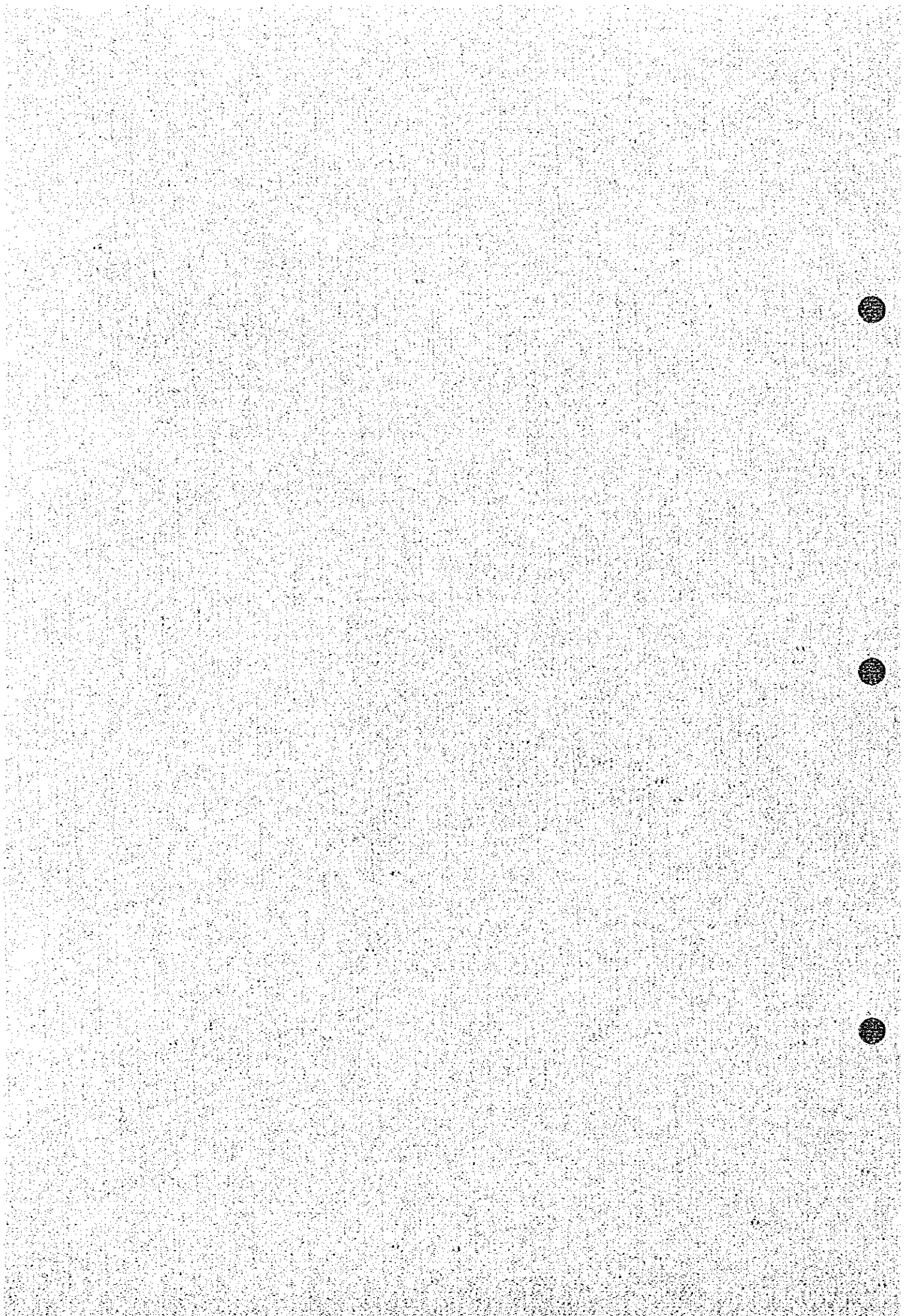
## Acronyms / Abbreviations

MCH	: Maternal Child Health
MHP	: Master Health Plan
MMR	: Maternal Mortality Rate
MNR	: Magnetic Nuclear Resonance
MPH	: Masters of Public Health
MSP	: Ministerio de Salud Pública
MSPS	: Municipality of SPS
MTPS	: Ministerio de Trabajo y Protección Social
MWM	: Men who have sex with men
NAC	: National AIDS Committee
NGO	: Non-Governmental Organization
NMHP	: National Master Health Plan
O&M	: Operation and Maintenance
ONALSIDA	: Comisión Nacional sobre SIDA (AIDS National Commission)
OPS	: Organización Panamericana para la Salud
ORT	: Oral Rehydration Therapy
PAHO	: Pan American Health Organization
PANI	: Patronato Nacional de la Infancia
PCM	: Project Cycle Management
PDAE	: Proyecto Demostrativo de Agricultura
PIAS	: Investment Plan for Health and Environment
POSSS	: Proceso de Organización y Simplificación del Sistema de Suministros
PRAF	: Programa de Asignación Familiar
PROAGRO	: Agriculture Plan for Field Development
PRONASSA	: Programa Nacional de Servicios de Salud
SANAA	: Servicio Nacional de Acueductos y Alcantarillado
Sec.RRNN	: Secretaría de Recursos Naturales
SECPLAN	: Secretaría de Planificación, Coordinación y Presupuesto
SEDA	: Secretaría del Ambiente
SEP	: Secretaría de Educación Pública
SIDA	: Síndrome de Inmuno Deficiencia Adquirida
SPS	: San Pedro Sula
SPU	: Social Participation Unit
STD	: Sexually Transmitted Diseases
TAS	: Técnico en Operación y Mantenimiento
YLD	: Years of Life Disabled
YLL	: Years of Life Lost

*CHAPTER 1*

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*INTRODUCTION*





## 1. INTRODUCTION

This Study is designed to provide scientific and technical basis for a long-term master health plan through the year 2010 in Honduras. It is based on the review of the past experience in health services provided by MSP, relevant agencies concerned, and donor countries. The proposed master health plan presents scenarios, strategies, a National Master Health Plan and Model Programs covering not only the health sector but also the health-related sectors.

### 1.1. *Background*

Health has been one of the most important sectors for the Government of Honduras and approximately 10% of the national budget have been allocated to its support. International organizations, such as OPS (PAHO) and USAID, have also been extending development assistance to improve this sector. Although these efforts have made real contribution to improving health, it is essential to have comprehensive and integrated plans in order to utilize the existing resources most effectively and to make the maximum improvement in health and health services. In this regard, the Government of Honduras requested the Government of Japan to implement the Study on the Strategies and Plans for the Upgrading of Health Status in the Republic of Honduras. Upon receiving the request, the Government of Japan dispatched a preliminary study team to Honduras and the Scope of Work (S/W) was agreed upon between the two governments in April 1994. Based on this agreement, the Study team was dispatched to Honduras on January 21, 1995 and submitted the Draft Final Report on July 24, 1996.

The proposed implementation program was officially reviewed and discussed with the Honduran government and other donors. The approved results of this process have been incorporated with the final official implementation program.

### 1.2. *Study Objectives*

The overall objective of this Study is to develop integrated strategies and plans for upgrading health status in Honduras for the target years of 2000 and 2010.

### 1.3. *Study Flow*

This Study has been implemented at the following three stages.

Phase I : to develop inter-sectoral strategies for upgrading of health status of the people of Honduras

- Phase II : to formulate an integrated National Master Health Plan for improvement of health and health related services
- Phase III : to develop specific action plans for the components/regions identified to be essential in the National Master Health Plan

#### 1.4. Structure of Draft Final Report

This report consists of three different volumes as follows.

Volume 1: Summary

Volume 2: Main Report

Volume 3: Supporting Report

Volume 4: Data Book

#### 1.5. Study Team

This Study has been implemented by System Science Consultants Inc. (SSC) in association with Management Sciences for Health (MSH).

The study team has been provided competent collaborations from its counterparts, Coordination Committee (C.C.\*) and CONSUMI\*\* (Consejo de Superior del Ministerio) in the Government of Honduras.

\* C.C. : representatives from MSP, SECPLAN, RRNN, SEP, SEDA, SANAA and IHSS

\*\* CONSUMI : The Minister, Vice-minister, General Directors, Chief Administrator and Advisors

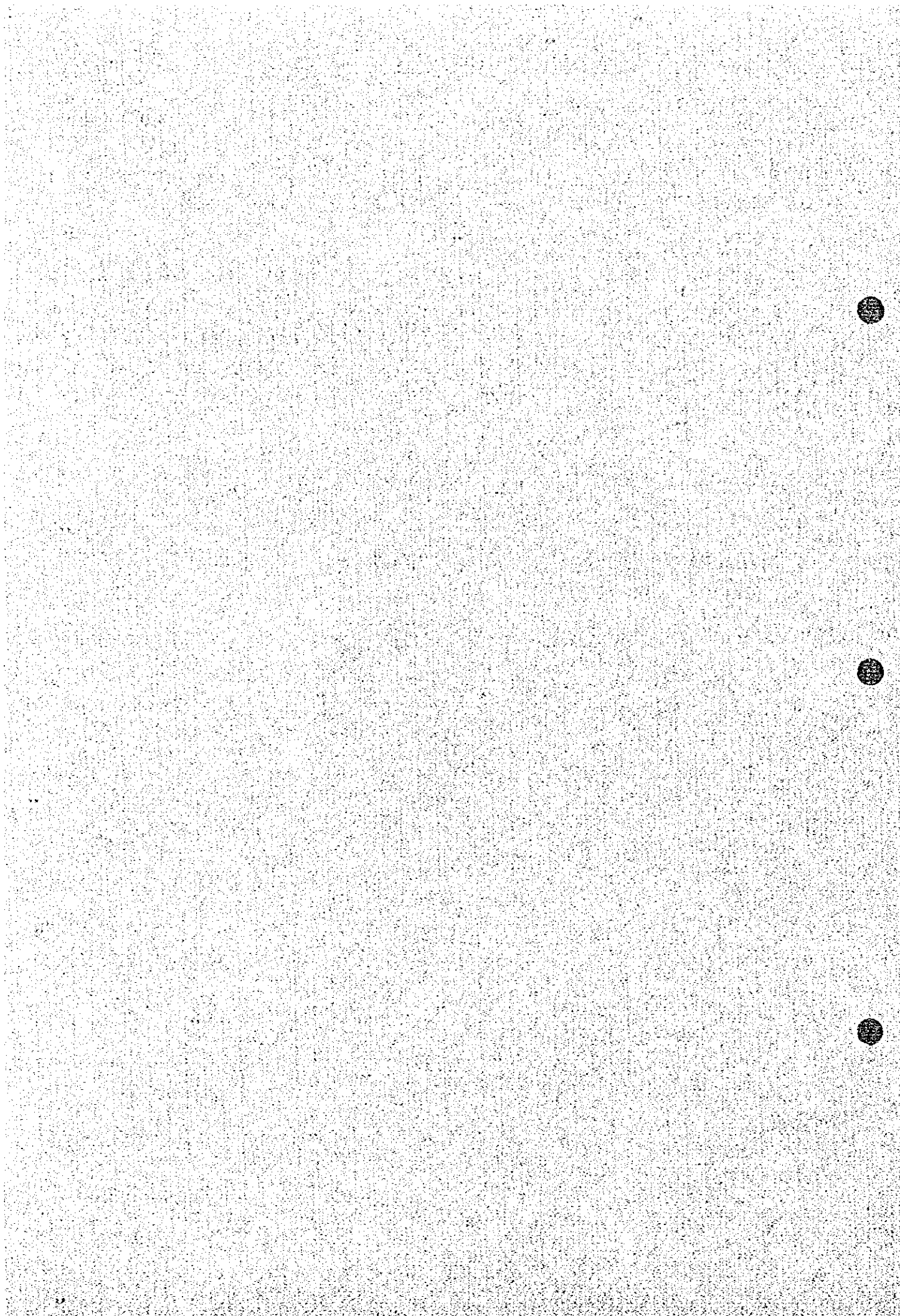
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**CHAPTER 2**

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**STUDY METHODOLOGY**



## **2. STUDY METHODOLOGY**

During each of the three phases of the Honduras NMHP study, a combination of different methods was used by the study team and its counterparts. The relevant activities were conducted to support the study's framework, that is, the conceptual design explained in Chapter 3.

### **2.1. Data collection (apart from the field surveys)**

#### **2.1.1 Interviews with key informants**

Both in Tegucigalpa and field visits or region-based activities, the study team conducted interviews with key informants from concerned institutions, including those represented in the Coordination Committee, and with individuals of interest: municipal officers, community leaders and members of the population at large (refer to List of Contacts).

#### **2.1.2 Field visits and direct observation**

A number of field visits were conducted by the study team and its counterparts. Through the Study, visit of health facilities, infrastructure works and sample communities, and direct observations of delivery of health services and selected aspects of community life were organized. Quick anthropological surveys were conducted among Lenca, Pech and Tolupan populations. An important part of the work for preparation of model health programs was done in the respective area of application of these programs.

#### **2.1.3 Review of existing statistics and documents**

The Study recognized and took advantage of the extensive documentation that was made available to the team: these documents, reports, evaluations, policy statements, operation plans, statistics and others were carefully reviewed and eventually discussed with the counterpart or the institution of origin. The most relevant were then incorporated into the drafts prepared by the team (refer to Annex List of documents).

### **2.2. Field surveys**

The field surveys were conducted during the second phase of the Study in order to collect information missing from existing documents or sources. The thematic contents of the

surveys, the methodology and questionnaires used for data collection, and the main results are available in Volume 3 of this report. Selected results have been incorporated into the Chapters referring to Problem Description and National Master Health Plan.

### 2.2.1 Household survey

The sampling design for the household survey reflected the need to obtain intervention-oriented information on specific zones or subgroups rather than to obtain a nation-wide, statistically significant picture of the variables investigated. Thus, it was decided not to use a self-weighted sample, such as the one used in the National Epidemiology and Family Health Surveys. The overall design would still be that of a two-step cluster sample survey.

Given an initial sample size of 2,500 households, a fixed number of household was assigned to each geographical stratum defined in the 1988 Population and Housing General Census, as follows:

Urban, large cities:	700
Urban, small cities:	700
Rural:	1,000

In addition, 50 households would be assigned to each of the traditionally discarded departments of Gracias a Dios and Islas de la Bahía, thus leading to a total of 2,500 households.

Within each stratum, the number of households in the sample was assigned proportionally to the total number of households for each of the 6 zones defined through cluster analysis during the first phase of the Study: (see Figure 2-1)

Zone A:	Copán, Intibucá, La Paz, Lempira, Ocotepeque, Santa Bárbara
Zone B:	Colón, Comayagua, El Paraiso, Olancho
Zone C:	Atlántida, Cortés, Francisco Morazán, Islas de la Bahía
Zone D:	Valle
Zone E:	Choluteca, Yoro
Zone F:	Gracias a Dios

A segment size of 30 households for urban areas and 20 households for rural areas was then chosen, leading to a total of 101 segments to be included in the sample.

The selection of segments was done by systematic sampling, with probability of selection based upon the number of households listed in the Census information. Within each segment, a random starting point was chosen and the house selected according to their

sequence on the segment map. Details of the sampling methodology and selection are available in the Guide for Using the Databases that is included in Volume 3.

The non self-weighting character of the sample design implies that resulting parameters (frequencies and averages) can be estimated directly only at stratum or sub-stratum level. The calculation of national estimates will require the application of a weighing system to the combination of partial estimates, where the weight will correspond to the proportion of the population included in each partial stratum or sub-stratum.

### **2.2.2 Facilities survey**

A total of 11 private facilities were selected in a non-random manner, as the selection attempted to include various types of private practices: size of clinic, base of affiliation, etc... The selection process for the 19 CESAMOs and 15 CESARes was not random either, as several characteristics were sought:

- representation of the previously defined study zones
- closeness of the binomial CESAMO-CESAR, to be able to analyze referral patterns from a local system point of view
- minimization of logistical difficulties.

### **2.2.3 Exit interview survey**

The exit interviews were conducted at the same facilities covered by the facility survey. However, in order to increase the sample size in larger hospitals, it was decided to omit the exit interviews in a small sub-sample of MSP area hospitals, assuming a certain level of homogeneity in the patterns of hospital use at this level.

As an average, the exit interview survey in hospitals implies the interview of: 20 clients from the outpatient clinic, 10 clients from the emergency clinic, 10 hospitalized patients about to be discharged. In a number of large hospitals (such as Hospital Escuela, Mario Catarino Rivas, IHSS), this number was doubled.

For the health centers, 30 patients were interviewed in each CESAMO and 20 in each CESAR.

The selection of patients used different systems according to the facility's internal organization. These systems, documented for each facility, took into consideration the following principles:

- the selection was systematic, so that the investigator did not have to use his/her own decision in the process;
- it covered the complete range of time for the clinic service, in order to avoid a selection bias linked to client's time of arrival or departure; however, logistical constraints prevented the full implementation of this principle for emergency patients.
- it covered an acceptable sample of the range of services offered during the clinic working hours.

### **2.3. Methods for analysis and feed-back**

At all times during the Study, the team emphasized the need for the national counterparts to acquire ownership of the proposed plan and strategies and expressed its own openness to suggestions throughout the elaboration process. In addition to individual contacts and meetings on specific technical topics with the counterparts, several methods were used by the team in order to integrate them in the process of preparation of the NMHP and to obtain periodic feed-back on the contents of the draft documents.

#### **2.3.1 Coordination meetings**

At the beginning and the end of each period of in-country work, the team presented the advances of the NMHP to the following:

- political level of the MSP (CONSUMI; "Consejo Superior del Ministerio", that is, the Minister, Vice-Ministers, General Directors, Chief Administrative Officer and advisors)
- Coordination Committee, including representatives from MSP, SECPLAN, Sec. RRNN, SEP, SEDA, SANAA and IHSS, and technical counterparts
- representatives of donor agencies

Comments and suggestions made by participants during the meeting or addressed to the Hospital Division of the MSP, acting as the institutional link to the Study, were then discussed and incorporated into revised documents.



### **2.3.2 Workshops and seminars**

#### ***(1) Analysis workshops***

During the first two phases of the Study, two workshops were organized with counterparts from different institutions in order to conduct an analysis of the priority health problems previously identified. The workshops used the problem analysis methodology developed by GTZ as a part of the Project Cycle Management (ZOPP method), through which hierarchical levels of causal factors were identified and discussed for each of the priority problems, thus establishing a system-oriented problem analysis rather than an epidemiological description. The second step involved the definition of possible strategies to solve the problems, based upon the transformation of causal factors into specific objectives for improvement.

#### ***(2) Model program-area workshops***

In order to root the design of the model health programs into the community context, and to ensure that the study team proposals corresponded to the locally-defined needs, introduction and feed-back workshops were organized in the four areas of application of these programs, that is, San Pedro Sula, Juticalpa, Tegucigalpa and La Esperanza. These workshops included community leaders and representatives, municipal officers and region/area health personnel, thus achieving a certain level of social participation in the design of the model programs.

### **2.3.3 Technical feed-back meetings**

During the third phase of the Study, a series of weekly meetings was organized by the Vice-Minister for Service Network and the Vice Minister for Institutional Development and Sectoral Policy, with appropriate counterparts, to review the strategies proposed in the NMHP, and to acknowledge the recent advances in existing national programs and projects. The themes discussed during these sessions included: access to health services, extension of the service network, improvement of problem-solving capacity, referral system, facility/equipment maintenance, environmental health, occupational health, water and sanitation, human resource development, health education, social participation and health financing.

Other technical review meetings were held with the main counterpart group in the MSP, with the regional teams concerned with the development of model health programs, and with SANAA and the IHSS.

**CHAPTER 3**

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**CONCEPTUAL DESIGN**

### 3. CONCEPTUAL DESIGN

#### 3.1. *Model for analysis*

In Honduras, as in many other parts of the world, the health/disease phenomenon is not seen as an isolated biological concept, but rather as part of a more encompassing environment which influences the health status of the Honduran population. Components of this environment include factors such as natural environment, social settings, economic conditions, politics, education, culture, religion, etc.. (see Figure 3-1, 2, 3 for environmental information). The need to understand the impact of those conditions upon the health status has led the Honduran health authorities to promote the analysis of factors affecting life ("análisis de las condiciones de vida") as a complement to the strictly epidemiological analysis of the health conditions.

The analysis conducted during the study, based upon the problem analysis achieved during the ZOPP analysis workshops, converges with the factors affecting life orientation; it focuses on three broad dimensions which affect health outcomes, namely context, household/community behaviors, and health services delivery; and explores ways of modifying these dimensions to improve health status in Honduras.

#### 3.1.1 Context

It is recognized that the health of a society reflects many factors, some of which are deeply rooted in the nature of the setting: its geography, demography, economic resources and social context. To a real extent, this context establishes the fundamental conditions of risk which, in turn, generate the baseline incidence and prevalence of death, illness and disability. Improving these contextual factors is a central goal of all development plans in any society; indeed, poor social and economic conditions make specific efforts to improve health status more difficult. Yet context alone does not determine the health outcomes. Those depend, as well, on the choices made by society and the individuals and households within it. While no strategy can fully offset the health damaging impacts of poverty, ignorance, and miserable living conditions, the informed and/or judicious household behaviors, and effective responses from the service delivery system can generate improved health outcomes.

### **3.1.2 Household/community behaviors**

The context establishes the conditions of risk but the impacts in terms of health outcomes remain to be established. Clearly, inadequate resources, weak infrastructure, hostile geography, and low levels of education all limit choices and increase the general susceptibility to illness and disability. Yet these impacts are often made worse by individual and household behaviors rooted in ignorance, artificially limited choices, and traditional behaviors. For example, the impact of limited food supply on family health will vary greatly depending on traditions for preparation, feeding order in the family, and storage practices. Changes in these behaviors can improve health outcomes without necessarily addressing the fundamental inadequacy of supply. Eventually, the combination of context and household/community behaviors define high and low risk groups and create new conditions of incidence and prevalence which generate the demand for services.

### **3.1.3 Service delivery**

In the end, the health outcomes will also depend upon the responses to that demand. Adequate access to a network of facilities and institutions, offering a comprehensive range of services and organizational efforts to improve the quality and effectiveness of these services, are central to minimizing the morbidity and mortality associated with a given level of risk.

The goal of the study is to build on that general idea and identify a number of specific actions that could be taken to improve health outcomes over the next fifteen years. Each of these actions is directed at specific characteristics of the three health-affecting dimensions: context, household/ community behaviors, and service delivery, which have been identified as affecting a set of priority health outcomes.

## **3.2. *Elaboration of the National Master Health Plan***

### **3.2.1 Priority health problems/indicators**

Guiding the selection of strategies included in the National Master Health Plan are a set of seven major health outcome indicators reflecting priorities throughout the life cycle of the Honduran population. Additionally, four areas which are not technically outcomes have also been targeted for action. Two of these, water/sanitation and nutrition/food security

were selected because they are so critically related to the target outcomes and because they are directly susceptible to specific initiatives for improvement. The other two, environmental health and occupational health, were identified because of their growing importance and the need for specific responses from the health care system if potentially adverse impacts on health outcomes are to be avoided. Target Indicators for the National Master Health Plan are:

- Infant Mortality Rate
- Maternal Mortality Rate
- Levels of malnutrition/food security
- Access to water and sanitation
- Incidence of HIV/AIDS
- Incidence of vector-borne diseases
- Mortality and morbidity from accidents
- Mortality and morbidity from violence
- Mortality and morbidity from chronic degenerative diseases
- Scope of environmental health activities
- Scope of occupational health activities

It is recognized that improving all of these indicators will not have the same priority in every setting. For many settings in Honduras, the fundamental goal of reducing infant and maternal mortality remains the primary challenge. In others, reducing the health and social impacts related to HIV/AIDS, and accidents and violence are of immediate and growing importance.

Even more importantly, as Honduras responds effectively to the challenges from acute and preventable illness, increasing priority will need to be directed at managing the inevitable increase in chronic degenerative diseases that will accompany successful reduction of premature mortality and increase of life expectancy. In this sense, these priorities represent a continuum across the life cycle of the population.

The goal of the project is to establish a master plan for health improvement which will be operational until the year 2010. Therefore, the Study recognizes not only the reality of different priorities in different settings in Honduras but also the potential for effective

programs to change priorities over this period as a result of success. Over this time frame, planning is a dynamic and continuous exercise.

### **3.2.2 Strategies for the improvement of the health status**

In terms of the model presented above, health improving strategies are activities implemented for the purpose of changing health risks, the responses of households and community to those risks, and the ability of the health service delivery system to reduce the resulting levels of mortality and morbidity. The goal of the National Master Health Plan is to develop a set of strategies that can have the most impact on health in Honduras by the year 2010. The achievement of this goal is measured by improvements in the indicators already identified. However, the health outcomes measured by the indicators will not have the same priority in every setting nor will given strategies have the same potential for impact. It therefore follows that the "best" set of strategies will be different in different settings. The National Master Health Plan specifically considers the criteria for identifying priorities and selecting the most effective set of strategies.

Context-oriented strategies are designed to reduce risk. Behavior-modification strategies are designed both to reduce risk and to increase demand for appropriate services. Service delivery strategies are designed to improve health delivery system responses. The National Master Health Plan recognizes the need to address all three dimensions if the maximum impacts on health are to be generated.

Identifying strategies requires understanding more about the ways that the characteristics of context, household/community behaviors and service delivery interact to produce illness and modulate its impact on the lives of Hondurans. The Study Team has sought to gain the understanding in a number of reinforcing ways; extensive field visits and interviews, multiple ZOPP exercises in which representatives of different institutions and levels with interest in health collectively identified critical problems and their linkages to critical dimensions of the system, and extensive surveys of households, facilities, and users of services. The results of these processes are incorporated in the analysis that follows.

### **3.3. Scope of the Master Health Plan**

#### **3.3.1 National Master Health Plan**

The first purpose of the National Master Health Plan is to provide to all actors in the health and health related sectors some general orientations and the strategies on the future of the health system within the next fifteen years, that is, ordered, coordinated groups of activities that are and should be undertaken in order to achieve the objectives set for the Plan's time frame. The goals and objectives being set for the years 2000 and 2010, and the planning framework defined in terms of socio-economic, demographic and policy perspectives, the Plan thus proceeds to present the generic strategies whose implementation will hopefully lead to an improvement in the health status, as assessed by desired changes in the selected indicators. As discussed before, these fifteen generic strategies are grouped into three broad dimensions which refer to context, household/community level behaviors and health services delivery. Implemented together in the proper sequence, through sectoral and intersectoral activities under the guidance of the MSP, they constitute the National Master Health Plan.

Evidently, not all priority health problems will respond in the same way to the proposed strategies. For instance, improvement in maternal mortality rates will require more strategies specifically aimed at improving access to health services and referral system, whereas increasing the scope of environmental health activities will rely more on strategies that improve the legal context and focus on education. Thus, for each priority health problem, a discussion of the applicability of the generic strategy to the problem is presented. This, in turn, defines what could be called problem-specific attack strategies.

#### **3.3.2 Model Health Programs**

Given the study's time frame and scope of work, the NMHP can only provide general orientations for strategies which are to be locally or regionally implemented. As noted, the priority health programs are different in different settings, as is the importance of the respective sets of strategies. The mix of strategies and the rhythm and sequence of implementation will also be crucial elements for the success of the Plan in each setting. The specific projects that will ultimately constitute the instruments for implementing the NMHP need to be consistent with the logic of the Plan, as well as with the specifics of the setting.

To provide an application of the process of moving from general strategies to setting-specific projects and to establish an initial list of subnational priority activities, a number of model health programs have been developed. Each of these programs focuses on a specific setting in Honduras where priorities are clear and the conditions for project development and implementation to address these health priorities are appropriate. Each model health program addresses a specific emphasis which has been identified in the NMHP as a general strategy for improving health in Honduras. The model health programs apply the principles and procedures recommended in the NMHP to produce for each of these prototypical settings a set of projects for implementation.

The model health programs included in the NMHP include:

- Urban Area Program—emphasizing municipal operations and support focusing on improved strategies for community health education and promotion
- Integrated Development Area Program—emphasizing improved planning and financing in areas of economic growth and focusing on improving the effectiveness of public health expenditures
- Poverty Areas Programs—emphasizing both rural and urban settings and focusing on strengthening community participation and leadership

Criteria for selection of the areas included, in addition to the priority of the problem, the willingness of the local/regional community to initiate actions to improve health and its experience in doing so. As a result, these model programs have been developed for the most fertile settings for the recommended actions. They are intended to serve as the initial implementing steps in the longer run process of achieving the promise of the National Master Health Plan and to provide a guide to the process as it is applied to other settings.

### **3.3.3 Priority programs/projects**

Even with the study's resources, the full-scale elaboration of three detailed model health programs would be considered a daunting task, in which all possible actors, including health care providers, service users, administrative levels should be involved on a continuous, iterative basis. The description of these model programs is thus limited in scope and depth. However, the Study Team, jointly with its counterpart, has identified within each model program, a number of critical components, projects or programs that will constitute the first



steps in the implementation of the NMHP, and for which more detailed description and analysis is provided. These priority programs and projects will be presented to the Government of Honduras, through the Coordination Committee, and to the financing agencies, to be considered for short-term funding and implementation.

It should be clear that three or four priority projects do not make a comprehensive model health program; similarly, three model health programs do not, by themselves, constitute a national master health plan. However, each level represents a cumulative step in a process of approximation to the problems to be solved. The proposed activities support the concept of decentralization and local decision-making, since the contents and characteristics of the NMHP will be adapted, over the life of the plan, to the specific needs of each context setting. They also represent concrete starting points and focus for learning in the overall process of implementation of the NMHP. It is expected that, during the Plan's elaboration and implementation, inputs from the priority projects and programs will reinforce the development of these and additional model programs, which will in turn provide useful feedback to the nationwide NMHP, thus contributing to its dynamic and reactive character. The priority projects and programs are necessary first steps to successfully improve the health status of the Honduran population as it enters the 21<sup>st</sup> century.

## **CHAPTER 4**

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### **PROBLEM DESCRIPTION**

## 4. PROBLEM DESCRIPTION

### 4.1. *Problem Identification and methodology for description*

#### 4.1.1 Selection of priority problems

During the first phase of the Study, the study team identified nine priority health problems:

- high levels of Infant Mortality Rate (IMR)
- high levels of Maternal Mortality Rate(MMR)
- high levels of malnutrition/problem of food security
- limited access to water and sanitation
- high incidence of HIV/AIDS
- high incidence of vector-borne diseases
- high levels of mortality and morbidity from accidents and violence
- increasing mortality and morbidity from chronic degenerative diseases
- limited scope of environmental and occupational health activities

These problems reflect existing and emerging situations which represent or represents the basis of health sector activities at this moment and within the Plan's time frame. The first four problems have been singled out as national and worldwide commitments, following the International Childhood Summit in 1991. Quantitative targets to be reached by the year 2000 have been stated in the National Plan for the Development of Infancy and Childhood and will be used as a basis for setting the NMHP goals and targets.

Whereas efforts to reduce maternal mortality rates have been only recently restructured and reinforced, activities aimed at improving child survival, such as timely immunization and management of diarrhea-induced dehydration have contributed to the consistent decrease in infant mortality rate obtained during the last twenty years, in spite of adverse socio-economic conditions. However, remaining causes of infant deaths such as respiratory infections and perinatal problems still constitute a serious health problem and a major cause of utilization of health services.

Malnutrition, especially among young children, remains a major underlying cause of mortality while it also contributes to the severity of health problems in mothers. Chronic malnutrition is also responsible for decreased school attendance and poor performance by

older children, as well as, decreases adult productivity. Extra sectoral as well as intersectoral activities is essential to obtain adequate production, availability and use of basic nutrients.

Although limited access to water and basic sanitation cannot be measured as a direct health status indicator, the inclusion of this problem among the country's commitment for the future and the potential impact of water/sanitation activities on health status justify their presence among the other priority health problems.

Vector-borne diseases (malaria, dengue, Chagas disease) have an important impact on the productivity of adult workers and are likely to represent a significant investment in terms of personnel, material inputs and community-based activities in the near future.

AIDS-related mortality and high prevalence of violence and accidents reflect more specifically the Honduran social and cultural context, including women's role and social conditions, pharmacodependency and fatalism; they undoubtedly will represent a heavy load on the health status of the population in the years to come.

Finally, occupational/environmental diseases and chronic degenerative diseases are two emerging areas likely to become more prominent during the NMHP's time frame as, on one side, control of infectious diseases becomes more effective and life expectancy increases and, on the other side, more attention is brought to the management of the ecosystem and to the working conditions of the economically active population.

Thus the selection of priority health problems recognizes the diversity and unevenness of the health conditions prevalent in Honduras, the need to adapt strategies to scheduled changes along the demographic and epidemiological transition patterns and the continuing progress being made by Honduran institutions and population to deal with these problems.

As a result of the field visits, interviews and workshops conducted during the first phase of the Study, the decision was made to separate accidents and violence into two different problems; the same decision was applied to environmental and occupational health (a subset of the former, concerned about the specific working environment), thus leading to eleven priority health problems which, if partially or completely solved, would have a major impact on the health status of the Honduran population.

#### **4.1.2 Sources for problem description**

Apart from empirical evidence obtained through long-term familiarity of some of the team members with the Honduran health context and from field visits conducted during the Study, information related to health status can be inferred and analyzed from three types of data sources. The respective limitations of each of these sources should be clear to the health planner.

##### ***(1) Vital statistics ("Registro civil")***

This refers especially to the register of vital events (births and deaths). Data from this source suffer from a well known under registration, estimated between 40 and 50% of the expected deaths. In addition, the cause of death is reported by lay clerks, based upon information provided by the family, which leads to a high number of non-specific causes. Births in the rural areas and in some urban areas are also under reported, as there is no real immediate incentive for reporting. Violent events (accidents, homicides) are reported to the police forces but their registration does not include age and sex characteristics of the victims.

##### ***(2) Service statistics***

Service statistics are available for most health problems from the MSP and IHSS facilities, as well as from some private hospitals. Apart from the existing problems of under registration and timeliness of data processing, one should remember that, except for a few specific diseases with a highly active surveillance system, such as poliomyelitis, measles, cholera or AIDS, these data only reflect the "satisfied" demand for health care and not the true weight of the diseases in the community. For instance, the "incidence rate" of pneumonia derived from MSP statistics should be interpreted as the number of episodes for which there was a decision to seek medical assistance and there was actual access to it, rather than as an indication of the true prevalence of the disease in the community.

##### ***(3) Specific surveys***

Among the most recent available nationwide surveys are the 1988 Household and Population Census, the 1987 Nutrition and Food Consumption Survey, the 1987 and 1991/92 National Epidemiology and Family Health Surveys and the 1990 Maternal Mortality Study. Though these surveys yield statistically significant results at national and regional level for most variables, they are limited in scope (mainly dealing with maternal

and child care, nutrition and family planning, reflecting present priorities of the government and the funding agencies). Other specific studies may be available for a given theme but they usually will be limited in geographic or health service level. Within this kind of data source should also be included the household, exit interview and facility surveys conducted during the second phase of the Study.

#### **4.1.3 Problem analysis**

Using the problem analysis methodology developed by GTZ, as a part of the Project Cycle Management (ZOPP method), two workshops were conducted in which team members and counterpart participants conducted the problem and objective analysis steps of the methodology for each of the priority problems. This analysis allowed the identification of several levels of causal factors to be addressed for each health problem, with the corresponding discrete possible objective for each factor identified. The results of this process, supplemented by the team's own findings and data from existing sources and field surveys were consolidated into a more structured analysis of the health system, along the line of the three previously defined dimensions: context, household/community behaviors and health services delivery.

### **4.2. Priority health problems**

#### **4.2.1 High levels of Infant Mortality**

Although significant progress has been registered in Honduras in the last twenty years, Infant Mortality Rate (IMR) is still high in comparison with international and regional standards. A number of nationwide surveys (1983 Demographic Survey, 1974 and 1988 Censuses, 1981, 1984, 1987 and 1991/92 National Epidemiology and Family Health Survey, ENESF) agree in estimating that the national IMR, as calculated by indirect method, has decreased from 108.7/1,000 in 1970 to 72.6 in 1980 and slightly less than 50 in 1990. Preliminary results of the 1995 ENESF indicate an indirect estimate of 44 deaths per 1,000 by the middle of 1993. Yet, the difference between urban and rural IMR has remained the same over this period, reflecting a prevailing pattern of health status determined by conditions of life.

### Infant Mortality Rate (IMR) by urban and rural areas

Year	1970	1980	1985	1990
Total	108.7	72.6	55.5	49.9
Urban	87.7	55.2	44.9	36.0
Rural	116.3	85.0	61.1	59.0

Among the conditions associated with variations in IMR are level of maternal education and access to clean water. Data from the 1988 Census also show a clear inverse relationship between the level of infant mortality and the level of satisfied basic needs by municipality.

The current levels of IMR can be attributed to three basic disease components:

- diarrhea diseases are now the third cause of infant mortality, owing the loss of the first place to the intensive cholera control activities beginning at the time of the survey and, most of all, to a decade-long effort to promote the use of ORS at institutional and community level (the percentage of under-5 children with diarrhea in the preceding three days who received ORT went up from 17.1% in 1984 to 37.4% in 1991/92),
- acute respiratory infections and, in particular, pneumonia constitute the second cause of death in infants (22 %) and the first cause of morbidity in children under-5 (as assessed by MSP service statistics and by community-level surveys: 33.3% of surveyed children had ARI in the previous 15 days, whereas only 18.6% had diarrhea in the same period). Non recognition of severe ARI by the parents and failure to take the children to a source of proper care are thought to be the major factors to be addressed.
- the complex of perinatal diseases (including prematurity, respiratory distress syndrome, infections, labor-related traumatism) is currently the first cause of infant mortality (32%) and will be the next problem to tackle, after ARI and diarrhea diseases have been partially controlled. Reduction of mortality/morbidity due to perinatal diseases implies interventions similar to those required for reduction of maternal mortality.

It should be noted that, due to high coverage levels both in infants and children under-5, immunization-preventable diseases do not constitute a major cause of infant mortality/morbidity anymore: eradication of poliomyelitis was confirmed in 1994 and measles has not been a significant problem since the 1989-90 outbreak. Yet the EPI efforts need to be maintained in order to keep this situation from reversing to the previous state.

#### 4.2.2 High levels of maternal mortality

An unrecognized problem until recently, high maternal mortality ratios were documented in Honduras in 1990 through a nationwide survey of mortality in women of child bearing age (WCBA, 12 to 50 years old). The overall MMR was 221 per 100,000 live births. This national ratio, however, covers large regional differences, the highest levels observed in the Mosquitia region (878) and in the western mountainous departments (300-500; see Figure 4-1). Given the Total Fertility Rate (TFR) in the country (5.2 according to the 1991/92 ENESF), this means that one in 65 Honduran women will die from a cause linked to the supposedly natural reproductive process.

Maternal mortality, at 21.7%, was found to be the first cause of death in WCBA. Following the guidelines from the most recent WHO classification, that is, taking out from maternal mortality the non-obstetrical causes of death, such as accidents, homicides or suicides, would result in ranking infectious diseases the first cause of death, and maternal mortality the second.

Two thirds of all deaths in WCBA and two thirds of maternal deaths occurred outside a hospital, thus indicating a serious problem of access to obstetrical care. The major causes of maternal deaths were hemorrhages (32.8%), infections (20.7%), non-obstetrical causes (17.6%), high blood pressure related problems (12.3%), other obstetrical and indirect causes (12.3%) and distocies (4.2%). Hemorrhage was by far the most frequent cause of non-hospital deaths, whereas infections and hypertensive problems dominated in hospital deaths. Abortions were found to be a causal factor in 8.7% of maternal deaths, 80% of which are likely to be related to complications of septic abortion.

Major risks factors were identified as age above 35 years old and parity over 4. Young maternal age was not found to be a contributing factor to maternal mortality, though its influence on infant mortality is well known. Low levels of maternal education, rural residence and single civil status were also recognized as risk factors for maternal deaths. Even though the hospital MMR was lower than the out-of-hospital ratio (175 and 245 respectively), it is still considered very high and reflects both the role of these institutions as referral service for complicated cases and the prevailing deficiencies in those services (for instance, 52% of women who died from hemorrhage in a hospital did not receive blood transfusion).



The persistently high fertility, especially among adolescent women, the occurrence of pregnancies in high-risk groups and the insufficient spacing of pregnancies are being addressed through education and provision of family planning services. These programs have resulted in a substantial increase in the number of users, although a much slower increase in the use of modern FP methods (from 32.9% of married women in 1987 to 34.7% in 1991/92) has been observed.

Little information is available on maternal morbidity. WHO generally estimates that there is an average of 15-16 episodes of morbidity for each death. In Honduras, pregnancy, delivery and post-partum complications represented, in 1991, 44.1% of all MSP hospital discharges. On the other hand, prenatal control represented in 1992 the major cause (17.8%) of outpatient visits in the adult population.

#### **4.2.3 High prevalence of malnutrition, absence of food security**

Malnutrition, especially among young children, remains a major underlying cause of mortality. Recent efforts, especially in the southern high-risk areas of the country, have resulted in decreasing prevalence of acute malnutrition in children under-5 from 19.2% in 1987 to 13.1% in 1991 (using minus one Standard Deviation of weight/height as a criterion). However, prevalence of chronic malnutrition remains high (39.4% of children under-5 with less than two SD height/age; 34.9% of school children between 6 and 9 years old with a height/age deficit; 20% of newborns with low birth weight). Malnutrition levels are higher in Health Regions 2, 4 and 5, especially in the Departments of Intibucá and Lempira (see Figure 4-2).

The natural history of malnutrition in Honduras is relatively well known. Growth usually follows standard patterns until the third month, when growth deficit begins to appear and keeps accumulating until the age of 23 months, when a pattern of chronic malnutrition has been definitively installed. The short duration of exclusive breastfeeding (even though the average duration of breastfeeding is around 18 months), high communicable disease load during the first year, delay in introducing appropriate weaning food in the rural area, patterns of feeding and general care of the child are thought to be responsible for this downward trend in child growth and development, which often is an underlying cause of death. Current studies are directed at investigating and identifying the various causes

leading to the initial growth deficit, rather than waiting till the child is declared malnourished and registered into a supplementary feeding program.

Protein-energy malnutrition is not limited to children: the 1987 National Food Consumption Survey showed that 63% of the families consumed less than the daily caloric requirements, with 5% consuming less than half of these requirements, and that 50% of the families did not cover their protein requirements. According to the latest statistics on food supply published by FAO in 1994, the average caloric uptake is 2,305 Kcal/day/capita of which the vegetable portion is 88%. Average protein uptake is 54.4 grams/day/capita of which 72% is provided by vegetables. Both calories and protein uptake are low compared to the world standards of 2,718 Kcal and 70.8 grams of proteins. The traditional diet is mainly comprised of corn and beans which accounts for its poor nutritional value. The patterns of food consumption are illustrated in Table 4-1, showing the per capita consumption of several food items by health region.

The protein-calorie deficit is associated with deficits in specific micronutrients: anemia is widespread among children and pregnant/lactating women, owing both to an important parasite load and to deficient consumption, as assessed by the same survey. Low levels of Vitamin A have also been detected in the same population groups, leading to the implementation of supplementation and fortification programs. Lack of retinol has been associated with high levels of infant and child mortality. Iodine deficit is a local problem being addressed through salt fortification in the mountainous regions of central and western Honduras.

The nutrition survey also indicates the close relationship between the low level of calorie intake and poor housing conditions, as well as low level of education of family heads. The malnutrition problem is considered by the health authorities within the more general context of food security in order to emphasize its wide range of contributing factors, covering production, acquisition, consumption and utilization of nutrients. Among these factors, most of which are studied in the following sections, are the problems of land tenure, low productivity and lack of access to technology and financial inputs for small subsistence farmers, production shift away from production of basic grains towards cash producing crops, subsequent need for import of significant amounts of these basic staple foods, high cost of basic food basket for marginal urban dwellers, inappropriate patterns of child feeding and care, and others.

#### 4.2.4 Limited access to water and basic sanitation

Water is preventive medicine; access to clean water and adequate disposal of human waste lead to a decrease in the incidence of diarrhea diseases, skin infections and other water-borne diseases such as hepatitis and typhoid fever. All Latin American countries were reminded of this by the 1991 outbreak of cholera which, in Honduras, reached a total of 9,486 cases and 224 deaths by the end of 1994. The intensive education campaign and the acceleration of infrastructure building that took place at that time were shown to be associated with an overall decrease in the incidence of diarrhea diseases in children under-5.

Despite this relative success in controlling the spread of the cholera outbreak, access to water and human waste disposal remains problematic in Honduras, especially in small, dispersed rural villages and hamlets, with limited natural source of water. Huge efforts will have to be made in order to reach the 100% coverage objectives stipulated by the Regional Presidents' Conference. Those two indicators have been included in the analysis of unsatisfied basic needs conducted at municipal levels and now being extended to villages and communities.

According to the 1991/92 ENESF, 82% of urban households and 40% of rural households have piped water inside the house and 89% and 51% respectively have access to a water source located less than 100m from the house (including the above category). These figures have increased only slightly in the last few years, following an increase in water and sanitation activities linked with the Infancy and Childhood Development Plan mentioned above.

Households with piped water within 100m by city scale

	<i>Large cities</i>	<i>Small cities</i>	<i>Rural</i>
1995 ENESF	91%	94%	56%
1995 MHP Household Survey	95%	88%	72%

The urban water coverage since the 1974 census (90%) has not changed much for large cities. Substantial efforts and finance will therefore be required if further increases in the coverage rates are to be achieved as increase in urban population may outpace increase coverage.

A number of residents in marginal areas of Tegucigalpa have to buy water from trucks. Chlorination of water has been strengthened since the beginning of the cholera outbreak; however, the maintenance of effective levels of chlorine is made difficult by downstream contamination, either from sewage, industrial contamination or from leaks in old and deficient pipe systems in the urban area. Household level chlorination is practiced in 20 to 22% of the households, while boiling drinking water is the preferred option in 37% of the households in large cities, 28% in small cities and 27% in rural areas (MHP Household Survey).

The availability of washable or hydraulic latrines was 50-67% in urban and 6% in rural areas, whereas the figures for simple latrines were 29-34% and 26% respectively in 1991/92. These figures have risen in the last few years, according to the MHP Household Survey.

**Households with latrines by city scale**

		<i>Large cities</i>	<i>Small cities</i>	<i>Rural</i>
ENESF	Hydraulic/washable latrine	87%	53%	21%
	Simple latrine	20%	26%	30%
MHP Household Survey	Hydraulic/washable latrine	87%	53%	21%
	Simple latrine	11%	40%	44%

note: in both tables, differences in the sampling mechanisms and definition of attributes could explain the differences observed in the values. However, both surveys indicate the need for a significant increase in the water and sanitation activities in rural areas if the targets set up by the National Plan for the Development of Infancy and Childhood is to be reached (see Chapter 5).

The large majority of wastewater and sewage flows directly back into the river, for the lack of treatment plants. Garbage disposal is organized in the main cities and garbage is used as landfill. Elimination of hospital biological waste by burning is not yet universal, as not all hospitals have incinerators.

The evaluation of the cholera control campaign of the last few years has confirmed the need for a strong motivation/education component in order to make effective and sustainable the access to adequate infrastructure. Another important element, especially in small villages and population is the role of community water boards ("juntas de agua"), where the greater efficiency of women has been recognized.

It should be emphasized that the water and sanitation problem are now being perceived by the concerned institutions (SANAA, RRNN, SEDA) as an integral part of the overall environmental control problem, where the main efforts tend to prevent air, water and soil contamination and to preserve the ecosystem. Indeed, the reduction in forested areas through agriculture, husbandry, logging and fires, and the regulation of industrial activities both have significant implications for the availability of water sources and the cost-effectiveness of building and maintaining water systems.

Another important aspect of water management is its role in the natural history and control of vector-borne diseases: inappropriate waste water disposal in urban households favors development of breeding sites for dengue vectors, whereas flooding, especially in the northern part of the country, and badly designed water supply projects contribute to the persistence of endemic malaria.

#### **4.2.5 High incidence of AIDS and sexually transmitted diseases**

In Honduras, the HIV/AIDS epidemic is more advanced than in all the other countries of Central America. With only 17 percent of the population of the subregion, Honduras has 57% of the reported AIDS cases (4,142 cases reported since 1985). There were 974 reported cases of AIDS in 1993 and 842 in 1994. San Pedro Sula has the highest rate of infection in the country, followed by Tegucigalpa, and the La Ceiba and Comayagua regions (see Figure 4.3). For the year 2000, between 10 and 17 percent of the population of San Pedro Sula is expected to be infected with the virus, while a minimum of 3,200 new AIDS cases are expected annually by the end of the century. A survey of HIV prevalence among pregnant women in a marginal but not specially at-risk area in San Pedro Sula showed 3.6% of seropositives. Already in the two hospitals in the city, AIDS is the first or second cause of mortality. For Health Region 3 as a whole, AIDS was the fourth leading cause of hospital deaths. Tegucigalpa is a few years behind San Pedro Sula in the spread of the epidemic. The major pattern of transmission is through heterosexual contact (75%), which explains the increasing percentage of female cases and the more recent appearance of a growing number of pediatric cases.

In 1985, Honduras established a National AIDS Committee (NAC) with responsibility for developing an HIV/AIDS prevention program. The Ministry of Public Health AIDS Program took over the policy setting functions of the NAC in 1993. There was a short-lived

(6 months) commission (CONALSIDA) chaired by the first lady, that briefly provided political support. Also established is a technical committee of the UN and donor agencies for coordination and planning and a network of 35 NGOs operating throughout the country. These are the coordinating and policy setting institutions in AIDS in Honduras.

The national program is only beginning to include adequate attention to all three components of a comprehensive program for prevention of sexual transmission of HIV. Both the public and private sectors have implemented educational programs; however, the public sector in-school program is in a development stage and the MSP expressed that it is not ready to release the curriculum for technical review. A number of NGOs have begun to undertake targeted comprehensive prevention programs aimed at the highest risk populations: commercial sex workers, men who have sex with men (MWM), the Garifuna population (on the North Coast), and workers whose occupations take them away from their families. The public sector has been providing prevention education for the general population and adolescents; it is currently beginning a program to upgrade its STD diagnosis and treatment services. USAID has provided a large supply of condoms for both the public and private sectors through the public sector logistics systems. The majority of these efforts are aimed at the four regions mentioned above that have the highest rates of infection.

PAHO has assisted in the creation and operations of the National AIDS Commission and the logistics for a safe blood supply. More recently, it has provided small amounts of funds for educational activities and training. World Bank and the UN have assisted a variety of small educational and training activities. In 1995, USAID (through the AIDSCAP project) provided a major amount of funding and technical assistance for both public and private sector activities, and this support is scheduled to continue until August of 1997. At that time the AIDSCAP project ends and a new USAID initiative is expected. Honduras is known to be on the USAID list of priority countries for the next initiative.

Currently the program financed by AIDSCAP includes support for an MWM project in SPS, which is administered by COMVIDA, the program of the Municipality of SPS; upgrading of the STD clinic and laboratory in the CESAMO Miguel Paz Barahona in SPS to improve diagnosis and treatment of STDs and serve as a training site for physicians throughout Region 3; support for IHSS and COMVIDA activities in assembly factories (maquilas) in SPS; support for two projects with Garifuna cultural groups and an NGO project for

commercial sex workers in Health Region 6; an STD training and reference center in each of the other 3 Regions (4, 6, and Metropolitan in addition to M.P. Barahona in SPS); and one project each in Tegucigalpa and Comayagua for commercial sex workers. In SPS, the NGO Fraternidad has a hot line, 3-4 bed hospice for AIDS patients in terminal stages, and has recently received AIDSCAP funding to expand its work with commercial sex workers. Support for expanded Communications activities will be provided to the central level Department of Education in the MSP after analysis of the behavioral data collected in recent surveys.

A notable lack in the AIDSCAP-funded program is support for activities with adolescents. However, the MSP and the SEP have been active in this area and have designed a curriculum for a national program that is still in development. COMVIDA has also been actively working with adolescents with support from the SPS municipality. Given that nearly half the current population will enter their sexually active years during the period of this Plan, greater attention to adolescents is needed. The program also lacks any plans for increasing the supply of STD medications, although technical assistance to improve STD drug logistics is envisioned through AIDSCAP.

Honduras has already begun to experience a need for hospice care for AIDS patients in terminal stages, many of whom are rejected by their families and put on the streets. Fraternidad and several churches are answering the need on a small level. As more and more AIDS cases and deaths are inevitable, the need for hospices, home care, and education to diminish rejection of AIDS sufferers will increase. If less expensive ways to care for these patients are not found, the potential cost to the public health care system could be catastrophic. In 1993 the estimated cost to care for AIDS patients was Lps. 6 million in SPS and Lps. 2 million in Tegucigalpa. These costs are projected to rise to 21-29 million in SPS and 12-32 million in Tegucigalpa by the end of the century. These cost projections assume that only the current level of palliative treatment is maintained since drugs, such as AZT, are too expensive to provide through the public health system.

#### **4.2.6 High incidence of vector-borne diseases**

Vector-borne diseases still represent an ongoing problem for the population of Honduras, especially as it mostly affects the economically active population and the productive

capacity of the country. Table 4-2 and Figure 4-4 show the relative importance of the three main diseases by health region for 1995.

### *(1) Malaria*

Traditionally prevalent in the northern coast and the southern department of Choluteca, malaria is now more frequently reported in the eastern part of the Atlantic coast, the Mosquitia area and the neighboring areas of Olancho, the latter two representing 29.1% of the cases. As most of the cases are due to *P. vivax* (98%), with little incidence of *P. falciparum* episodes, the burden of malaria is mainly one of frequent morbidity and temporary disability in the economically active population, especially those seasonally employed in banana, rice or sugar cane fields. In addition to the natural conditions, the epidemiological profile for malaria has been determined in the recent years by the fluctuating patterns of control program organization (i.e., vertical vs. horizontal/decentralized), with a yearly parasitic incidence oscillating between 5 and 18 cases per 1,000 persons.

### *(2) Dengue*

During the past few years, outbreaks of common dengue (serotypes I, II and IV) have been registered in the main cities of Tegucigalpa, Danlí, Comayagua, La Ceiba and Puerto Cortés. Two cases of hemorrhagic dengue were reported in 1993.

In 1995, 18,152 clinical cases were reported to the MSP and 2,601 cases were confirmed by serologic examination (that is 38.6% of the reviewed samples), with a peak outbreak from July to November. The most common virus type in 1995 was the type 3 virus, reported in all regions. During the year, thirty patients were hospitalized with laboratory-confirmed cases of hemorrhagic dengue (23 of them in the Metropolitan region), four of which died. However, as is the case for malaria, dengue is mainly a morbidity problem affecting the economically active population.

### *(3) Chagas disease and leishmaniasis*

Studies conducted in 1991 in different endemic areas yielded a positive serology in about half of patient with clinically compatible cardiopathy, whereas serologic control of blood donors in 1995 revealed prevalence of 1.9% for MSP, 1.2% for the Honduran Red Cross



and the IHSS. Seropositivity was highest in regions 7, 5 and 3. The rate of seropositivity has been maintained constant between 1.35 and 1.6% since 1992.

Cases of cutaneous leishmaniasis have been reported in San Pedro Sula and in rural dispersed areas (Regions 7 and 6).

#### 4.2.7 High mortality and morbidity from accidents

Though actually a combination of different problems, deaths, disability and injuries from external causes represent a growing problem in Honduras, affecting the most productive age groups of the population. The civil death register shows that external causes are the first cause of death (28% in 1990) among the male population, although more than one third of the deaths were linked to homicides (though there may be a bias towards a more complete reporting of this kind of death, which often comes to the direct knowledge of police and civil authorities). Accidents, homicides and suicides were the third cause of death among women of reproductive age, according the maternal mortality survey. If the death and disability toll related to road accidents is relatively well known, the importance of home accidents (burns, intoxications, falls) warrants further investigations.

The household survey showed that during the previous year, at least one person died from external cause (accidents or violence) in 0.31%, 0.97% and 1.27% of the households in the large city, small city and rural stratum respectively. Using a crude mortality rate figure of 7 per 1,000 persons per year, the proportion of death attributed to external causes would be:

**External caused death in total mortality by city scale**

<i>1995 Household Survey</i>	<i>Large cities</i>	<i>Small cities</i>	<i>Rural</i>
% mortality ext. cause/tot. mort.	9%	26%	33%

Among the factors implicated in the increase in traffic accidents, in particular during vacation times, are the lack of road signs, especially for night time driving; the low level of maintenance of heavy vehicles (trucks and buses); the lack of respect for driving rules and enforcement of traffic regulations; the lack of traffic-related education of both drivers and pedestrians; a certain culture of fatalism, linked to the "machismo" concept; and above all, the high level of alcoholism, which has been shown to be implicated in 80% of road accidents.

#### **4.2.8 High mortality and morbidity from violence**

Although there are no national data related to intra family violence, usually directed to women and children, several recent studies have investigated the extent, characteristics and causes of these phenomena, deeply rooted in cultural patterns ("machismo", lack of conflict-solving education, alcoholism). On the other hand, the recent increase in violence linked to common delinquency is accentuated by the easy availability of all sorts of weapons, including heavy automatic guns, and by increasingly visible socio-economic differences (that is, an ever-increasing gap between rich and poor).

A specific aspect of violence (by neglect) is that of the children of the street (with often coexists with sexual violence, prostitution, drug addiction, etc...). Little institutional answer is available, except from the NGO sector.

The study's household survey showed that, during the previous year, at least one person at least was a victim of a violent act in 0.6, 0.3 and 0.13% of the households in the three strata respectively. Battering is the main form of physical violence in all three strata (32, 50 and 33%) whereas sexual violence is only reported in urban strata (27 and 20%). One third of violent acts are perpetrated by persons unknown to the victim, but 27% of assaulters in the large cities and 33% in the rural area are household relatives.

#### **4.2.9 Increasing mortality/morbidity from chronic degenerative diseases**

The burden of malignant diseases and chronic cardio-vascular and endocrine ailments on the health system is likely to increase in Honduras in the next few years, as a better control of infectious diseases and maternal mortality allows for a longer life expectancy (the current levels were estimated at 67 years by the 1988 Census). Deaths from cardiovascular diseases and diabetes mellitus represented 12% and 2% respectively of all hospital deaths in 1993.

The household survey showed that, during the previous year, at least one person died from chronic-degenerative disease (cardiovascular problem, kidney disease, diabetes, cancer) in 1.39, 1.80 and 1.16 of the households in the large city, small city and rural stratum respectively. Using the same crude mortality rate figure of 7 per 1,000 persons per year, the proportion of death attributed to this group of diseases causes would be:

**Chronic degenerative diseases in total mortality by city scale**

<i>1995 Household Survey</i>	<i>Large cities</i>	<i>Small cities</i>	<i>Rural</i>
% mort. chron.deg.dis./tot. mort.	40%	49%	30%

The same survey showed that 3.7%, 2.4% and 1.2% of the persons in the large city, small city and rural sample were taking for more than three months one or several drugs aimed at correcting problems linked to chronic-degenerative diseases of some kind (hypotensors, diuretics, cardiotonics, oral anti-diabetics, insulin), giving an idea of the prevalence of reported morbidity in this category. High blood pressure and diabetes mellitus were responsible in 1993 for 3% and 1% of all MSP hospital discharges respectively.

Of concern as emerging causal factors of mortality and morbidity are the changes in social and cultural habits occurring in the Honduran urban population: sedentary behavior and increased consumption of fat in the upper/middle class, high prevalence of alcoholism and tobacco addiction (different studies conducted between 1986 and 1989 show prevalence of 29 to 77% in men and 1 to 23% in women).

The household survey provides the following results with regards to smoking and alcohol ingestion in the Honduran population over 10 years of age:

**Smoking and alcohol ingestion in population over 10 years of age**

<i>1995 Household Survey</i>	<i>Large cities</i>	<i>Small cities</i>	<i>Rural</i>
Smoke >5 cig./day	4.8%	4.3%	3.5%
Smoke < 5 cig./day	8.2%	5.8%	5.3%
Drinks daily	0.6%	0.9%	0.4%
Drinks occasionally	12.0%	8.1%	7.3%

Data on malignant degenerative diseases are scarce as there is only one cancer register in the country. Malignant tumors were found to be the fourth cause of death among WCBA, with uterine cervix cancer responsible for 5% of total deaths in WCBA.

The increased interest manifested in this category of diseases stems from the felt need to act now on prevention, rather than 15 years from now, when the control and treatment costs will be unaffordable for the country. Yet the promotion of health as a positive social value, the