Department of Olancho and includes the mid-size urban areas of Juticalpa and Catacamas reflects this expectation.

Of equal importance is the fact that this region already incorporates many of the institutional characteristics essential for implementation of the health financing reforms proposed in the NMHP. In particular, the central public hospital, Hospital San Francisco, is relatively new and well maintained. It is the major provider of inpatient services and provides significant ambulatory services, as well. IHSS coverage is growing and the Juticalpa IHSS region is already operating under its service extension model which provides more extensive primary care services to the insured and the partner and dependent children. IHSS is not a direct service provider and beneficiaries obtain services from the Hospital San Francisco for a fixed capitation payment paid to the hospital based on a share of the IHSS income from covered employees. Outside of the Tegucigalpa and San Pedro Sula areas, this will be the future form of IHSS expansion with its role being that of insurer rather than service provider.

7.3.2 Characteristics of Health region 7

(1) General Characteristics

Geographical coverage of the Health Region 7 (pop.: 356,479) is almost equal to the Department of Olancho (pop.: 360,980), except for the Municipality of Esquipulas del Norte (pop.: 4,511) (refer to Table 7-3-1, Figure 7-3-1). Significant potential of agricultural production (refer to Table 4-4 "Agricultural Production 1974-1993") and convenient distance to the Capital, Tegucigalpa, has motivated its rapid development .

Urban population concentrates in two major cities, i.e. Juticalpa (pop.: 91,126) and Catacamas (pop.: 70,963), on the trunk road from Tegucigalpa, and agricultural development mainly extends in Guayape valley, in which the trunk road lies. Besides this ribbon development, a high agricultural potential is expected in the North-east. However, the mountainous areas of the North-west and the South-east have been left behind. A variety of community settings could be identified in this given setting, from a tiny poor village in rural area to a medium size city in urban area (as of population in 1995).

Selected Socio-Demographic Indicators

	Olancho	*Honduras*
Population (1988)	282,018	4,443,721
Population Density (1988) (per/sq. km.)	12	37.9
Number of Municipality	22	289
% Viviendas (3 o mas carencias) (1985)	16.6	14
% of Population Rural (1980)	75	57
(25 years of age and over) Analfabetismo	40.6	32

(2) Health Service Delivery System

1) Regional Health Office (Health Region 7)

The Health Region 7 covers 356,000 population in 24,000 km^2 of the entire Olancho department except one Municipality, Esquipulas del norte (pop. 4,500), because of easier access to the municipality from Health Region 6. To be a Head of Regional Health Office, MD, MPH required. He/she will be selected among applicants through "concurso". The office of Health Region 7 located in Juticalpa, close to the Hospital Regional San Francisco. Personnel working in the office includes;

Director Regional	Psicologa Regional
Enfermera Regional	Odontologo Regional
Coord. Pacto por la Infancia	Coordinadora Nutrición
Técnica Materno Infantil	Coord. Control de Alimentos
Ingeniera II	Coord. Depto. Planificación
Epidemiologa Regional	Oficial Administración
Asistente Epidemiologia	Oficial de Personal
Microbiologa Regional	

Regional Board of Health Council will be assembled in case of particular issue to be discuss, such as Dengue epidemic, appears.

2) Current Programs

The Health Region 7 operates several programs such as i) reproductive health, ii) growth and development, iii) environmental sanitation, iv) disease and vector control and v) development of human resources with the total amount of Lps. 6,565,623 (1995). This financial resource from the central budget is programmed as Program 1-01 (environmental

sanitation - basic sanitation, food and vector control) and 1-02 (communicable disease control and ambulatory consultation) in national budgetary system in health sector. Therefore, it is not clearly describable that how much portion in total is actually spent for each regional program.

The evaluation report of this Region in 1996 provides the following figures for its performance as the result of the above programs in 1995.

- prenatal care for 69.4% of total pregnancies
- institutional delivery for 27.1% of total delivery
- CPR for 5.9% of married women
- 77% of under 5 years old children monitored
- 3,762 cases reported for pneumonia
- 6,818 cases reported for streptococcal pharyngitis
- 32,071 cases reported common cold
- 116 registered patients for tuberculosis

3) Area Public Health Office

There are four health areas operating in the Health Region 7. Each area has an office with a manager, a nursing supervisor and an administrator. Addition to that, some area offices have a sanitary inspector, a vector control supervisor, a statistician, a laboratory technician, a nutrition or a health promoter accordingly. Those offices are located in Juticalpa (#1), Catacamas (#2), Salama (#3) and San Francisco de Lapaz (#4). To become a Head of Area Health Office, MD required while MPH is preferable. At least in every 3 years, selection through "concurso" (contest) should been made. In practice, Regional director has the largest influence at the selection. Community or health committee has nothing involved with this selection procedure (refer to Table 7-3-2).

Immediately below the area level, between each U.P.S. and health region, an intermediate administrative level called "sector" exist. Sectors rarely have a staff of their own except a couple of sectors which have been contracted out with NGOs for the entire primary health service delivery; sector 4 in area 1 by PREDISAN, sector 4 in area 4 by OUTREACH. The scale and function of the sector varies widely (refer to Table 7-3-3).

4) Performance of CESAR/CESAMO

As a very front line of the public health service delivery, 96 of CESARes and CESAMOs are located in the region. This service delivery network, in terms of facilities as well as human resources, is an essential infrastructure through which various health service activities are carried on. It is also a crucial factor to determine cost-effectiveness and efficiency of the health program intervention.

To conduct some comparative assessment of performance among the UPSes in the region, assumption have been made that one medical doctor, nurse and auxiliary nurse are to treat 32, 5 and 8 patients a day, respectively, as his or her maximum attention capability. Then actual number of first attention in 1995, indicated as percentage of the assumed maximum capacity of each UPS, has been shown on Figure 7-3-2 (refer to Table 7-3-4).

Although some of the staffing data are not available, those which include several CESARes contracted out to the NGOs, PREDISAN and OUTREACH, general overview implies relative low performance in the area 3, geographically mountainous and hard access area, compare to the rest.

5) Health Committee

In theory, each U.P.S. is to have its own health committee organized by the representatives in the service area. The function of the committee is;

1. to decide upon user's charges
2. to judge fee exemption for poverty conditions

In order to facilitate the committee, regular training program has been provided for the committee members.

Members of health committee are elected from people living in the service area. Election procedure varies one by one.

(3) Financing

Financing for the health region comes primarily from the MSP budget. In 1995, total MSP budget for operations, including both the Hospital San Francisco and the Health Region 7, was Lps. 14,327,855 of which Lps. 7,272,559 was for personnel (refer to Table 7-3-5). This amounted to Lps. 40.25 per person in the region for the entire range of public health services

including disease control, health education, and regulation and inspection activities. Of this amount, Lps. 7,762,232 was for the hospital and Lps. 6,565,623 was for regional operations.

Sources of Funds for health services in region 7 in 1995 (Lps)

Source	*Hospital San Francisco*	*Health Region 7*
Total central funds	7,762,232	6,565,623
Personnel	4,046,669	3,225,890
Other	3,715,563	3,339,733
Cost-recovery Revenues	536,316	88,686
IHSS Capitation	580,507	
TOTAL	8,879,055	6,654,309

In addition to MSP budgeted funds, both the hospital and the region generated revenues from their service delivery activities. For the hospital, cost-recovery revenues amounted to almost 7% of the MSP provided funds. For the region, revenues generated from fees paid for curative care amounted to less than 1.4% of the MSP funds.

Under an agreement with the IHSS, the hospital also receives funds to support the provision of primary and secondary care to insured members, partners, and their dependents up to the age of 10 years. The amount of the payment specified in the agreement is equal to 54.21% of the total revenues collected by IHSS-Juticalpa for the maternity-illness program coverage with premiums based on a maximum salary level of Lps. 2,000. The rest of the premium is retained by IHSS for administrative expenses and the provision of required tertiary care by IHSS facilities in Tegucigalpa or San Pedro Sula. In 1995, capitation payments from IHSS on behalf of 2,076 insured employees amounted to Lps. 580,507 and covered services to a total of 7,260 beneficiaries for an average of approximately Lps. 80 per beneficiary.

For the hospital, almost 15% of its revenues came from user payments, either directly as user fees or indirectly through insurance. Significant potential exists for increasing these revenue sources, both within Olancho and, more generally, in many other regions in Honduras. For the region, fewer option exist for generating extra-budgetary revenues outside of the 10% share of hospital fees allocated to the region. However, increasing hospital revenues from curative care would permit a higher priority for public funds to be given to promotion and prevention activities, a goal of health financing reforms in most settings.

7.3.3 Major Health Problems and Strategies to Improve

A central theme in the NMHP is the need to set priorities for health improving interventions considering the specific unique characteristics of the setting. In the many workshops held as part of the study, the importance of this focus was demonstrated. The process of identifying priorities can be subjective, as in the ZOPP exercises, where the process draws on the cumulated experience of the participants to identify both problems and potential strategies for their alleviation. While important, organized planning requires, as well, the collection and monitoring of more objective measures as a guide to regional or area priorities. One of the objectives of planning is to focus the use of resources on those activities which have the greatest potential for improving health. Identifying and prioritizing such options involves two dimensions; the importance of the problem being addressed and the effectiveness of the options that exist for addressing the problem. The study team has explored some of these issues in Health Region 7 as part of a process of improving the planning process.

(1) Estimating the Burden of Disease

The burden of disease has been defined as the loss to society of productive years due to premature death and disability. This is a relatively recent focus. Much of the emphasis has typically been on the incidence of mortality without adjusting for the point in life when the mortality occurred. Recently, efforts have been made to improve the estimates by considering more directly the social and economic losses associated with the distribution of mortality and, when appropriate, morbidity in the life cycle of the affected populations. Ideally, priority setting would reflect both of these dimensions and public resources would be used in a way that produces the biggest improvement in terms of reduction in mortality and morbidity.

One measure which incorporates both mortality and morbidity has been developed. Although the data necessary to apply the morbidity aspects of this measure are not yet available for Heath Region 7, the development and application of this measure would be incorporated as an objective for the Region over the life of the MHP.

The measure, Disability-Adjusted Life Years lost (DALYs), has been developed to measure the impact of premature mortality and morbidity caused by different health problems in a particular setting. The use of DALYs was proposed in the World Development Report 1993, "Investing in Health", as a means to capture the total burden of disease from both

premature death and disability. DALY counts lost years of life of population due to premature death and disability, instead of the traditional way which counts only the frequency of deaths or disease. While death is inevitable, it is hoped that death would occur late in life and be accompanied by a minimum of disability. Reducing the mortality that occurs before reaching biological limit should be the target of public health efforts. Likewise, living with disability decreases the quality of life. It also should be counted, by consideration of the severity or loss of welfare, and targeted in the public health agenda.

It is important to note that by using DALY as an indicator of health status, both premature death and disability would be measured in a single indicator in combined form. As a result, it can be used to support explicit decision making in:

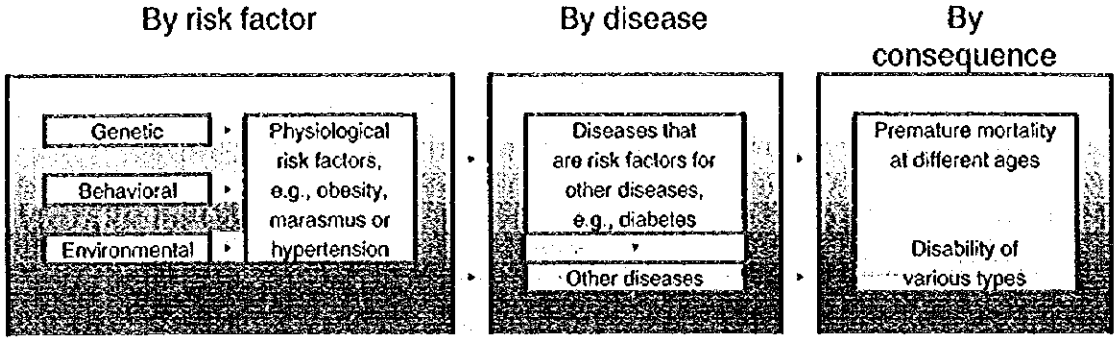
- setting priorities among a variety of health services;
- setting priorities for health research;
- identifying disadvantaged groups and targeting health interventions; and
- evaluation and monitoring of activities.

DALY can also contribute to improve coordination among institutions or agencies involved in the health sector. The DALY measure allows the user to specify, in addition to objective values, the weights to be assigned to the following additional dimensions:

- the duration of time lost due to premature death
- social value of the time lived at different ages
- non-fatal health outcomes
- time preference

The basic idea of indicating health status by a single indicator like the DALY is not new in public health. However, the DALY incorporates two additional important perspectives for those working in the health sector. One is time preference and the other is age weighting. The first recognizes that future losses may have less value at the present than do present losses. The second allows us to adjust the value of a year to the age of the individual, allowing us to recognize the higher economic loss associated with the mortality of an adult with dependents as compared to that of a young child. These elements will incorporate into the analysis what can be called, "The development economist's view".

The assessment of disease burden by using DALY represents one major step towards a larger context of burden of disease schematically illustrated below.



Three categories of the burden of disease

The burden of disease can be grouped in three separate ways for different age and sex. One group is by risk factor; genetic, behavioral, environmental and physiological. The second is by disease. The third is by consequence; premature mortality at different ages and different types of disability. The analysis for calculation of DALY deal principally with the second group, by disease. Consequences are aggregated into premature mortality and disability. The importance of these additions will vary in accordance with the programmatic interest. For example, a fuller assessment of burden by consequence would provide highly relevant information to guide rehabilitation programs. Likewise a decomposition of burden by risk factor would better guide primary prevention. This assessment of burden, by disease, is a precursor to the other groups while also providing a broad sense of disease burden to guide intervention.

(2) Application to Health Region 7

To assess the utility of using burden of disease as a criterion of setting health priorities, estimates were prepared for Health Region 7. Since disability data were not available, an intermediate measure, Years of Life Lost (YLL), was used to indicate disease burden of the population in the form of premature death. Mortality was calculated by cause for each sex and for five age groups. The causes were grouped into three major categories which encompass the major different health interventions of interest; i) communicable, maternal & perinatal causes. ii) non-communicable diseases, and iii) injuries. Corresponding International Classification of Disease version 9 (ICD 9) codes are as follows;

Communicable, Maternal & Perinatal

320-322, 460-465, 466, 480-487, 614-616, 630-676, 760-779)

Non-communicable

680-759) minus (320-322, 460-465, 466, 480-487, 614-616)

Injuries

(E800-999)

Data were obtained from a number of sources within the Health Region including:

- Mortality data, with cause of death identified according ICD 9, compiled by Health Region 7. It identifies roughly one thousand deaths in each year from 1993 to 1995, an amount only a half of total deaths estimated by SECPLAN for population projection. Data for 94 and 95 provide information by sex.
- vital statistics (civil registration); these data do not register the cause of death
- police investigation records; these data relate to accidents an violence. Estimates from this source were lower than those from the regional health data set.

Regional data were supplemented from other sources including:

- "WHO annual report of mortality"
- "Health condition of America"
- "Global Comparative Assessments in the Health Sector", which estimated deaths by age, sex and cause in 1990 for Latin America and the Caribbean

Additionally, the SECPLAN projection has been used to estimate population for the year 1995 with minor adjustment due to geographical mismatch between Olancho and Health Region 7.

1) Estimation Method Used For Death Structure

Since all available data sets had some incompleteness the estimation process started by applying age and sex specific mortality rates at department level in 1995 to the population in the health region.

Total Death = [population in Health Region 7] × [age, sex specific mortality rate]

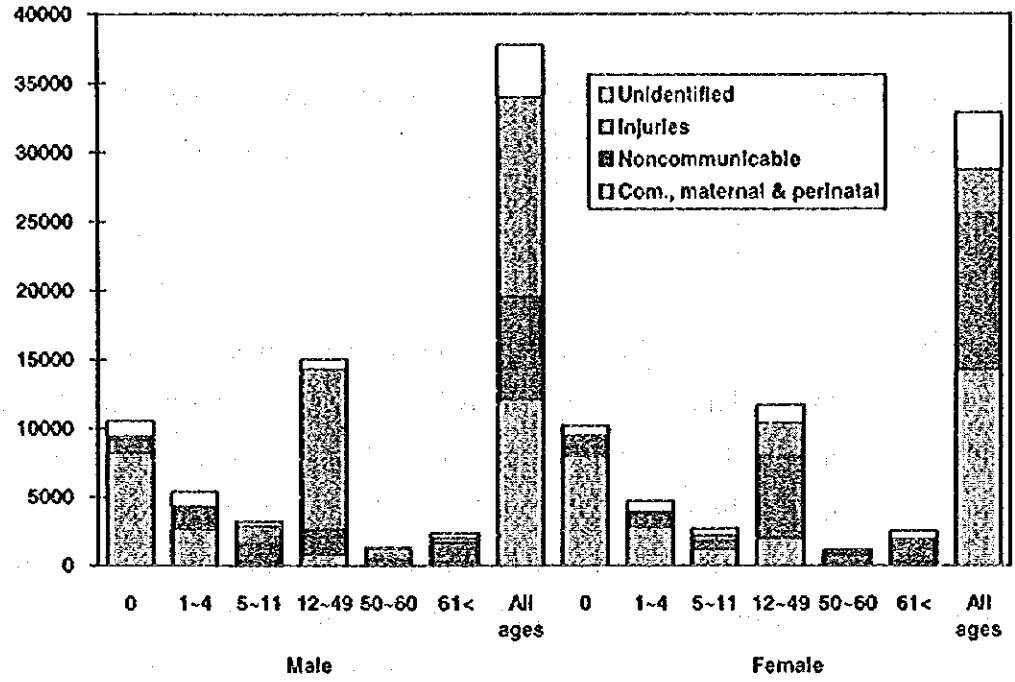
Data sources are, SECPLAN Population Projection 1988 - 1995.

Estimation has been done by assuming existing mortality data is a non-biased sample from the real mortality, thus extending the structure of mortality until it reaches to the estimated total death.

It is worth noting that there is significant under reporting of incidence of death for both sexes between 5 and 11 years and for females 12 to 49 female, particularly at the regional level.

2) Result

Preliminary result of burden of disease by age, sex and broad cause group measured by YLL are illustrated in the following Figure and Tables. By broad cause group, categorized into communicable, non-communicable and injury, communicable and maternal and perinatal causes are still the largest contributor to the whole population. Two thirds of these occurred during infancy for both sexes. An astonishingly high share of burden caused by injuries is found, particularly for males between 12 to 49 years of age. It is expected to be even more significant when YLD is ready to combine with YLL, since injuries have already been identified as the major source of disability in Latin America and Caribbean region, according to the Global Burden of Disease assessment.



Burden of disease in Health Region 7 by sex, age and cause group, 1995

YLL for male by age and broad cause group, 1995

CAUSE	*both sexes*	*0*	*1~4*	*5~11*	*12~49*	*50~60*	*61<*	*All ages Male*
Com., maternal & perinatal	**26,419**	8,251	2,688	168	828	37	169	12,140
Non-communicable	**18,700**	1,002	1,344	1,341	1,830	407	1,487	7,411
Injuries	**17,669**	154	244	1,341	11,632	776	322	14,470
Unidentified	**7,863**	1,157	1,100	335	741	74	353	3,759
Total	**70,651**	10,564	5,376	3,185	15,030	1,294	2,330	37,779

YLL for female by age and broad cause group, 1995

CAUSE	*0*	*1~4*	*5~11*	*12~49*	*50~60*	*61<*	*All ages Female*
Com., maternal & perinatal	8,015	2,797	1,150	2,016	88	214	14,279
Non-communicable	1,439	895	639	5,949	679	1,690	11,290
Injuries	0	224	383	2,420	153	19	3,200
Unidentified	719	783	511	1,311	197	583	4,104
Total	10,173	4,698	2,683	11,696	1,117	2,505	32,872

Using mortality as a measure of the burden of disease, therefore, program priorities for the region would be targeted at communicable disease, maternal & perinatal causes with special emphasis on reducing infant mortality, and injury of working age males, followed by non-communicable disease mainly for reproductive age of women.

3) Research Needs

There is significant under-reporting of incidence of death, particularly for females and for children of both sexes. While data on deaths by cause are required for objective planning and evaluation of the health sector, the available data sets are wholly inadequate. Additionally, as discussed above, improved data on morbidity and disability would improve the health planning process. Each of these issues needs to be addressed within the region and, eventually, for Honduras as a whole.

As a first step, a community based mortality survey would provide a benchmark for assessing the direction and magnitude of reporting errors in currently available information.

Available mortality data shows large differences between male and female reported mortality. For the age group 12 to 49, reported male mortality is almost 2 ½ times that of females. This implies considerable under-reporting for women which may reflect mortality causes which are difficult to record, such as unsafe pregnancy or abortions.

(3) Strategies for improvement

1) Specific activity priorities

The results of the analysis of mortality in Health Region 7 indicates that a few key problems account for the majority of premature loss of life. Making the biggest improvement in the incidence of mortality will require selecting the activities with the greatest cost-effectiveness for each different cause. The Global Burden of Disease study noted earlier has analyzed the major types of interventions in terms of their potential to reduce mortality from specific conditions. These data have been assembled here and related to the specific causes of mortality identified in the earlier analysis. The results of this exercise are presented as follows.

Main cause of disease burden in Health Region 7 in 1995 and the cost-effectiveness of the interventions available for their control

Disease and injuries	YLLs lost		Main intervention	*Cost-effectiveness* ($ per DALY)**
Motor vehicle accidents, homicide and violence	17,669	25.0%	Alcohol control program	35~55
Perinatal morbidity and mortality	8,249	11.7%	(a) Prenatal and delivery care	30~100
			(b) Family Planning	20~150
Diarrheal disease	7,524	10.6%	IMSC*	30~100
Respiratory infections	7,113	10.1%	IMSC*	30~100
Ischaemic heart disease	2,368	3.4%	Tobacco control program	35~55
Protein-energy malnutrition, Vit.A, Iodine deficiency	2,269	3.2%	(a) IMSC*	30~100
			(b) EPI-plus (PAI)	12~30
			© Iodine supplementation	19~37
Congenital malformation	1,581	2.2%	Surgical operations	High (unknown)
Depressive disorders	1,414	2.0%	Case management	500~800
Cerebrovascular disease	1,209	1.7%	Case management	High (unknown)
Maternal morbidity and mortality	1,136	1.6%	Prenatal and delivery care	30~110
Chronic obstructive pulmonary disease	857	1.2%	Tobacco control program	35~55
AIDS/STDs	853	1.2%	Condom subsidy plus IEC	3~18
Childhood cluster	243	0.3%	EPI-plus (PAI)	12~30
Tuberculosis	177	0.3%	Short-course chemotherapy	3~7
Malaria			IMSC*	30~100
Intestinal helminths			School health program	20~34
Subtotal	52,662	74.5%		
Total YLLs lost	70,651	100.0 %		

IMSC*; Integrated management of the sick child
**; cost required to gain 1 DALY

This result presents the estimates of life years lost (YLLs) for each cause of mortality in the region. For each cause, the most cost-effective interventions have been identified together with an estimate of the range of cost per year of reduced mortality. The information

presented in the table provides the basic starting point for the identification of a program structure with the potential for making the maximum reduction in premature death (and ultimately disability). As such, it represents the specific activities around which planning needs to take place and for which resources need to be available. The following section addresses general strategies for proceeding along this path of development in the region.

2) *General Strategies for Improvement*

The above priorities all reflect health conditions which are strongly affected by individual behaviors and the timeliness of the service delivery systems responses to need in the form of emergency care. Efforts to address these issues are incorporated in many of the general program strategies identified in the NMHP. Examples include strengthening the response capacity of the CESARes and CESAMOs and improved community health education, both of which impact directly on the areas of highest premature mortality identified in Health Region 7. Implementing these strategies at the regional level will require both more effective planning and, as well, improved targeting of public health resources to the priority problem areas. Opportunities to improve both of these dimensions of regional activities have been identified in the course of developing the NMHP. In addition to supporting the general NMHP strategies, the following additional regional activities are proposed to be initiated in Health Region 7 as short-term activities under the NMHP.

(A) Health Planning

As noted in the discussion above, current mortality data present a number of difficulties which need to be addressed before they can be effectively used for planning. While working with aggregate categories overcomes some of the problems, improvement in the collection and monitoring of basic mortality data is a high regional priority. In part, the quality of the data and their use are interactive Improved application generates the rationale for improved information and, conversely, improved information supports further application.

In the initial work in the region, the study team and counterparts carried out a number of informal analyses of existing data. Additionally, EPIMAP, a program to provide geographic analysis of the distribution of epidemiological characteristics including mortality and morbidity, was installed in the computers of the Regional office and staff of that office were instructed in its use. It is recommended that this process be continued and that efforts be made to incorporate additional analyses into the current planning processes. In particular,

the areas served by the CESAMOs and CESARes in Health Region 7 could be analyzed and differences which might support local priorities be assessed and reviewed as part of that process.

Additionally, the significant variation in the estimates of age-specific mortality indicate a need for review and improvement. The study team recommends that a survey be initiated specifically to assess, update, and consolidate the existing information sources. Ideally, improved information on morbidity, in particular that related to accidents and violence and communicable diseases, also needs to be collected. It might be more cost effective to focus morbidity surveys on a few target conditions and, as well, develop better estimates of the relationship between facility based information and household based information as a first approximation to regional statistics. Using Health Region 7 as a pilot site, these studies should be undertaken during the period 1996-2000. Based on this experience, the methods developed should be generalized to the other heath regions before the end of 2005. During the last five years of the NMHP, burden of disease assessment should be incorporated into the decentralized planning processes articulated as national policy by the Honduran Government.

(B) Health Financing

The recommendations of the NMHP are designed to improve the effectiveness of public expenditures in health by identifying specific interventions which would have the greatest effectiveness in addressing health problems of importance in different settings in Honduras. The Plan presents recommended actions to initiate the implementation of high priority activities and, where appropriate, identifies needed resources. Although some recommendations require significant initial investment, in the long run, the ability to sustain the promised impacts will depend on the capacity to support recurrent costs from available national funds.

For this reason, NMHP has recommended actions which affect the financing of health services. Two major lines of action have been proposed; improvement of the financial structure and service mix of IHSS and expansion of revenue generation through cost-recovery in the MSP. Each of these lines of action are designed to increase the degree to which users contribute to the cost of curative care services and, as a result, to increase the

public resources available for support of preventive and promotive care and, for target populations, curative services as well.

As noted earlier, Health Region 7 already incorporates elements of the NMHP recommendations. With respect to the IHSS recommendations, the Olancho region of IHSS already covers over 2,000 employees for expanded health benefits including primary care for insured, partners, and dependents up to the age of 10. Services are provided by the regional MSP hospital, Hospital San Francisco, under an agreement where IHSS pays a fixed share of collected E-M premiums to the institution in exchange for provision of all primary and secondary services. (Tertiary care is provided in IHSS facilities in Tegucigalpa or San Pedro Sula.) Premiums are collected against wages up to a maximum of Lps. 2,000 under a special regional agreement. In 1995, this agreement produced over Lps. 580,000 in revenue for the hospital. The NMHP supports extension of this model to other regions and, as well, expansion in Health Region 7.

Additionally, both the hospital and the regional service delivery settings have implemented formal cost-recovery programs although charges are relatively low and the waiver/exemption system is informal. Nevertheless, the hospital generated over Lps. 536,000 in 1995 from user fees, over 14% of its total non-personnel budget. The ambulatory settings of Region 7 generated additional revenues of almost Lps. 89,000.

The NMHP recommends that the existing cost recovery activities be expanded by restructuring the charges to generate both increased revenues, implementing improved waiver and exemption systems to protect those who are unable to pay, and to support extension of insurance coverage through IHSS and others to expand the pool of users able to pay for curative care services. The MSP has already indicated support for these actions and, as part of this effort, has agreed to implement a project to review current experience and support a pilot project for expansion of MSP cost-recovery activities.

The Study Team strongly supports this initiative and believes, based on its assessment in Honduras and its experience in other settings, that such a pilot project could be initiated almost immediately. In particular, it is recommended that the Hospital San Francisco and Health Region 7 be selected as the setting for the pilot project to be implemented. This would permit building on the existing experience in Olancho and, as well, developing a

expanded cost-recovery initiative in an area most likely to experience both economic growth and an increase in the demand for services over the near and medium term.

The results of these efforts would then be generalized to the MSP system as a whole, recognizing that fee schedules and expectations of revenue generation would have to be established in each region or area based on local economic realities. Nevertheless, the need for expanded revenue options is an essential component of implementation of the NMHP. The ability to support an improved, more cost-effective service delivery system can be significantly enhanced through a rationalization of the current system of financing health services in Honduras. The recommendations in the NMHP are designed to accomplish this end.

(C) Program intervention

On top of those current programs run by the health region 7, further emphasis should be put on the Alcohol control, prenatal and delivery care, family planning and "Integrated Management for Sick Children", as these program can be seen as one of the most cost effective countermeasures against the burden of diseases owned by the society.

The accomplishment of each CESAMOs and CESARes, as a front-end facility of the service delivery system to solve the above-mentioned issues, measured by the ratio of the number of first attention per health staff assigned there, indicated wide variety of efficiencies. Comparison among four health areas gives general impression of low scores in those health units located in the area 3. Perhaps it can be well explained by geographical and cultural inaccessibility characterized in this area. However, the underlying conditions, which contributed to those low performance, could be identified as follow; 1) decentralization of management has not been legalized and institutionalized to the municipal governments and communities as a part of ACCESO project, 2) cultural barrier to health institutions and low level of community activities, and 3) low access because of low service quality (medicine, medical equipment, low availability of doctors and nurses) and poor conditions of road and/or radio communication system, poor management of institution and lack of operation fund. Adding to that, the planned MCH clinics for respective health areas are hardly operational except one in Catacamas. Major reason of non-operational conditions for MCH would be poor management ability and/or low accessibility for inhabitants.

Improved local managerial ability, with an instrumental assistance by the ACCESO project, will facilitate monitoring and evaluation of those program performances to contribute further enhancement of health planning and programming at the regional and municipal levels. The review of the performance, which includes each UPS level at the bottom, to reflect various local situations, should be incorporated into a regional health system's performance, particularly for an interventions that requires certain technical skills or equipment such as high risk delivery.

CHAPTER 8

IMPLEMENTATION PROGRAM

8. IMPLEMENTATION PROGRAM

8.1. *Integration of NMHP and model programs*

MHP is composed of NMHP with fifteen strategies and the three model health programs for the selected areas. NMHP and the model programs are formulated so as to interact with each other effectively and efficiently for attaining the goals of MHP.

Components included in NMHP strategies are to be promoted with pilot projects for each of the health model programs implemented as the short-term plan (target year 2000); they need to be monitored and evaluated properly.

Based on the feedback from the monitoring and evaluation of the pilot projects, the model programs are to be applied to the similar areas inside and/or outside of the initial target areas as the medium-term plan (target year 2005). And then, the model programs are to be extended to the nationwide scale and/or to be qualitatively improved within the entire scope of the initial target areas as the long-term plan (target year 2010).

Having the components included in the NMHP's strategies and the model programs, MHP includes the vertical and horizontal approaches in order to realize sustainable project implementation for the nationwide health development. Additionally, the structural improvement of health service providers is one of the other important issues for attaining the goals and targets of MHP. Both of the central government level and the local government level organizations will need to be actively involved in the implementation of the plans in NMHP and the model programs.

The components of NMHP, the contribution of the model programs, and the major organizations concerned for each of the fifteen strategies are shown as follows, which are to clarify the interrelationship between NMHP and the model programs.

(1) Strategies related to context

1) Alleviation of poverty

(A) Components of NMHP

- *Institution building among community development committees*
- Establishment of training and extension centers for community leaders
- Facilitation of information about income generation projects

(B) Contribution of the Model Programs

(I) Model program for rural poverty area

- Institutional strengthening of community development committees
- Training and information services for agriculture, food production, and marketing
- Coordination between municipal development plans and municipal health plans
- Strengthening of social participation for income generation and utilization of community support funds

(II) Model program for urban poverty area

- Improving the system of education/training/information provision for institutional strengthening of community development committees
- Coordination between municipal development plans and municipal health plans
- Strengthening of social participation for income generation and utilization of community support funds
- Training and information services for income generation and disaster prevention

(C) Major Organizations Concerned

MSP, Health Region Offices, Municipality Offices, Community Development Committees (CODEMs and CODECOs, etc.), Health Promotion and Information Center (proposed by the urban poverty model program), Training and Extension Center (proposed by the rural poverty model program)

2) Access to food/food security

(A) Components of NMHP

- Improvement of low-cost irrigation system, crop diversification, access to credit and technical inputs, dissemination of organic composting system, post-harvest technology, marketing information and networks
- Strengthening health and nutrition education systems

(B) Contribution of Model Programs

(I) Model program for rural poverty area

- Links with NGOs for development and management of small-scale agricultural projects
- Inclusion of health/nutrition education in training/information activities.

- Improvement of training and information for agriculture, food production, and marketing

(II) Model program for urban poverty area

- Inclusion of health/nutrition education in training/information activities

(C) Major Organizations Concerned

MSP, Health Region Offices, Region/area Hospitals, Health Area Offices, CESAMOs/CESARes, Community Development Committees (CODEMs and CODECOs, etc.), Training and Extension Center, Health Promotion and Information Center (proposed by the urban area program and urban poverty programs)

3) Access to water and basic sanitation

(A) Components of NMHP

- Rationalization of control and management of water resources between concerned institutions
- Reinforcement of protection and control of water resources: review of Water Law, enforcement of regulations relevant to Water and Environmental Laws
- Elaboration of regional and municipal development plans that anticipate water and sanitation needs
- Transfer of technical and managerial capabilities to the municipalities: training of operation and management of municipal water and sanitation technicians by SANAA
- Improving maintenance of water/sanitation network through stricter implementation of cost-recovery mechanisms
- Education on environmental and health impact of water and sanitation, support for development and functions of local water boards

(B) Contribution of Model Programs

(I) Model program for urban area

- Including DIMA in elaboration of, municipal health plans
- Promotion of the role of DIMA in transfer of technology to other municipalities

(II) Model program for rural poverty area

- Support for community development committees' participation in designing, implementation, and control of water/sanitation projects

- Training and equipment lending services for water supply projects to community members

(III) Model program for urban poverty area

- Institution building for community-based water boards

(C) Major Organizations Concerned

MSP, SANAA, Municipality Offices, Health Region Offices, Health Area Offices, Community Development Committees (CODEMs and CODECOs, etc.), Water Boards, Resource Center, Training and Extension Center, Health Promotion and Information Center

4) Legal/institutional context

(A) Components of NMHP

- Reinforcement of relevant regulations for specific aspects of the Health Code
- Implementation of increase of IHSS salary limits, together with administrative reforms and plans for improvement/expansion of services
- Follow-up of procedures to ensure full transfer of national funds to municipalities
- Local, inter-sectoral coordination with municipalities to organize transfer of services management (initially for services linked to environmental control)

(B) Contribution of Model Programs

(I) Model programs for urban area

- Strengthening health units and the municipal government
- Strengthening transfer of technology for management of environment-related health services to municipalities

(II) Model programs for Integrated development area

- Strengthening of planning capabilities of alternative service delivery models for IHSS (contracting of MSP or private provider services)
- Improvement of coordination among related agencies
- Strengthening transfer of technology for management of environment-related health services to municipalities

(C) Major Organizations Concerned

MSP, IHSS, Municipality Offices

(2) Strategies related to household and community behaviors

1) Reduction of illiteracy

(A) Components of NMHP

- Incorporation of "transversal axes", including health and hygiene, into the curricula; development of Integrated Preventive Education program
- Improvement of living/working conditions for teachers, especially in rural areas
- Implement National Education Plan for Vocational Development of Young and Adults

(B) Contribution of Model Programs

(I) All model programs

- Promotion of contacts with teachers for joint activities in health-related education/training
- Including health/nutrition and income generation related contents in community-level adult education activities (women groups)

(C) Major Organizations Concerned

MSP, SEP, Municipality Offices, Health Region Offices, Health Area Offices, CESAMOs/CESARes, Community Development Committees (CODEMs and CODECOs etc.), Resource Center, Training and Extension Center, Health Promotion and Information Center

2) Improvement in health education interventions

(A) Components of NMHP

- Improvement of efficiency of health education interventions
  - Define health education policy, HED's roles and sources of funding, based upon joint proposal by HED, HRD, SPU and EMD of MSP
  - Increase regional/local capacity to elaborate , produce and evaluate educational material
  - Motivate and train staff in use of educational material and interpersonal communication

- Developing a culture of health promotion/disease prevention
  - Designing of health promotion interventions: topics, messages, audiences, media, sequence
  - Implementation through multi-media interventions, inter-sectoral activities, reinforcement from health personnel
- Look for possible partners in health education
  - Cooperation with the Ministry of Education: development of Integrated Preventive Education program (self-esteem, gender focus, mental health, drug addiction)
  - Cooperation with businesses, "maquilas" (AIDS, occupational health, reproductive health, accidents)
  - Cooperation with women and community organizations (MCH, malnutrition, accidents, vector control)

(B) Contribution of Model Programs

(I) All model programs

- Implementation of health education campaigns according to regional/local specificity; field testing of messages and media
- Promote contacts with teachers for joint activities in health-related education/training

(II) Model programs for urban area

- Establishment of health promotion/education center: production of educational material, training, counseling
- Follow-up on JUPSA project
- Identify businesses suitable for multiplication of health education messages

(III) Model programs for rural and urban poverty areas

- Promotion of working with women groups and other community organizations in development of community projects and education activities

(C) Major Organizations Concerned

MSP, SEP, Municipality Offices, Region/area Hospitals, Health Region Offices, Health Area Offices, CESAMOs/CESARes, Community Development Committees (CODEMs and CODECOs etc.), Resource Center, Training and Extension Center, Health Promotion and Information Center

3) Improvement in social participation

(A) Components of NMHP

- Improvement of the formal process/systems for social participation

- Improvement of the environment to foster social participation (multi-sectoral approach)
- Improvement of government functions to support social participation activities (democratization, transparency)

(B) Contribution of Model Programs

(I) All model programs

- Strengthening of regional social participation unit in health sector, with focus on inter-sectoral cooperation

(II) Model programs for urban area and integrated development area

- Develop community participation in elaboration of municipal health plans

(III) Model programs for rural and urban poverty areas

- Strengthening of referral functions through training of community leaders and provision of information on available services
- Education/training/information for institutional strengthening of community development committees; coordination with municipalities

(C) Major Organizations Concerned

MSP, AMHON, Municipality Offices, Health Region Offices, Health Area Offices, CESAMOs/ CESARcs, Community Development Committees (CODEMs and CODECOs etc.), Patronatos, Water Boards, Resource Center, Training and Extension Center, Health Promotion and Information Center

4) Reduction of fertility rate

(A) Components of NMHP

- Periodic revision of existing population policy and integration within other important aspects of human development
- Provision of family planning information and services to persons and couples willing to delay, space or reduce their pregnancies:
  - * training and motivation of staff
  - * timely supply of contraceptive products
  - * specific approach to the male population

(B) Contribution of Model Programs

(I) All model programs

- Provision of FP information and services as part of integrated package of health services, including community providers

(II) Model program for urban area

- Development of strategies to support AIDS prevention

(C) Major Organizations Concerned

MSP, National/region/area Hospitals, MCH Clinics, Emergency Clinics, Health Region Offices, Health Area Offices, CESAMOs/CESARes, Maternal Inns, Resource Center, Training and Extension Center, Health Promotion and Information Center

(3) Strategies related to health services delivery

1) Access to health services

(A) *Components of NMHP*

- Physical expansion of facility network
  - Development of community-based support facilities: maternal inns, community birthing homes, community health centers,
  - Building of new ambulatory facilities (CESARes, CESAMOs, CMIs) in the areas which currently have no services
  - Reconstruction of old area/regional hospitals (Choluteca, Danlí, La Ceiba, Trujillo); expansion in OBGyn and Pediatrics for area hospitals and Surgery/Orthopedics for regional hospitals.
  - Construction/rehabilitation of low-risk maternity: San Felipe Hospital (Tegucigalpa) and Hospital L. Martínez (SPS).
- Improvement in current problem-solving capacity
  - Community management of common diseases and problems
  - Assigning two health persons per CESAR in order to increase community outreach without closing facilities
  - Delivery of Basic Health Package/movement of personnel
  - Improvement in problem-solving capacity of CESAMOs: expanded scope of work including low-risk delivery and immediate complications, emergency care related to accidents and intoxication, dental care, laboratory support on a 24-hour/day basis.
  - Improvement in problem-solving capacity of area hospitals (emergency, surgery, obstetrics, lab support)
- Improvement of transport and transport financing mechanisms
  - Preventive management of problems to avoid needs for emergency transportation from places with difficult road access
  - Use of existing private sector or non-health public sector for transport from point of access towards primary care site

- Consider MSP/IHSS' system or Red Cross for referral transport

(B) Contribution of Model Programs

(I) All model programs

- According to priorities defined through assessment of health needs

(II) Model program for urban area

- Community birthing homes attached to integrated health center model
- Strengthening of PHC network and reduction of congestion in secondary level hospital (MSP project)
- Establishment of three integrated health centers in peripheral areas; links with MSP's Project for Management of Emergency Care on the Tegucigalpa-SPS axis

(III) Model program for rural poverty area

- Evaluation of existing facilities and replication in other isolated areas
- Improvement of cultural and physical accessibility through strengthening outreach programs
- Training and supervision/logistics support; links with local NGOs
- Strengthening of self-support, solidarity mechanisms

(IV) Model program for urban poverty area

- Improvement of cultural and physical accessibility through strengthening outreach programs
- Marketing proper use of the maternal and emergency referral system newly established by the projects of rehabilitation of Hospital and construction of three emergency clinics

(V) Model programs for integrated development area

- Establishment of integrated health centers as part of PHC service network and as short-term substitute for area-level hospitals
- Strengthening of self-support, solidarity mechanisms
- Exploration of IHSS reimbursement mechanisms for transport

(C) Major Organizations Concerned

MSP, IHSS, National/region/area Hospitals, MCH Clinics, Emergency Clinics, Health Region Offices, Health Area Offices, CESAMOs/CESARes, Maternal Inns, Health volunteers, Midwives

2) Management of facilities/organizations

(A) Components of NMHP

- Implement decentralization of management of health services:
  - * follow-up on budget decentralization experience
  - * develop new skills (negotiation, coordination) for intermediate management teams
  - * negotiate role of municipalities in management of services
- Streamline administrative procedures /consider outside services
- Promote client-oriented focus through operational investigation and training in interpersonal relationships
- Strengthen quality control mechanisms in hospitals: self-evaluation and accreditation processes
- Give priority to supportive supervision
- Work towards municipalization of information system and strengthen analytic capacity of local decision makers
- Use integrated computer network systems for epidemiological surveillance, diagnosis/treatment/referral support

(B) Contribution of Model Programs

(I) Model program for urban area

- Development of models for municipalities' participation in management and provision of health services (within the "healthy city" concept)

- Effectively including hospitals within network of health services and reinforce integration with surrounding communities through improvement of quality control mechanisms (for instance, implementation of counter-reference system)
- Strengthening municipality-based HIS with pooling of information from different providers

(II) Model program for urban poverty area

- Strengthen community organizations' capacity and willingness to exert control over health activities
- Effectively including hospitals within network of health services and reinforce integration with surrounding communities through improvement of quality control mechanisms (for instance, implementation of counter-reference system)
- Strengthening municipality-based HIS with pooling of information from different providers

(III) Model program for integrated development area

- Development of models for regional programming based upon epidemiological and organizational data (DALY model)
- Strengthening municipality-based HIS with pooling of information from different providers
- Strengthening HIS for actual use of DALY model

(C) Major Organizations Concerned

MSP, IHSS, National/region/area Hospitals, MCH Clinics, Emergency Clinics, Health Region Offices, Health Area Offices, CESAMOs/CESARes

3) Improvement of referral system

(A) Components of NMHP

- Definition, discussion and acceptance of the respective functions of each level
- Improvement of problem-solving capacity at primary care level
- Appropriate management of referred patient through priority attention and use of counter reference mechanisms
- Improvement in secondary and tertiary levels of care

(B) Contribution of Model Programs

(I) All model programs

- Identification of community needs and definition of functions strengthened through support to social participation (municipal health plans)
- Development of referral specialties and improvement in procurement/allocation of support equipment

(II) Model program for urban area

- Motivation and training for systematic use of counter-reference mechanisms
- Low-risk maternity facilities and reinforcement of area hospitals
- Coordinated MSP/IHSS equipment plan

(III) Model program for urban poverty area

- Low-risk maternity facilities and reinforcement of area hospitals
- Marketing of proper use of the referral system of maternal and emergency care providers
- Coordinated MSP/IHSS equipment plan

(IV) Model program for integrated development area

- Low-risk maternity facilities and reinforcement of area hospitals
- Coordinated MSP/IHSS equipment plan

(C) Major Organizations Concerned

MSP, IHSS, National/region/area Hospitals, MCH Clinics, Emergency Clinics, Health Region Offices, Health Area Offices, CESAMOs/CESARes, Maternal Inns, Health volunteers, Midwives

4) Improvement of drug logistics system

(A) Components of NMHP

- Implementation of essential drug policy
- Assessment of national pharmaceutical industry
- Improvement of procurement system
- Improvement of planning/information system: strengthening of the POSSS at UPS level; computerized inventory control systems
- Improvement of distribution and delivery system
- Improvement of rational use of drugs
- Increase of community involvement in drug management

(B) Contribution of Model Programs

(I) Model program for urban area

- Promote pilot project for community-controlled sale of drugs in health centers

- Strengthening of planning mechanisms for drug needs through supervision and application of epidemiological model
- Explore mixed transportation system involving municipality-owned or private sector resources

(II) Model program for rural poverty area

- Support to community drug funds

(III) Model program for urban poverty area

- Promotion of pilot project for community-controlled sale of drugs in health centers

(IV) Model program for integrated development area

- Promotion of pilot project for community-controlled sale of drugs in health centers

(C) Major Organizations Concerned

MSP, IHSS, National/region/area Hospitals, Health Region Offices, Health Area Offices, CESAMOs/CESARes, UNICEF, NGOs, Health volunteers

5) Maintenance of facilities and equipment

(A) Components of NMHP

- Strengthening central level management of maintenance system : redefine roles of PRONASSA and CENAMA
- Establishment of at least one regional maintenance center, providing training, technical support for maintenance and repairs, assistance for spare parts to health facilities
- Increasing sustainability through reliance on external sources : participation of municipalities in financing of the regional center; outside services contracting ; exchange of information and services with private facilities
- Improvement of sustainability through availability of trained technicians

(B) Contribution of Model Programs

(I) All programs

- Standardization of facility design and equipment specifications among projects and regions in order to facilitate operation and management

(II) Model program for urban area

- Establishment of facility/equipment maintenance center: repair and maintenance functions for hospitals and health centers in the region as well as information and training functions
- Outside service contracting for maintenance of large equipment also used in other businesses

(III) Model program for urban poverty area

- Promote inclusion of training in operation and management of biomedical equipment in INFOP-type training

(IV) Model program for integrated development area

- Promote inclusion of training in operation and management of biomedical equipment in INFOP-type training

(C) Major Organizations Concerned

MSP, IHSS, National/region/area Hospitals, PRONASSA, CENAMA, Regional Center for Maintenance, Training and Information Center (proposed by urban model program)

6) Human resource development

(A) Components of NMHP

- Promotion of preventive concept of health services and prepare better future health resources to respond to work site demands
- Training plan elaborated at regional/area level, based upon epidemiological and organizational assessment
- New role for normative divisions
- Selection of public health managers
- Facilitating working conditions of technically competent personnel working at the peripheral levels of the health system

(B) Contribution of Model Programs

(I) All programs

- Strengthening community participation in elaboration of training needs for health personnel through improved development of municipal health plans

- Identification of suitable persons for training in public health management

(C) Major Organizations Concerned

MSP, IHSS, SEP, Private providers, National/region/area Hospitals, MCH Clinics, Emergency Clinics, Health Region Offices, Health Area Offices, CESAMOs/ CESARes

7) Health financing

(A) Components of NMHP

- Expansion of cost-recovery activities
- Implementation of raises in IHSS salary limits together with administrative reforms and plan for improvement/expansion of services
- Development of coverage outside of Tegucigalpa and SPS under special agreements with existing providers (MSP and private)

(B) Contribution of Model Programs

(I) Model program for urban area

- Systematization of implementation of cost-recovery mechanisms and derive conditions for replication

(II) Model program for urban poverty area

- Systematization of implementation of cost-recovery mechanisms and derive conditions for replication

(III) Model program for integrated development area

- Development of alternative service delivery models for IHSS (contracting of MSP or private provider services)

(C) Major Organizations Concerned

MSP, IHSS, Private providers, National/region/area Hospitals, MCH Clinics, Emergency Clinics, Health Region Offices

8.2. *Stage-wise restructuring of health-related institutions*

MSP and IHSS are the national administrative agencies in the health sector. Currently, MSP provides public health service administration for several levels ranging from the central/regional/area levels to individual health service provider levels. The health region

offices and the area offices of MSP have functioned as the regional and area health prevention and control centers for community members.

As for the health service delivery, MSP has national hospitals in the central level, and regional/area hospitals and MCH in the regional level. The emergency clinics, whose construction is being planned, will be included into the MSP's health service providers. The health centers such as CESAMOs/CESARes are the major primary health care providers in communities. IHSS has provided health services through its own hospitals and clinics.

Besides MSP, IHSS, and other health service providers, the municipality offices are the important players for health promotion. The municipalities have had limited initiatives in health promotion and service delivery so far. However, through the municipalization policy and the ACCESO project, they are to start taking responsibilities for the health improvement of community members.

With conducting NMHP's fifteen strategies and the health model programs, the roles and functions of health administrative agencies and health service providers need to be reviewed and restructured for strengthening the decentralization system. Therefore, in addition to promotion of NMHP and development and expansion of the model programs, restructuring of concerned institutions is required; that is to say "three-dimensional approaches" are indispensable for achieving the goals of MHP.

MSP head office will be mainly responsible for policy making, programming, budgeting, supervising, and monitoring. The functions of managing and operating individual programs and projects, which are currently handled by MSP, will be decentralized step by step to the health region offices and other municipal authorities with considering their capabilities.

The nationwide restructuring of health service institutions should not be conducted in a short-term range; it is necessary to gain consensus of various levels of health service providers and users. In addition, a coordination system among MSP, IHSS, other governmental agencies concerned, NGOs, and donors will need to be more emphasized and strengthened both in the central and local levels.

These structural improvements covering the health-related institutions will be promoted as follows;

1) Short-term (target year 2000):

- Political dialogue among the health-related institutions;
- Policy making and programming for decentralization within MSP;
- Improvement of management abilities of each institution with small-scale physical expansion;
- Development and implementation of components for accomplishing NMHP strategies;
- Development and implementation of model projects included in the health model programs.

2) Medium-term (target year 2005):

- Monitoring and evaluation on the projects of improving management abilities of each institution within the scope of the NMHP fifteen strategies;
- Monitoring and evaluation on the cost-effectiveness of model projects which will be provided by the model programs;
- Expansion of the target areas of model programs based on the feedback.

3) Long-term (target year 2010):

- Accomplishment of MHP.

The Figure 8-1 shows the "without programs/projects" conditions and the Figure 8-2 outlines the "with programs/projects" conditions in the central, local, and community levels. Figure 8-2 includes the information about the institutional structure after the implementation of NMHP and the three model programs.

Colored areas specify the institutions concerned with promotion of the respective strategies. The areas covered by the health model programs are shown in the Figure, also. The three boxes with the characters of A, B, and C in the Figure 8-2 are mentioning about the major improvements which are the expected outputs of MHP as follows;

A. Improvement of the maintenance system, which will be promoted mainly through NMHP and the model health program for urban area
B. Improvement of referral system and accessibility, which will be promoted through NMHP and the model health programs for urban area, rural poverty area, and urban poverty area

C. Promotion of decentralization, coordination, and social participation, which will be promoted through NMHP and the model health programs for urban area, rural poverty area, and urban poverty area

Among the institutions involved in the Figure 8-2, the key players for the NMHP implementation are MSP, national/regional/area hospitals, emergency clinics, health region and area offices, CESAMOs/CESARes, warehouses, PRONASSA, CENAMA, SANAA, and municipality offices.

For the model programs, municipality offices, CESAMOs/CESARes, emergency clinics, MCH clinics, maternal inns, the Regional Center for Maintenance Training and Information are the key players; in addition, the Health Promotion and Information Centers proposed by the urban area and the urban poverty area health model programs, and the Training and Extension Center proposed by the rural poverty area program are to play important roles, also.

Expected needs of human and financial resource allocation in the key institutions and external cooperation for technology transfer and financial assistance, as well as implementing schedule for urgent needs of external cooperation are shown in the following chapters.

8.3. *Human and financial resource allocation*

MSP financial resources and expenditure were estimated as a reference for further discussion on the follow-up actions by MSP. MSP budget was projected as available financial resources in case of low growth of GDP.

Operational expenditure was estimated to meet demand for professional human resources, such as physicians, professional nurses, auxiliary nurses, technicians and dentists. Capital expenditure was allocated to NMHP and model programs including stage-wise expansion of the developed models.

The following assumptions were applied for the estimation of financial source and expenditure of MSP budget.

1) Total budget of MSP : corresponds to 2.5% of GDP
2) Operational and capital expenditure : constant share to total budget based on 1996 budget

3) Price : constant price of 1995

4) Foreign exchange rate : US$ 1 = Lps. 11.00

5) Cost recovery income : see Table 6-4

6) Operational cost

- Source

  Domestic source for operational expenditure would correspond to the cost in case of no change in external source and significant increase of cost recovery income.

- Expenditure

  MSP salary and wages were estimated with constant share of cost for professionals and administration staff. MSP operational cost excluding salary and wages is assumed to be kept at a constant share to total expenditure in 1996.

7) Capital cost

- Source

  Domestic source will be provided by own equity of the government, while external source is assumed to be no increase from 1996 up to 2010.

- Expenditure

  Capital cost for achieving NMHP should be prepared for physical expansion such as rehabilitation and new construction of hospitals and health centers. Cost for physical expansion is prepared for rehabilitation of these facilities and supply of equipment. Capital cost for area model programs was estimated to cover initial cost of the priority projects in short term stage, and cost for expansion stage was assumed to be 50% of project cost proposed for short term stage. The rest of capital cost will be invested for new construction of hospitals and health centers. Construction cost for hospitals and health centers was estimated by unit cost per area.

MSP financial resources and expenditure for achieving stage-wise implementation programs will be estimated as shown in the following figure.

According to the past experiences, major portion of cost has been spent for operational expenditure including salary and wages, and supply of medicines and the other consumable goods, while a capital cost of MSP budget excluding SANAA portion is very small.

It is important to consider that there is a serious shortage of national budget including external source of fund for physical expansion and operational expenditure for non-personal items, and that physical expansion would require a large amount of operational expenditure after construction of facilities and installation of equipment. Therefore, decentralization to local institutions is expected to cover the permanent shortage in operational cost in MSP as well as capital cost, by joint efforts of model development with MSP and local institutional authorities.

Projection of MSP Human Resources

Professionals	1996	2000	2005	2010
1. physicians	1,157	1,303	1,496	1,628
2. prof. nurses	640	756	824	923
3. aux. nurses	4,261	4,826	5,467	6,115
4. technicians	736	826	923	1,020
5. dentists	115	132	174	174

remarks : based on the Strategy (6)

Projection of MSP Financial Resources and Expenditure
(excluding SANAA portion) unit : Lps. mil.

	Short Term (1996-2000)		Medium Term (2001-2005)		Long Term (2006-2010)	
	total	yearly	total	yearly	total	yearly
1. public health (total)						
(1) budget	3,846	769	4,499	900	5,292	1,058
(2) cost recovery	149	30	369	74	530	106
total	3,995	799	4,868	974	5,822	1,164
2. operational cost						
(1) source						
1) domestic	2,994	599	3,501	700	4,119	824
2) external	71	14	71	14	71	14
3) cost-recovery income	149	30	369	74	530	106
total	3,214	643	3,941	788	4,720	944
(2) expenditure						
1) MSP salary and wages	1,655	331	1,929	386	2,262	452
2) other op. cost	1,559	312	2,013	403	2,458	492
total	3,214	643	3,942	789	4,720	944
3. capital cost						
(1) source						
1) domestic	151	30	177	35	208	42
2) external	615	123	616	123	616	123
total	766	153	793	158	824	165
(2) expenditure						
1) physical expansion	250	50	250	50	250	50
2) model project	181	36	126	25	253	51
3) other cost	337	67	417	83	321	64
total	768	153	793	158	824	165

The followings are the allocation of human and financial resources expected to be required in the key institutions with the implementation of NMHP and the model programs. The figures in the following pages summarize the qualitative and quantitative needs of each institution.

(1) Central level

According to the decentralization concept, which is incorporated into NMHP and the model programs, some part of the human resources and financial resources need to be re-allocated to the local institutions. Budget of MSP head office will be more allocated for the better management of policy making/implementation.

(2) In the scope of NMHP

1) national/regional/area hospitals

Quality of the national hospital services will be upgraded through strengthening of referral function of primary/secondary health services. Referral function will be strengthened for maternal health services by regional/area hospital. Therefore, upgrading of medical staff including doctors, nurses, and auxiliary nurses is required in the hospitals. Qualitative and quantitative improvement of technicians is required in national hospitals. As for the financial resources, capital expenditure for rehabilitation of national, regional, and area hospitals are needed with operation expenditure.

2) emergency clinics

Emergency clinics, which will be newly developed in Tegucigalpa as a first trial in this country, requires the big increase of medical doctors, nurses, and auxiliary nurses. Additionally, development of human/financial resources for managing the clinics is indispensable for the success of this newly introduced system.

3) regional/area office

Decentralization will be promoted through the institutional strengthening of municipal governments and promotion of social participation. Management capability of the health regional and area offices through managerial and technical support by the MSP health region and area offices. Especially, the functions of planning, project implementation, monitoring and evaluation need to be fostered in the local offices.

4) CESAMOs/CESARes

CESAMOs and CESARes will function as primary health service centers located nearest to the communities. In order to improve the referral system in the primary level and community members' accessibility, upgrading of health services in CESAMOs and CESARes is very needed. Double-staffing in CESARes need to be promoted in order to increase the accessibility of community members. Management capabilities for supporting community activities are also required to be developed.

5) MSP drug supply system (Warehouse)

Computerization in drug control will be promoted in the central, regional, and area level warehouses, which are to be extended to the nationwide drug control network system in the

future. Qualitative and quantitative upgrading of technicians and management staff is required.

6) For physical expansion (PRONASSA)

Planning, programming, and monitoring capacities in PRONASSA will be strengthened and effective use of private sectors and FHIS technologies be more promoted. PRONASSA will also develop designing manual for private bidders for building and equipment designing. PRONASSA needs upgrading of its technicians and management staff.

7) For medical facilities and equipment (CENAMA)

Operation, management, and training activities will be decentralized to health regional and area offices. Basic daily operation and management will be conducted at each CESAMO/CESAR level. CENAMA will function as a planning, programming, and monitoring body for operation and management of facilities and medical equipment. The number of technicians and management staff members needs to be increased, and the technical level should be upgraded, also.

8) For water and sanitation (SANAA)

SANAA's function of managing water supply systems has been transferred from their direct intervention to municipalities or community water boards. Decentralization will be more accelerated through strengthening of managerial and technical capacity of these local management bodies. In order to extend the water supply projects to the nationwide level, upgrading of the technical level and management system will be necessary.

9) Municipality offices

With promotion of decentralization, the municipality offices will play more important role in the community health promotion, in order to identify local needs, to integrate municipal health-related plans into municipal development plans. Municipal government will improve their administrative capacities both in human resources development and financial resources allocation. AMHON's function of coordination will become more important for effective and efficient promotion of decentralization.

	human resources					financial resources	
	m. Dr.	nurse	aux. nurse	tech.	mng.	physical improvement	operation
1) national/regional/area hospitals	++	+	+	++		renovation	increase of operational cost
2) emergency clinics	+	+	+		+	construction	operational cost
3) regional/area offices					++	upgrading	increase of operational cost for management improvement
4) CESAMOs/CESARes			+		++	upgrading	increase of operational cost for management improvement
5) warehouses				++	++	computerization	increase of operational cost for management and computerization
6) PRONASSA				++	++	rehabilitation/ improvement of equipment	increase of operational cost for management
7) CENAMA				++	++	strengthening of training systems	increase of operational cost for operating training center
8) SANAA				++	++	project implementation	increase of operation for management improvement

remarks : +Qualitative and quantitative improvement of staff is needed.

++ Qualitative improvement of technical level of staff is required.

(3) In the scope of the health model programs

1) Health education/training/information promotion center (urban area model program and urban/rural poverty area model programs)

These promotion centers will identify local needs of communities and provide information to them for the purpose of health condition improvement through social participation approaches. New technical and operational staff will be required.

2) Maintenance and Information Center (urban area model program)

Key staff for operation and management of equipment maintenance will be trained through training courses of this program at various levels. Employers of private hospitals and clinics will also be provided with technical services by the Center. Target groups of the training will be staff from CENAMA, hospitals and health regions, municipal governments, CESAMOs/CESARes. Number of technical and clerical staff needs to be increased with improvement of the functions and facilities.

3) CESAMOs/CESARes (urban area model program and urban and rural poverty model programs).

Accessibility to health services will be improved by quality upgrading of health centers. Referral function of these centers will be strengthened through these procedures and it will be closely linked with hospital management and existing NGO activities. Outreach programs by CESAMOs/CESARes will be improved through the model programs. High level CESAMOs proposed by the urban area model program needs additional medical and operational staffing.

4) Municipality offices (urban area model program)

The administrative capabilities of municipality offices needs to be improved both in human resources development and financial resource allocation.

	human resources					financial resources	
	m. Dr.	nurse	aux. nurse	tech.	mng.	physical improvement	operation
1) Health education/training/ information center			+	+	+	construction	operational cost
2) Maintenance and information center				++	++	construction of training center	increase of operational cost
3) CESAMOs/CESARes	+		+		+	improvement of equipment	increase of operational cost for management improvement
CESAMOs (high level)	+	+	+		+	renovation and improvement of equipment	increase of operational cost for functional improvement
4) Municipality offices				++	++		increase of operation cost for management improvement

remarks : +Qualitative and quantitative improvement of staff is needed.

++ Qualitative improvement of technical level of staff is required.

8.4. *External cooperation for technology transfer and financial assistance*

(1) National level

Upgrading of technical and management capabilities of MSP staff is required through technology transfer. Technical cooperation will be required in the form of dispatching of experts and consultants, training in the donor countries and/or the third countries; further studies are recommended for developing area master plans and feasibility studies of community health development plans.

functions	external cooperation is necessary for:
1) planning and administration:	a. programming/planning/budgeting
2) hospital service:	a. programming/planning/budgeting b. hospital management
3) drug supply logistics:	a. system development including computer systems b. logistics management
4) health education:	a. programming/planning/budgeting b. logistics management
5) physical expansion:	a. standardization of specification of designing/ construction
6) medical facilities and equipment:	a. training programming b. standardization of equipment for each care level c. development of operation manual
7) control of vector-borne diseases:	a. training programming b. standardization of operation and management
8) control of HIV/AIDS:	a. AIDS prevention b. social work c. training/information system
9) social participation:	a. programming b. training/information system
10)human resources development:	a. programming b. human resource management c. education/training
11) financing:	a. programming/planning/budgeting b. social security system c. health financing
12) water/sanitation:	a. water resource development, b. management of water supply system
13) legal issues:	a. law and institution
14) international cooperation:	a. international coordination

(2) In the scope of NMHP

For the completion of NMHP, external technical and financial cooperation needs to be provided to the respective organizations which are responsible for supervising hospitals, emergency clinics, regional/area offices, drug warehouses etc. The following table shows the items which are required to receive external assistance.

	human resources	financial resources	
		capital investment	operational cost
1) hospitals	management	rehabilitation equipment supply	
2) emergency clinics	management human resource development	construction	
3) regional/area offices	management		
4) CESAMOs/CESARes	management		
5) warehouse	computer system development programming	computerizat ion	
6) PRONASSA	design standardization management		
7) CENAMA	operation manual development		
8) SANAA	management for decentralization	water resources development	

(3) In the scope of the health model programs

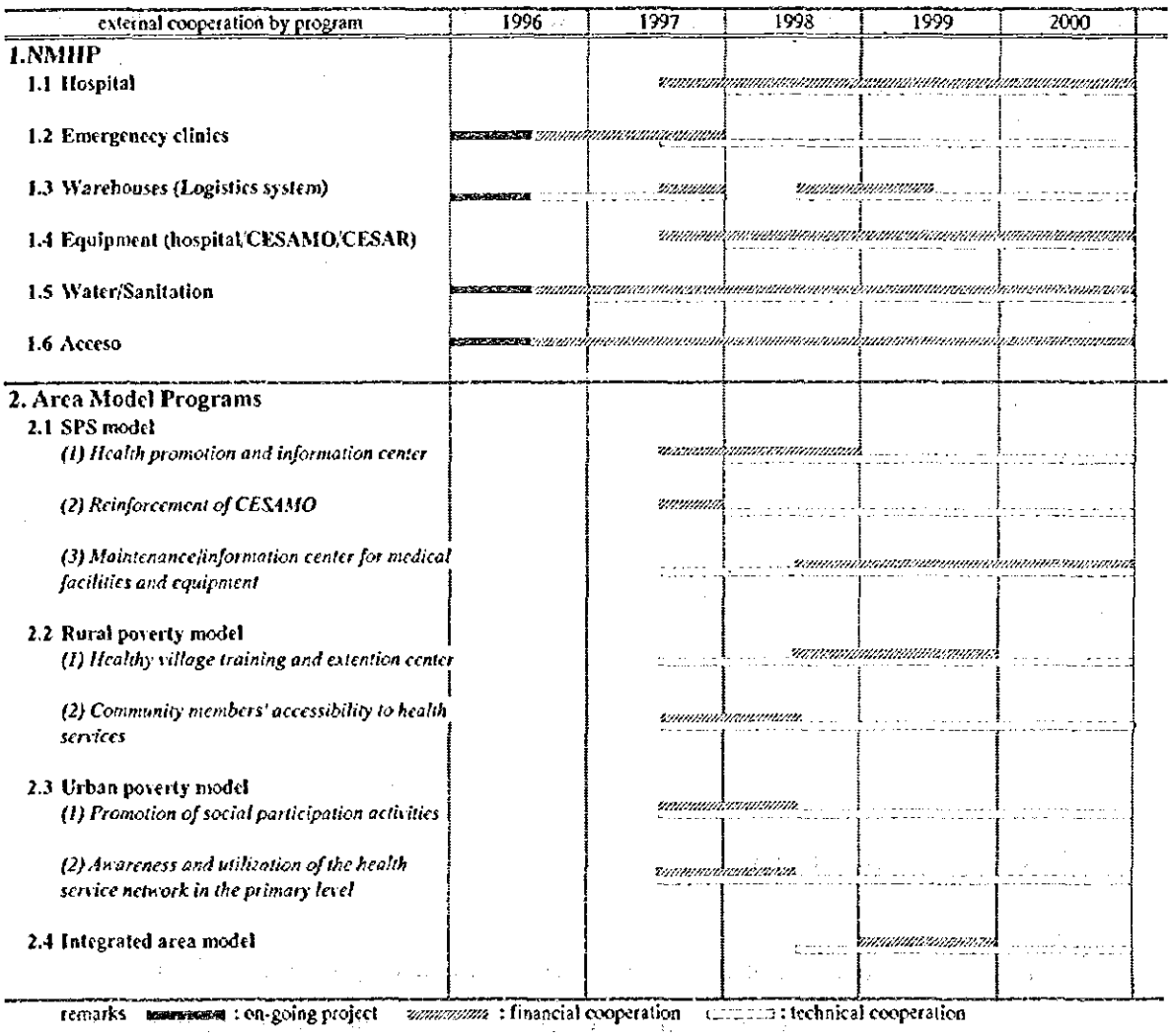
External technical and financial assistance for the health model programs needs to be implemented in coordination with ACCESO project, which has been assisted by Sweden and USAID being integrated with projects of UNDP, AIDSCAP, and NGOs. These projects will be proceeded in connection with the projects implemented in the scope of NMHP mentioned above.

	human resources	financial resources	
		capital investment	operational cost
1) Health education/training information promotion center	management training and extension social participation small-scale agriculture development	construction of the training centers	
2) Maintenance and information center	management mechanical training	construction of the center	
3) CESAMOs/CESARes	extension services management social participation outreach programs	upgrading	
CESAMOs (high level)	management extension services	upgrading	
4) municipality offices	management social participation		ACCESO

8.5. *Implementing schedule for external cooperation with urgent needs*

Implementation of NMHP will include NMHP promotion at central government level, hospitals, emergency clinics, warehouses of drug, equipment supply and water/sanitation, while area model programs are of SPS model, rural poverty model, urban poverty model and integrated area development model.

Restructuring of MSP will strengthen the policy making, budgeting, programming and coordination capability, and promote decentralization of health and health-related activities to he health region, municipal government and communities. Consultants group for this institution building will be required. The following schedule shows outline of external cooperation for the implementation of NMHP and area model programs.

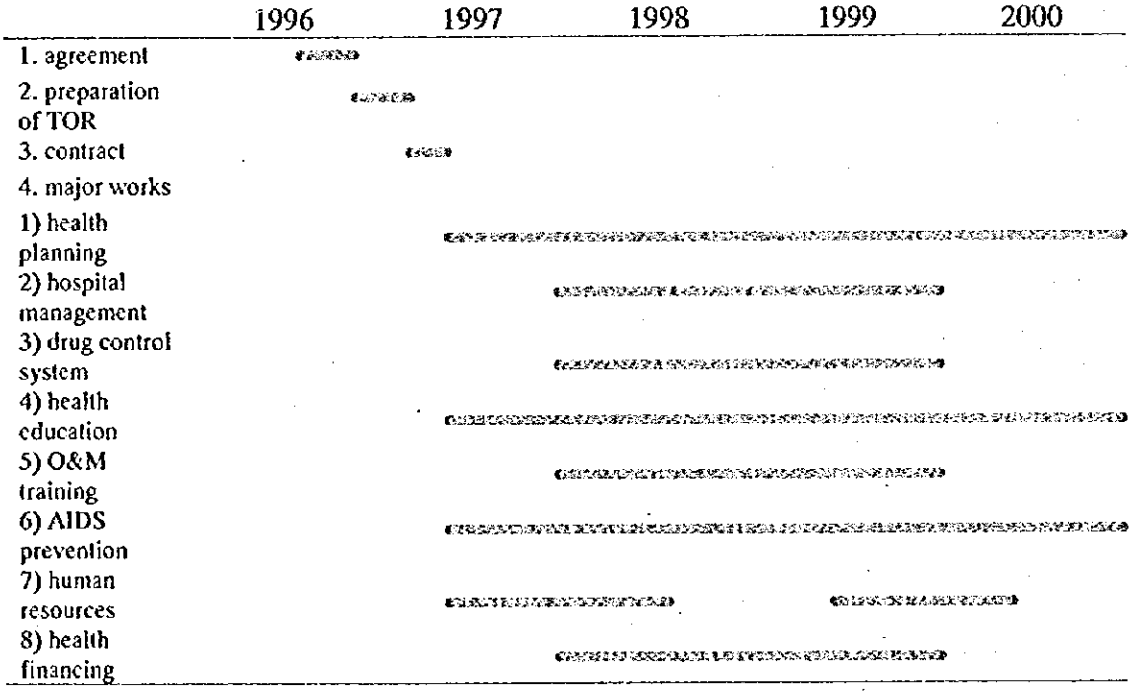


(I) NMHP

1) NMHP promotion at MSP central office

Technical cooperation will be required for implementation of NMHP. Consultant teams dispatched from donors should be assigned in advisory positions for CONSUMI. The team members should be selected from international qualified candidates for smooth coordination among donors.

Major fields of consultants are the health planning, hospital management, drug control system, health education, operation and management training (medical equipment), AIDS prevention, human resources development and health financing. Responsible persons of MSP for the further implementation of NMHP will be provided with opportunities to be trained in the donor countries and/or the third countries. This cooperation will include the strengthening of the regional and area office of MSP and coordination activities with IHSS.



2) NMHP promotion by nationwide projects

(A) hospital

Rehabilitation and expansion of the facilities will be implemented in the selected regional and area hospitals with external financial resources. Technical cooperation will be indispensable for the improvement of hospital management in addition to rehabilitation and

expansion works of facilities. Administrative and financial restructuring of the hospitals will be a target of technical cooperation as well as transfer of medical technologies.

	1996	1997	1998	1999	2000
1. financial cooperation	- physical expansion				
2. technical cooperation					
1) hospital management					
2) O&M training					
3) health financing					

(B) emergency clinics

Establishment of emergency clinics is the new idea for MSP's hospital restructuring. The clinics will be constructed by the Japanese Grant Aid and completed in 1997. Technical cooperation will be required for realization of effective facility operation. Major items of technology transfer are to secure the qualified health service and to change consciousness of community members in the urban marginal area of Tegucigalpa.

An expert for emergency care will be dispatched after the construction of clinics. Community members' awareness and marketing proper use of the newly introduced facilities will be promoted by implementation of "model projects" in the urban marginal area in Tegucigalpa.

	1996	1997	1998	1999	2000
1. financial cooperation					
1) basic design					
2) detail design					
3) new construction					
2. technical cooperation for emergency care (expert)					

(C) logistics

Drug warehouses have been established in the three service levels: national, regional and area warehouses. Computerization for stock control, distribution, and monitoring has been being promoted under the cooperation of USAID as POSSS project. It remains still at

preliminary stage to start up the effective system operation. Technical assistance will be required to complete the developed system through POSSS (Health Sector II). Financial assistance will also be extended for computerization.

	1996	1997	1998	1999	2000
1. financial cooperation for computer system					
1) covered area of H.S.II					
2) new areas					
2. technical cooperation for computer system					
1) covered area of H.S.II					
2) new introduction to the other area					

(D) equipment

Medical and non-medical equipment will be supplied to hospital, high level CESAMOs, normal CESAMOs and CESARes for upgrading of the health service quality. Technical cooperation for operation and management of these equipment will be provided in the health model program for urban area. Technical training should be implemented by experts dispatched from donors prior to equipment supply to those health service providers.

	1996	1997	1998	1999	2000
1. financial cooperation (B/D, D/D)					
1) hospital					
2) high level CESAMO					
3) CESAMO					
4) CESAR					
2. technical cooperation by experts					

(E) water/sanitation

Water supply system has been established by donors; technical cooperation has been provided by UNICEF in the urban marginal areas of Tegucigalpa. These systems have

significantly improved accessibility to water and contributed to the health improvement in the communities.

The management systems of the water supply systems have been developed by SANAA/UNICEF under the decentralization policy and have been transferred to the municipal governments or communities.

Financial and technical cooperation is expected to be expanded to cover all the urban marginal areas of Tegucigalpa and then San Pedro Sula. External cooperation for the establishment of water supply systems in the rural areas should be implemented as part of the integrated "healthy village" Model Program proposed by the Study.

External cooperation for the establishment of water supply system in the rural areas should be also implemented as part of the integrated "healthy village" Model Program proposed by the Study.

	1996	1997	1998	1999	2000
1. metropolitan area include. marginal area					
1) financial cooperation					
2) technical cooperation					
2. other areas (small scale equip.)					
1) financial cooperation					
2) technical cooperation					

3) Implementation of the health model programs

(A) program for urban area

(I) health promotion and information center (or AIDS prevention and information center)

This model project will contribute to establishing healthy city environment in San Pedro Sula. It focuses on the education and training of leaders of communities and municipal institutions by identification of community needs, promoting inhabitants' awareness to health services. Dissemination of information to health service providers and inhabitants including health and health related education on AIDS prevention is also included.

	1996	1997	1998	1999	2000
1. agreement among donors					
2. financial cooperation					
1) basic design					
2) detail design					
3) new construction					
3. technical cooperation					
4. SPS health unit strengthening (expert)					

(II) reinforcement of CESAMOs

Some CESAMOs in SPS will be upgraded to provide normal delivery services in addition to ordinary health center activities in order to reduce the congestion in Mario Catarino Rivas national hospital, which has brought about the inconvenience of pregnant women. Small scale technical and financial external assistance will be necessary.

	1996	1997	1998	1999	2000
1. financial cooperation (equipment)					
2. technical cooperation (volunteers)					

(III) maintenance and information center (for medical facilities and equipment)

This project will be financed by external technical and financial resources, which will provide operation and management technology to the health service providers in SPS and staff of CESAMOs/CESARes in the Health Region 3.

	1996	1997	1998	1999	2000
1. financial cooperation					
1) basic design					
2) detail design					
3) new construction					
2. technical cooperation (expert)					

(B) program for rural poverty area

(I) healthy village training and extension center

Volunteers' team leader will be dispatched to activate community participation from planning/programming/designing stages, technology transfer during project implementation, monitoring and evaluation, and project operation.

Implementation of a comprehensive feasibility study will contribute to the effective project formulation for developing "healthy village" environment in the Dept. of Intibucá, which will be a target area of the program. Series of external technical cooperation will lead to technology transfer by volunteer teams and financial assistance.

	1996	1997	1998	1999	2000
1. financial cooperation					
1) basic design					
2) detail design					
3) new construction					
2. technical cooperation					
a. expert					
b. volunteers					
3. feasibility study					

(II) improvement of community members' accessibility to health services

Effective use of the area hospital and maternal inn will be promoted for the improvement of accessibility through volunteers' activities.

	1996	1997	1998	1999	2000
1. financial cooperation (equipment)					
2. technical cooperation (volunteers)					

(C) program for urban poverty area

(I) promotion of social participation activities (Health Promotion and Information Center)

Coordination among projects implemented by NGO and/or communities will be promoted in order to integrate their activities into accomplishing the common goals of health

promotion of community members through smooth and timely introduction of financial and technical assistance of donors.

This project will contribute to identify actual local needs and provide information to communities and community members as well as health service providers.

	1996	1997	1998	1999	2000
1. financial cooperation					
2. technical cooperation					
1) expert					
2) volunteers					

(II) improving awareness and utilization of the health service network in the primary level

This project will contribute to promoting referral system in the primary health level and marketing of proper use of the emergency clinics, for which the basic design is currently being developed with financed by the Japanese Grant Aid.

	1996	1997	1998	1999	2000
1. financial cooperation					
2. technical cooperation					
1) expert					
2) volunteers					

(D) program for integrated development area

A theoretical model for the optimum resource allocation will be developed, which will be applied for prioritization of health problems identified by the DALY model and programming, based upon cost and effectiveness of the selected programs for problem solution. Consensus on applying this concept should be obtained before implementation of research and further studies.

	1996	1997	1998	1999	2000
1. financial cooperation					
2. technical cooperation					
1) consensus					
2) preparation of TOR					
3) research and programming					
4) data base development					
5) application for resource allocation					

CHAPTER 9

CONCLUSION AND RECOMMENDATION

9. CONCLUSION AND RECOMMENDATION

Eleven priority health problems were identified through the workshops and the discussions with Coordination Committee for the Study during the Phase I Study. The fifteen strategies, which are the components of National Master Health Plan (NMHP), were selected and authorized through the workshops and Coordination Committee during the Phase II Study. In Phase III, model areas for the NMHP were selected to prove the reliability of the plan and to propose area-wise master plans developed for implementing NMHP. The implementation program for MHP and external cooperation is proposed by the Study.

9.1. *Priority problems*

1) Infant Mortality Rate (IMR)
2) Maternal Mortality Rate (MMR)
3) Malnutrition
4) Access to water and sanitation
5) HIV/AIDS
6) Vector-borne diseases
7) Accidents
8) Violence
9) Chronic degenerative diseases
10) Environmental health
11) Occupational health

9.2. *National Master Health Plan*

(I) Strategies related to context

(I) Alleviation of poverty

- Institutional strengthening for promoting community activities
- Coordination of municipal development plans and municipal health plans
- Provision of training and information services

(II) Access to food/food security

- Institutional strengthening for promoting community activities
- Improvement of production, marketing, transportation, and information system

- Strengthening of health and nutrition education system
- Strengthening of linkage with NGOs for development and management of small-scale agricultural projects

(III) Access to water and basic sanitation

- Rationalization of control and management of water resources among institutions concerned
- Reinforcement of protection and control of water resources
- Support of regional and municipal development plans that anticipate water and sanitation needs
- Transfer of technical and managerial capabilities to the municipalities
- Maintenance of water/sanitation network through implementation of cost-recovery mechanisms
- Education on environmental and health impact of water and sanitation
- Support for development and functions of local water boards

(IV) Legal and institutional context

- Reinforcement of relevant regulations and strengthening of local government management capability through sustainable development of ACCESO project
- Follow-up of procedures to ensure full transfer of national funds to municipalities
- Strengthening of inter-sectoral coordination with municipalities and agencies concerned for health improvement

(2) Strategies related to household and community behaviors

(I) Reduction of illiteracy

- Incorporation of "transversal axes", including health and hygiene
- Improvement of living and working conditions for teachers
- Implementation of National Education Plan for Vocational Development of Young and Adults
- Promotion of contacts with teachers for joint activities in health-related education and training
- Inclusion of health, nutrition and income generation related contents in community-level
- Promotion of adult education activities (women's group)

(II) Improvement in health education interventions

- Inter-sectoral cooperation and effective use of multi-communication system
- Increase of regional or local capacity to elaborate, produce and evaluate educational material
- Training of staff in use of educational material and interpersonal communication
- Implementation of health education campaigns
- Promotion of contacts with teachers for joint activities in health-related education and training
- Promotion of working with women groups and other community organizations in development of community projects and education activities

(III) Improvement in social participation

- Improvement of the formal process and systems for social participation
- Improvement of the environment to foster social participation
- Development of community participation in elaboration of municipal health plans
- Education, training and information provision for institutional strengthening of community development committees

(IV) Reduction of fertility rate

- Periodic revision of existing population policy and integration within other important aspects of human development
- Provision of family planning information and services to persons and couples willing to delay, space or reduce their pregnancies

(3) Strategies related to health services delivery

(I) Access to health services

- Improvement of cultural and physical accessibility linked with ACCESO project
- Physical expansion of facility network : community-based support facilities, CESARes, CESAMOs, CMIs, area/regional hospitals, low-risk maternity services
- Improvement in current problem-solving capacity : Community management, assigning two health persons per CESAR, delivery of Basic Health Package and movement of personnel, improvement in problem-solving capacity of CESAMOs, emergency care and improvement in problem-solving capacity of area hospitals

- Improvement of transport and transport financing mechanisms

(II) Management of facilities and organizations

- Implementation of decentralization of management of health services
- Establishment of streamline administrative procedures
- Strengthening of management capability and quality control mechanisms in hospitals
- Effective inclusion of hospitals within network of health services and reinforcement of integration with their surrounding communities
- Strengthening municipality-based Health Information System

(III) Improvement of referral system

- Strengthening of social participation
- Improvement of problem-solving capacity at primary care level
- Appropriate management of referred patient through priority attention and use of counter reference mechanisms
- Improvement in secondary and tertiary levels of care
- expansion of low-risk maternity facilities and reinforcement of area hospitals
- Proper use of the referral system of maternal and emergency care providers
- Coordination with MSP and IHSS

(IV) Improvement of drug logistics system

- Implementation of essential drug policy
- Assessment of national pharmaceutical industry
- Improvement of procurement system
- Sustainable development of the POSSS
- Improvement of distribution and delivery system
- Improvement of rational use of drugs
- Increase community involvement in drug management

(V) Maintenance of facilities and equipment

- Restructuring of PRONASSA and CENAMA
- Standardization of facility design and equipment specifications
- Establishment of the regional maintenance center
- Establishment of training center for facility and equipment maintenance
- Outside service contracting for maintenance

(VI) Human resource development

- Definition of new role for normative divisions
- Personnel training plan elaborated at regional and area level, based upon epidemiological and organizational assessment
- Selection of public health managers
- Promotion of preventive concept of health services and preparation of better.future health resources in response to work site demands
- Facilitating working conditions of technically competent personnel working at the peripheral levels of the health system
- Strengthening community participation in elaboration of training needs for health personnel through improved development of municipal health plans
- Identification of suitable persons for training in public health management

(VII) Health financing

- Expansion of cost-recovery activities of Hospital, or public health service providers
- Implementation of raises in IHSS salary limits together with administrative reforms and plan for improvement or expansion of services
- Development of IHSS coverage outside of Tegucigalpa and SPS under special agreements with existing providers

9.3. *Model Health Programs*

(I) Program for urban area

(A) Goals and targets

The goal of model health program is to promote the concept of "healthy city". The citizens' participation of commitment on the issues relating to their life, health and well being is essential for both planning and implementation. Active social participation in health activities is also needed.

(B) Model projects

(I) Model project 1 : Health Promotion and Information Center

The Health Promotion and Information Center's functions are to reinforce and to coordinate the efforts in health promotion and disease prevention activities including HIV/AIDS problems in SPS City and surroundings. The Center will be controlled by a Board of

Directors made up of representatives of the municipality and Health Region 3. A Coordination Committee will be organized with IHSS, NGOs, donors, etc.

(II) Model project 2 : Reinforcement of CESAMOs' Functions

The major functions are to improve access to primary health care services and to improve quality of services in birth delivery and emergency care at the national hospital by reducing its overload. The Metropolitan Area Office, Health Region 3, and the municipality will be responsible for the operation of CESAMOs with systematic coordination.

(III) Model project 3 : Maintenance and Information Center for Medical Facilities and Equipment

The major function is to develop a model for maintenance system in Health Region 3 linked with the national center of PRONASSA and CENAMA.

(2) Programs for poverty area

1) Program for rural poverty area

(A) Goals and targets

The goal of the model health program is to promote preventive health awareness and to develop a "healthy village" model for the entire population living in the catchment area of the La Esperanza Hospital.

(B) Model project

The model program is composed of the following two model projects. These two model projects are to be integrated to function as the core projects for developing the "healthy village" model. These core projects can be implemented through technical cooperation utilizing the existing facilities following the implementation plan proposed by the Study. However, in order to extend the "healthy village" model to the entire area of the Dept. of Intibucá, the feasibility of improvement of health and health-related infrastructure, hospital management, income generation projects needs to be studied.

(I) Model project 1 : Establishment of "Healthy Village Training and Extension Center"

The major functions are to promote community activities by establishing basic facilities and institution building for community development organizations, to improve community members' cultural accessibility to health services, and to improve nutrition conditions and

income generation opportunities. Implementation organization will be MSP Health Region 2 with coordination among the Dept. of Intibucá, Municipal governments, AMHON, Sec. RRNN, SEP, SANAA, FHIS, PRAF, BANADESA and ACCESO project.

(II) Model project 2 : Improvement of community members' accessibility to health services

The major functions are to promote preventive health awareness among the communities and to improve accessibility to health services. Implementation organization will be Health Region 2 with coordination among the Dept. of Intibucá, Municipal governments, AMHON, SEP, FHIS, PRAF, ACCESO project.

2) Program for urban poverty area

(A) Goals and targets

The goals of the model health program are to improve the access to preventive and emergency care at the primary level, and to contribute to organization and unification of communities in the marginal areas by strengthening social participation in the urban marginal area in Tegucigalpa.

(B) Model projects

(I) Model project 1 : Improved actions to promote social participation activities

The major function is to create a receptive environment for promoting social participation activities in the communities by institutional strengthening of the Metropolitan Health Region office. Implementation organization will be the Metropolitan Health Region with coordination among municipality, AMHON, SEP, FHIS, PRAF and ACCESO project.

(II) Model project 2 : Improvement of awareness and utilization of the health service network in the primary level

The major function is to support the proper and effective use of the planned emergency clinics and the renovated maternal ward in San Felipe Hospital. Implementation organization will be the Metropolitan Health Region with coordination among municipality, AMHON, SEP, FHIS, PRAF and ACCESO project.

(3) Program for integrated development area

(A) Objectives

The objectives are to develop the theoretical model for problem's prioritization and to conduct programs selection by cost-effectiveness in Health Region 7, and this model will provide basic information for policy making, coordination and budgeting.

(B) Prioritization of health problems

Disability-Adjusted Life Years lost (DALYs), has been developed to measure the impact of premature mortality and morbidity caused by different health problems in a particular setting.

Program priorities for the region would be targeted at communicable disease, maternal & perinatal causes with special emphasis on reducing infant mortality, and injury of working age males, followed by non-communicable disease mainly for reproductive age of women.

Available mortality data shows large differences between male and female reported mortality. For the age group 12 to 49, reported male mortality is almost 2 ½ times that of females. This implies considerable under-reporting for women which may reflect mortality causes which are difficult to record, such as unsafe pregnancy or abortions.

(C) Strategies for health improvement

(I) Programming

For each cause, the most cost-effective interventions have been identified together with an estimate of the range of cost per year of reduced mortality.

(II) Health Financing

Two major lines of action have been identified for improvement of the financial structure and services mix of IHSS and expansion of revenue generation through cost-recovery in the MSP.

(D) Application of the developed model

(I) Data collection for problem identification

Further survey will be required to develop accurate model in estimating specific YLL and YLD. It should be regularly updated.

(II) Programming

11 priority problems and 15 strategies should be carefully considered into area-specific program for efficient resource allocation.

(III) Planning system

Programming and budgeting system will be established based upon the theoretical base of health problems and cost-effectiveness proposed in this model. Social participation should be also considered in system building.

9.4. *Implementation Program*

(I) Stage-wise restructuring of health-related institutions

MSP central level will focus on policy making, programming, budgeting, standard setting, supervising, and monitoring. The current MSP's functions of managing and operating individual programs and projects will be decentralized step by step to the health regions and to municipal authorities considering their capabilities. The nationwide restructuring of health service institutions should not be implemented in a short-term range without gaining consensus of various levels of health service providers and users. In addition, a coordination system among MSP, IHSS, other governmental agencies concerned, NGOs, and donors will need to be more emphasized and strengthened both at central and local levels.

(A) Short-term (target year 2000) :

- Political dialogue among the health-related institutions;
- Policy making and programming for decentralization within MSP;
- Improvement of management abilities of each institution with small-scale physical expansion;
- Development and implementation of model projects included in the health model programs.

(B) Medium-term (target year 2005) :

- Monitoring and evaluation on the projects of improving management abilities of each institution within the scope of the NMHP fifteen strategies;
- Monitoring and evaluation on the cost-effectiveness of model projects which will be provided by the model programs;

- Expansion of the target areas based on the feedback.

(C) Long-term (target year 2010) :

- Accomplishment of MHP

(2) Human and financial resource allocation

Basic principles for human and financial resource allocation will be summarized for the respective health service providers as follows:

(A) NMHP

(I) National hospital and emergency clinics

Quality of the national hospital services will be upgraded through strengthening of referral function of primary and secondary health services, which contribute to improve accessibility to institutional health services.

(II) Regional and area health office

Decentralization will be promoted by institutional strengthening of municipal government and community participation through managerial and technical support by the MSP health region and area offices. In order to improve the service quality and accessibility, mobile outreach services by CESAMO staff, double-staffing in CESAR will improve service quality at PHC level.

(III) Warehouses

Computerization for drug control systems will be strengthened in central and regional warehouses, and be developed as nationwide drug control network system in the long run.

(IV) Physical expansion (PRONASSA)

PRONASSA will have its planning/programming and monitoring capacity strengthened. Effective utilization of private sectors will be promoted. PRONASSA will also develop designing building and equipment for private bidders.

(V) Management of facilities / equipment (CENAMA)

Operation and management of training activities will be decentralized to regional/area health offices. Simple daily operation and maintenance will be implemented at each CESAMO or CESAR level. CENAMA will function as planning, programming and monitoring body for operation and maintenance of facilities and medical equipment.

(VI) Water/sanitation (SANAA)

SANAA functions for management of water supply systems will be transferred from direct intervention to municipal or community participation method. Decentralization will be much more accelerated through strengthening of managerial and technical capacity of these local management bodies.

(B) Model programs

(I) Health promotion center for education, training and information

Poverty area: for inhabitants, health service providers, municipal governments and donors in the urban marginal areas in Tegucigalpa and the poverty area in the Dept. of Intibucá. The center establishment project and the accessibility improvement project should be integrated for more effective project implementation.

(II) Upgrading of CESAMO (quality of services)

Accessibility to health services will be improved by training of health staff and community members. Training will be effective for strengthening of problem solving capacity and referral system through close linkage with hospital management and existing NGO activities.

(III) Regional center for facilities/equipment maintenance, training and information

Key staff of O&M will be trained through training courses of this program at various levels. Employers of private sectors will be also provided with technical services. Target groups of training will be staff from CENAMA, hospitals and health regions, municipal governments, CESAMO / CESAR and communities. For the privatization of O&M, technicians of private sectors will be future target groups.

(3) External cooperation

(A) MSP restructuring

Consultants' group for institutional buildings will be required through external technical cooperation. Development of data base about the health and health-related information is also contribute to the institutional restructuring through application of the survey method developed by the Study.

(B) NMHP

(I) Hospital

Physical expansion and upgrading of management capabilities will be promoted to achieve effective use of the limited human and financial resources. Rehabilitation of the regional and area hospitals needs to be funded by donors and technical cooperation. Hospital management will be the most prioritized issue for improvement of hospital services. Construction of new hospitals will be feasible in the medium and long-term basis through encouragement of IHSS restructuring, MSP cost recovery and referral function improvement.

(II) Emergency clinics

Establishment of the emergency clinics is the new idea for MSP hospital restructuring. The first trial will be promoted by the project with Japanese grant aid for construction which is now being designed in Tegucigalpa. Technical cooperation will be required for effective operation of the facilities. Major points of technology transfer are to secure and to train the qualified health staff on the new clinic management system.

(III) Drug supply

Drug procurement will be centralized because of economy of scales and efficient drug stock control and distribution system. Drug warehouses have been established and computerization of logistics has been implemented under the cooperation by USAID as POSSS project. Technical assistance will be contribute to completion of this system.

(IV) Equipment

Medical and non-medical equipment will be supplied to MSP health providers for upgrading of their health service quality. Technical cooperation for operation and management of this equipment will be provided in close linkage with SPS model project. In the long-term plan, operation and maintenance services will be privatized.

(V) Water/sanitation

- Urban area

Water supply system has been being established by donors and technical cooperation provided by UNICEF in the Metropolitan areas in Tegucigalpa. Management system developed by SANAA and UNICEF will be transferred to municipal governments or

communities. This system has significantly contributed to health improvement of marginal areas in Tegucigalpa. Financial cooperation is expected to cover all of the marginal areas in Tegucigalpa.

- Rural area

External cooperation for the establishment of water supply system in the rural areas should be implemented as a part of the integrated "healthy village" Model Program proposed by the Study.

(C) Model programs

(I) SPS model program

a) Health promotion and information center

PAHO and USAID are leading donors for international technical cooperation in Central America regarding AIDS policy. Agreement for international technical and financial cooperation among agencies concerned will be indispensable for sustainable development of this center.

b) Reinforcement of CESAMO

Major source of fund will be FHIS and SPS municipal government with a small scale technical/financial assistance from foreign countries.

c) Maintenance/information center for medical facilities and equipment

Technical and financial cooperation will be required to establish the regional center for operation and maintenance in SPS and other areas of health region 3. In the long run, this center will function as national training center to support human resource development for operation and maintenance of medical equipment.

(II) Poverty model program

Technical cooperation will be intensively implemented through the following two types of cooperation.

a) Healthy village training and extension center and community members' accessibility to health services

Volunteers' team will be dispatched and the Feasibility Study (F/S) will be proposed to establish an integrated and comprehensive "healthy village" model in the Dept. of Intibucá.

The model program is composed of the following two model projects. These two model projects are to be integrated as the core projects to realize the "healthy village" concept and extend it to the entire area of the Dept. of Intibucá.

b) Promotion of social participation activities and awareness and utilization of the health service network in the primary level

Technical cooperation will be proposed to support emergency clinics and Hospital San Felipe.

(III) Integrated area model program

Technical cooperation will be required to implement further study including data collection, data base development, and model programming.

9.5. *Follow-up Action*

The purpose of the Study is to formulate "Long-term Master Health Plan (1996-2010) and to transfer the developed planning methodology to the Honduras Government.

The Honduras Government is expected to take the following actions for further implementation of the Master Health Plan (MHP)

(1) To organize the Committees for implementation of the MHP

(A) National Committee

Function : Coordination at the central level
Members : MSP, IHSS, SANAA, RRNN, SEP, SEDA, SECPLAN, private sectors (NGOs, associations etc.)

(B) Regional Committee

Function : Coordination at the local level
Members : Health Region, Department Government, Municipal Government, private sector (NGOs etc.) and communities

(C) Coordination Committee with donors

Function : Coordination of external cooperation
Members : MSP and donors

(2) To identify the long-term and the urgent needs

Long-term needs : Restructuring of institution and management in the health and health-related sectors

Short-term needs : Sustainable development of the existing programs/projects and model development

(3) To execute the short-term programs/projects to meet urgent needs

(A) NMHP

- upgrading of hospital management and physical rehabilitation
- sustainable development of drug control system
- equipment supply to hospitals and control system
- sustainable development of water supply and sanitation control

(B) Model programs

- designing of the Health Promotion and Information Center in San Pedro Sula
- Feasibility Study of the "healthy village" development for the rural poverty area in the Dept. Intibucá
- data base development based upon the integrated area model in Health Region 7

(4) Follow-up study in vertical approach

Specific measures for the vertical line, such as vector-borne diseases, dental health, tuberculosis, laboratory testing and disaster control etc., are not covered in detail in this comprehensive master plan. A follow-up study of this master plan on these matters is expected to be conducted by agencies concerned.

Figures and Tables

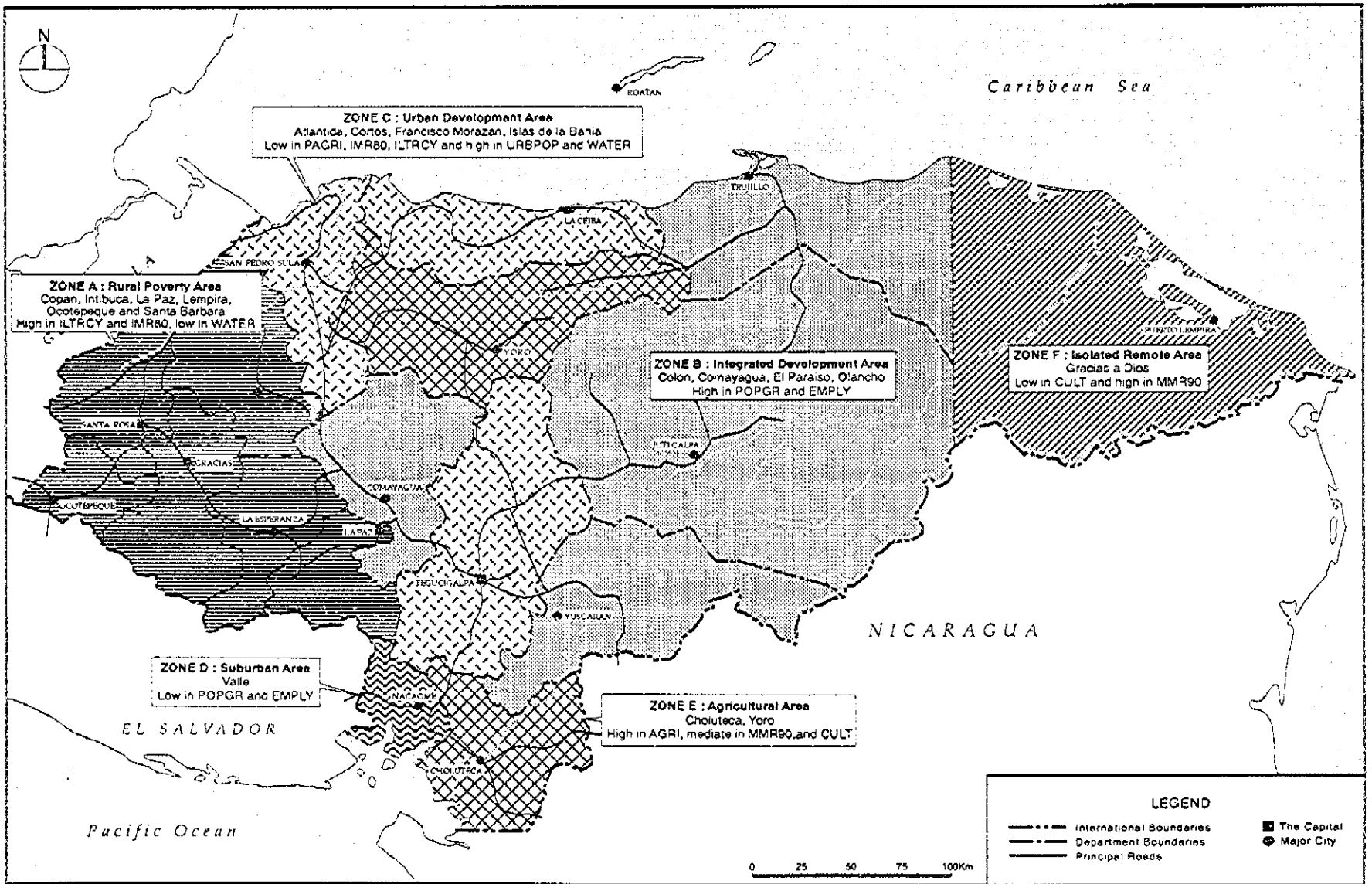


Figure 2-1 Zoning for the sampling of Household survey, Institutions survey, Exit interview survey

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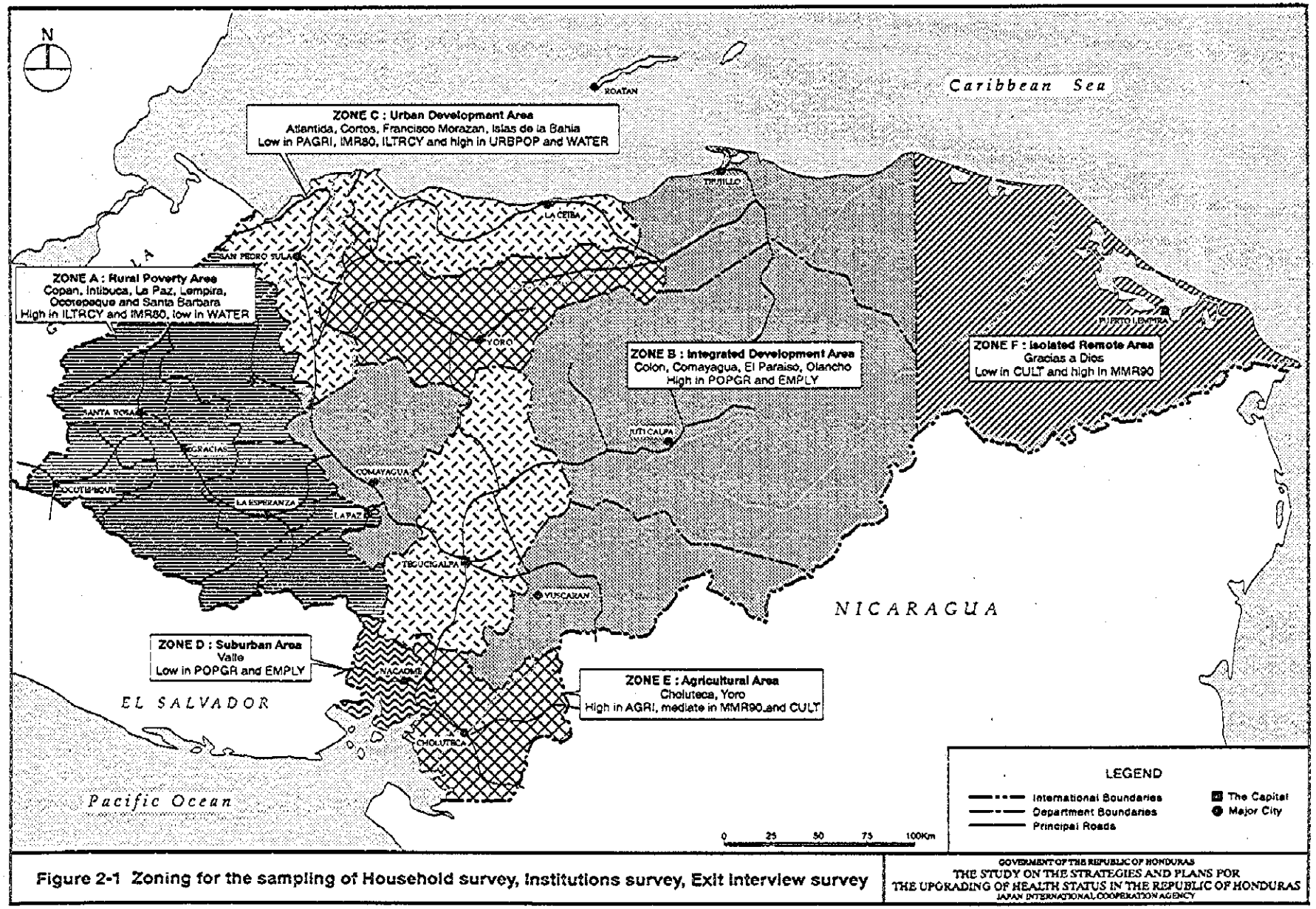

Figure 2-1 Zoning for the sampling of Household survey, Institutions survey, Exit interview survey

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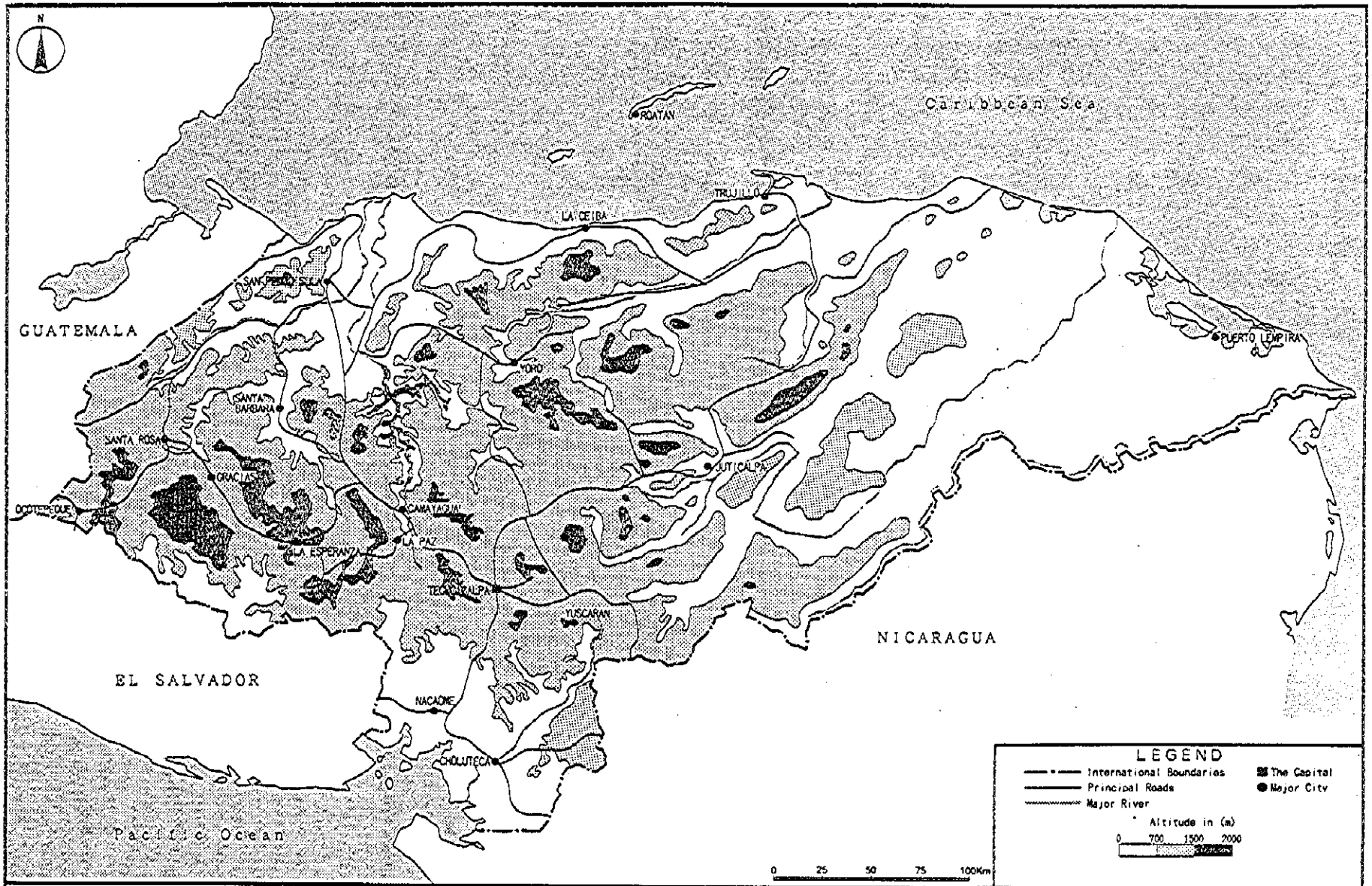

Figure 3-1 Topography

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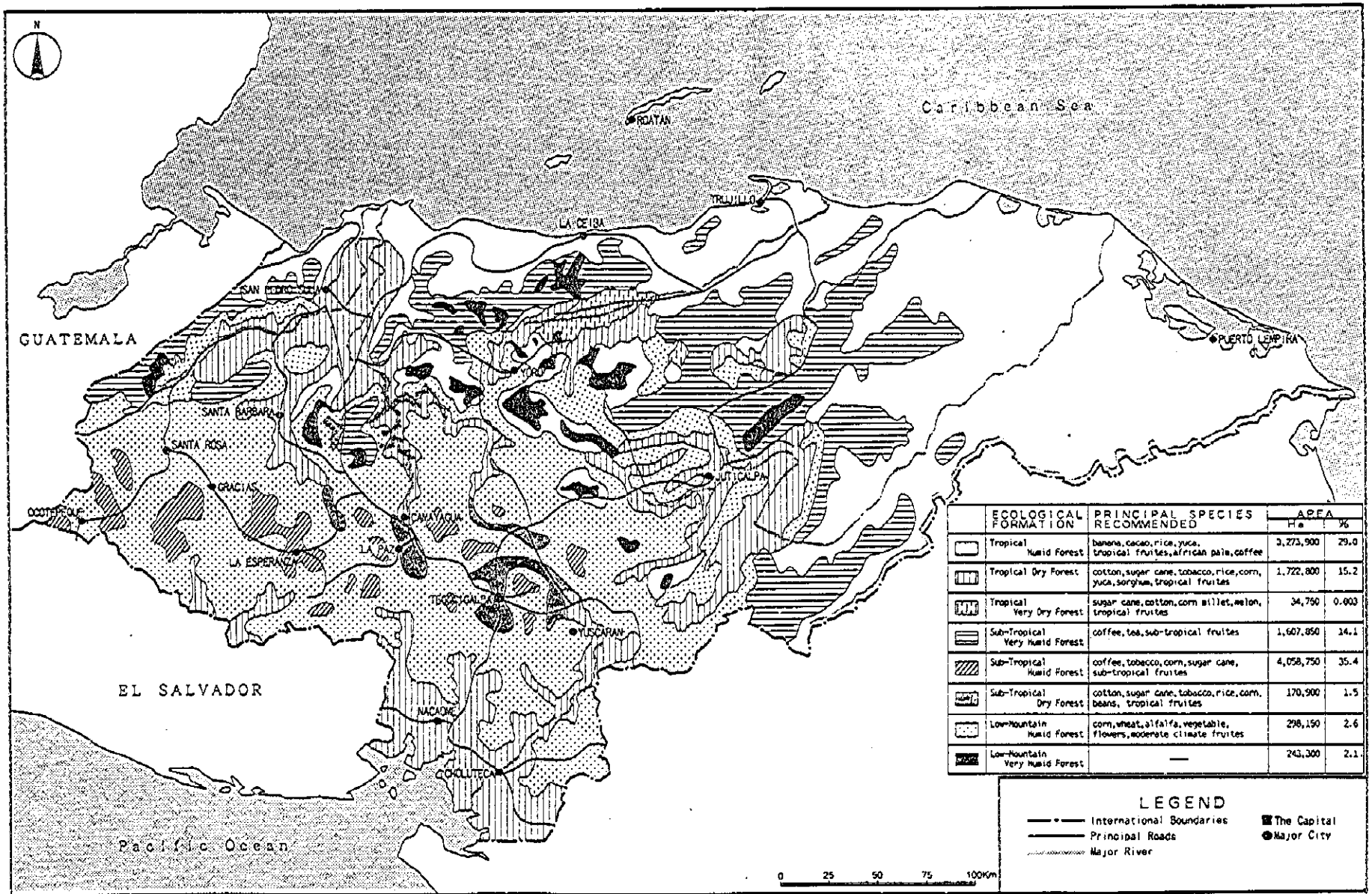

	ECOLOGICAL FORMATION	PRINCIPAL SPECIES RECOMMENDED	AREA Ha	AREA %
	Tropical Humid Forest	banana, cacao, rice, yuca, tropical fruites, african pale, coffee	3,273,900	29.0
	Tropical Dry Forest	cotton, sugar cane, tobacco, rice, corn, yuca, sorghum, tropical fruites	1,722,800	15.2
	Tropical Very Dry Forest	sugar cane, cotton, corn millet, melon, tropical fruites	34,750	0.003
	Sub-Tropical Very Humid Forest	coffee, tea, sub-tropical fruites	1,607,850	14.1
	Sub-Tropical Humid Forest	coffee, tobacco, corn, sugar cane, sub-tropical fruites	4,058,750	35.4
	Sub-Tropical Dry Forest	cotton, sugar cane, tobacco, rice, corn, beans, tropical fruites	170,900	1.5
	Low-Mountain Humid Forest	corn, wheat, alfalfa, vegetable, flowers, moderate climate fruites	298,150	2.6
	Low-Mountain Very Humid Forest	—	243,300	2.1

Figure 3-2 Ecological characteristic and agricultural potential

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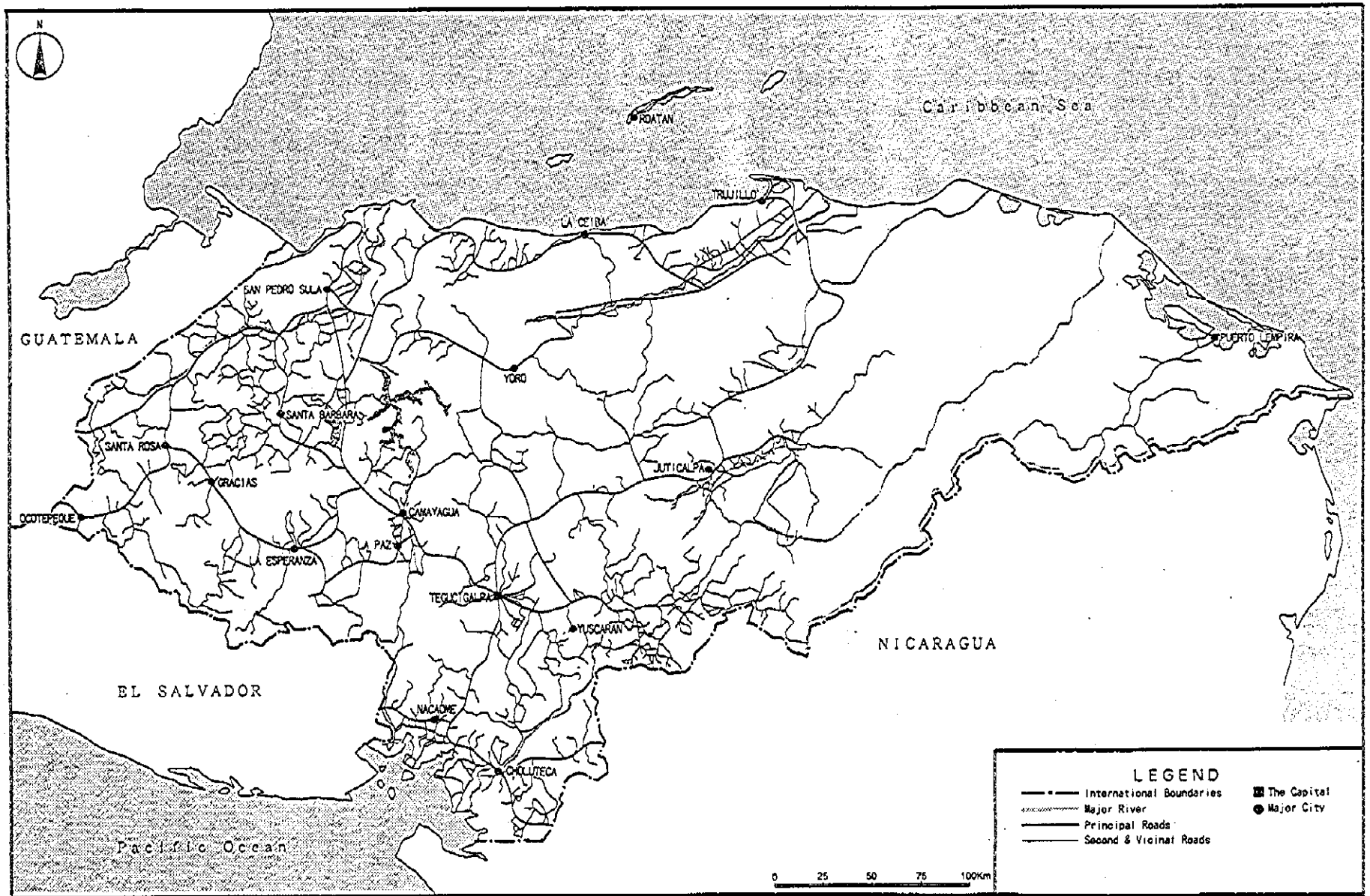

Figure 3-3 Road map

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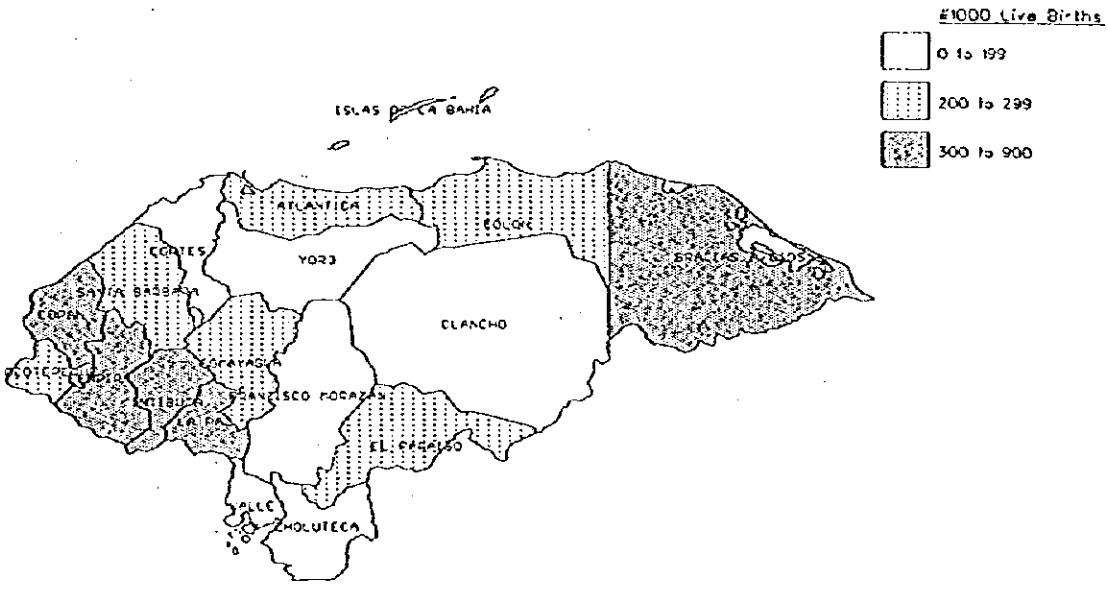


Figure 4-1 Maternal mortality rate by department

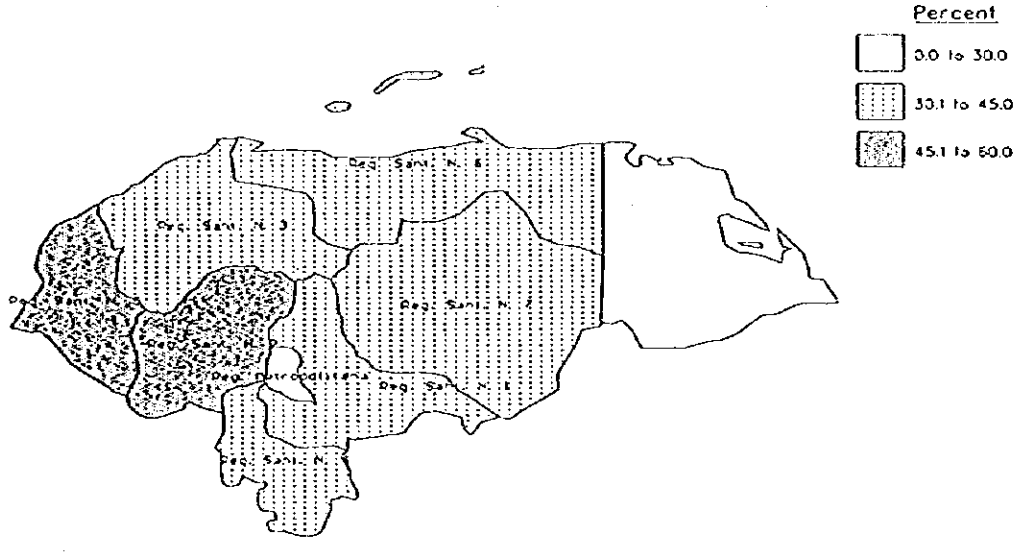
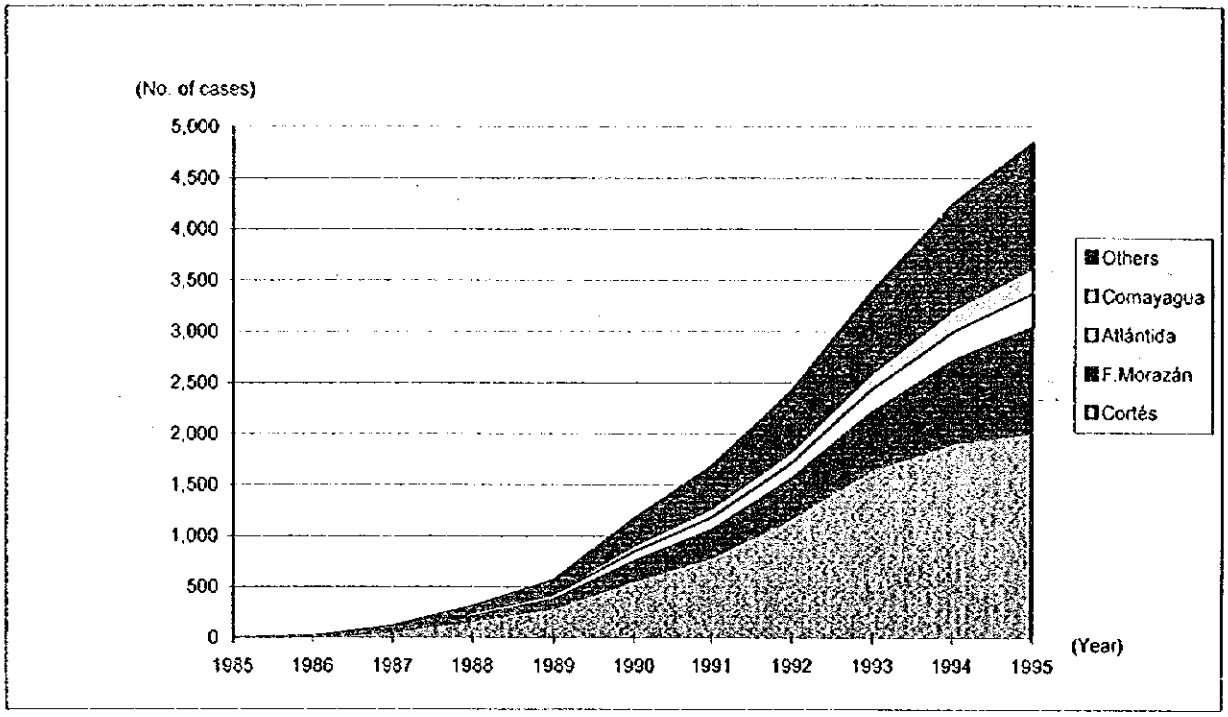
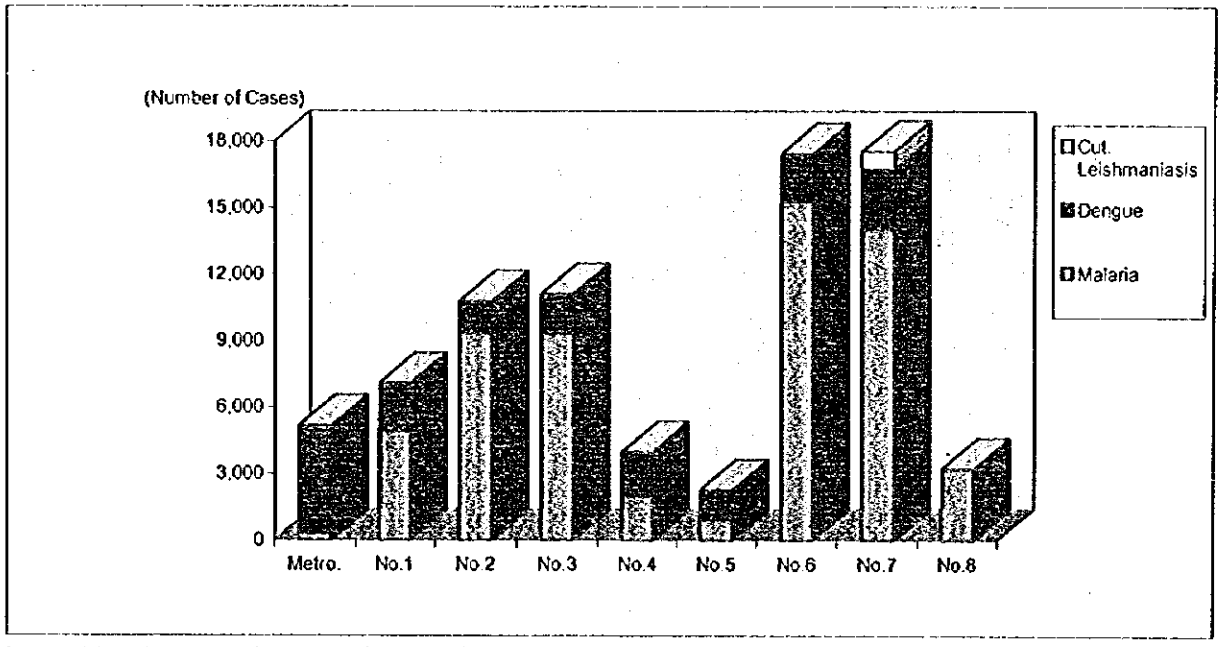


Figure 4-2 Levels of malnutrition in children under 5 by health region



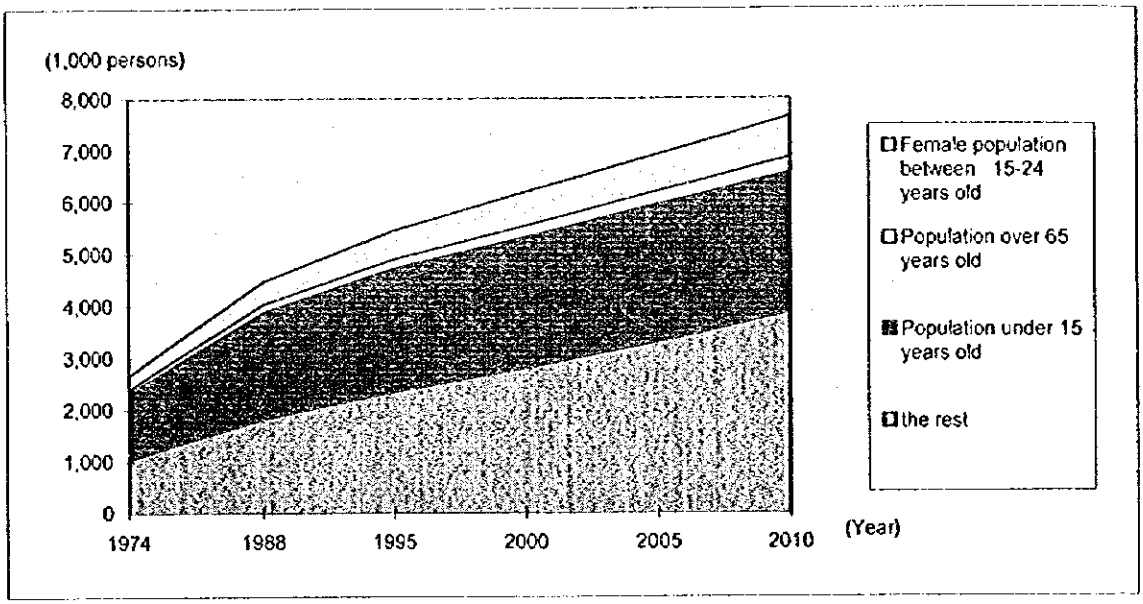
source: STD/AIDS Division, MSP, 1995

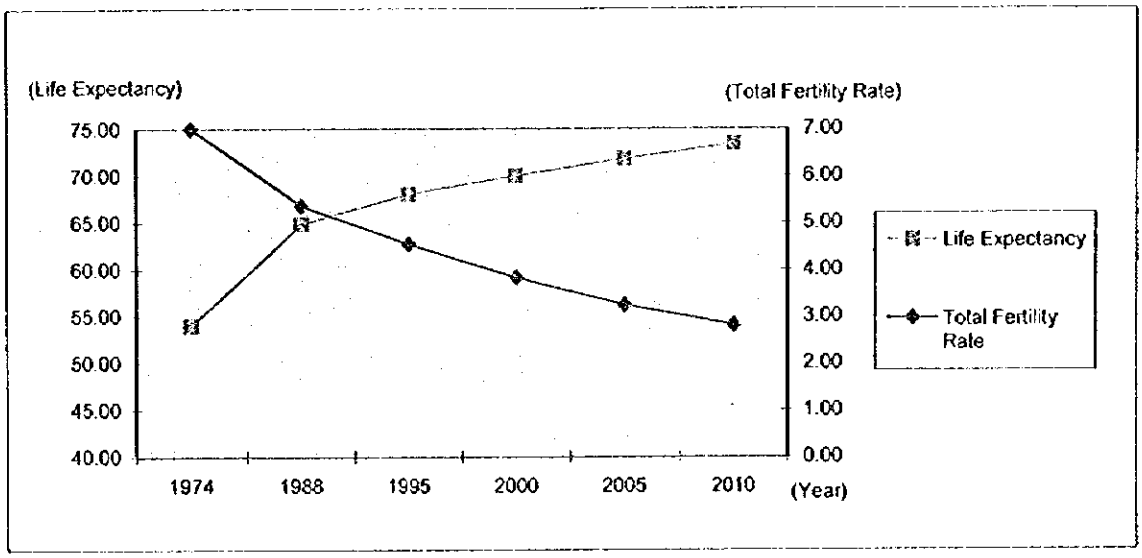
Figure 4-3 Number of AIDS cases in Honduras 1985 - 1995



Source: MSP -DETV - Telegrama Epidemiológico

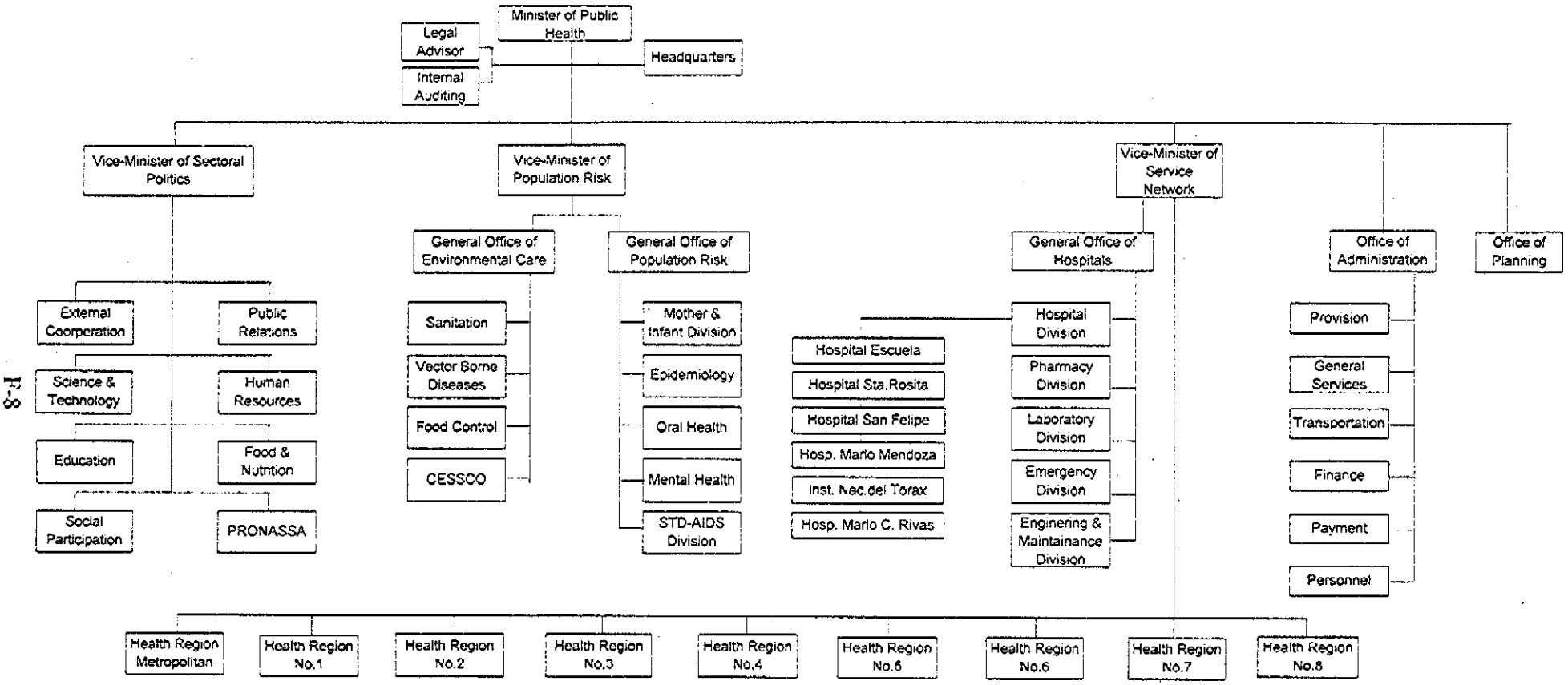
Figure 4-4 Number of cases of vector-borne diseases by region - 1995





Source : Proyecciones des Poblacion de Honduras por Sex y Edad 1988-2050, SECPLAN

Figure 4-5 Population projection 1974 - 2010



Source: Hospital Division, MSP

Figure 4-6 Organization structure of MSP - 1996

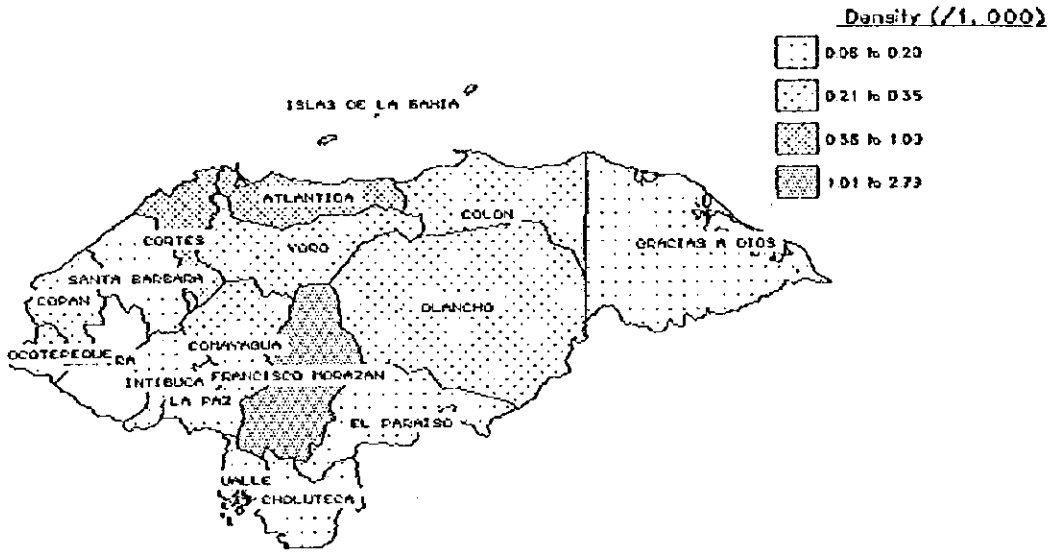


Figure 4-7 Distribution of general practitioners by department

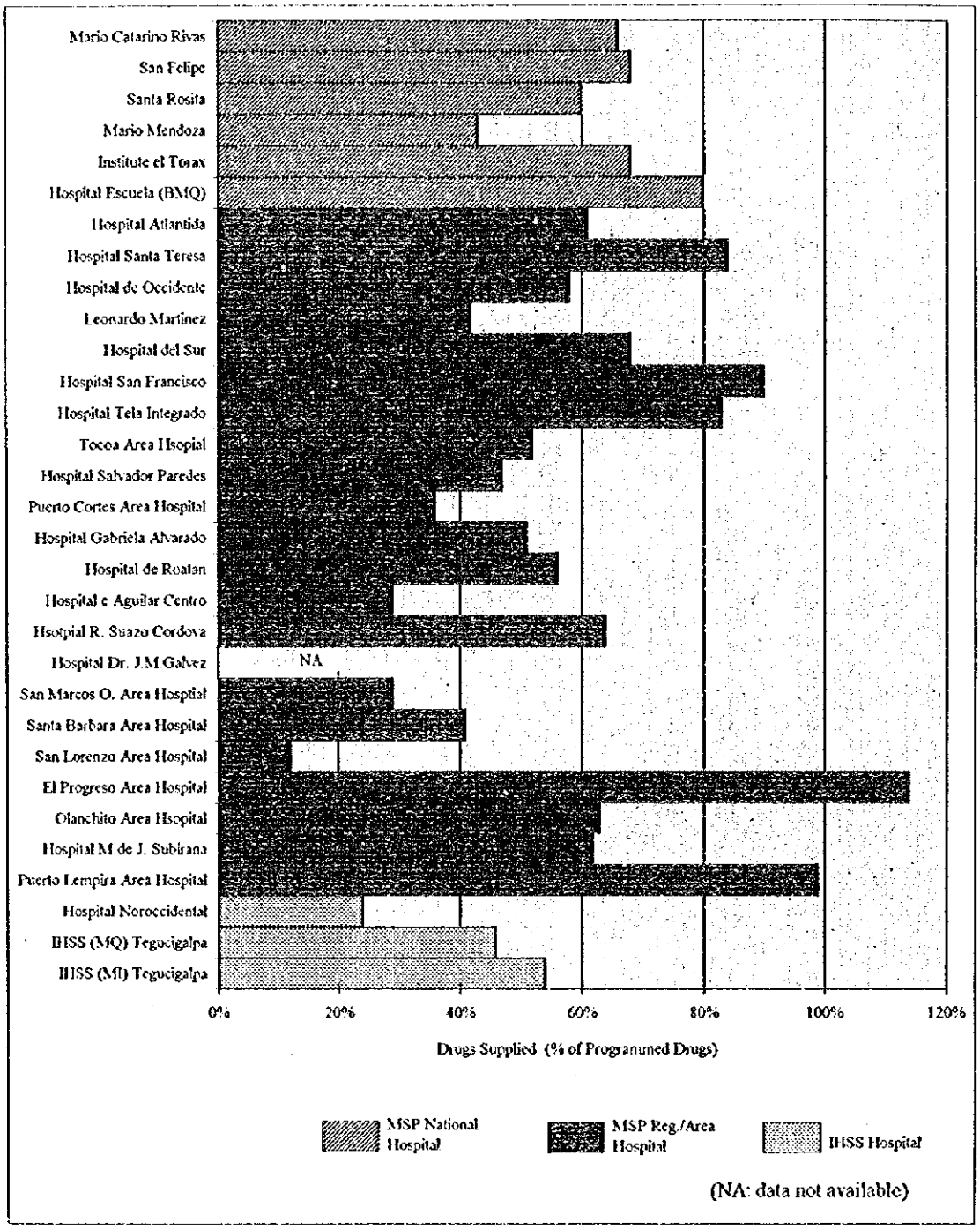


Figure 4-8 Proportion of drugs programmed in 1994 and supplied to the hospitals (30 products)

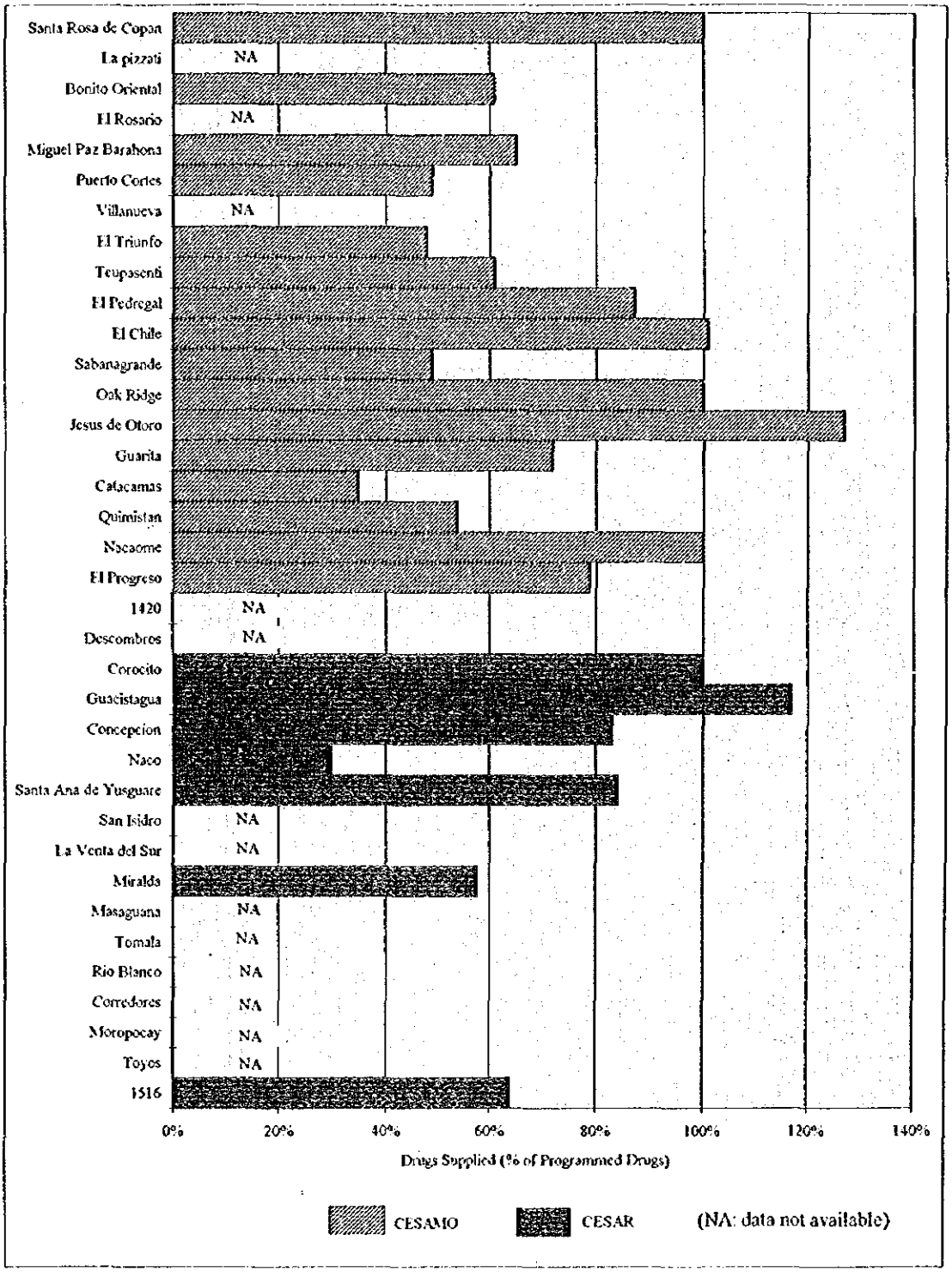
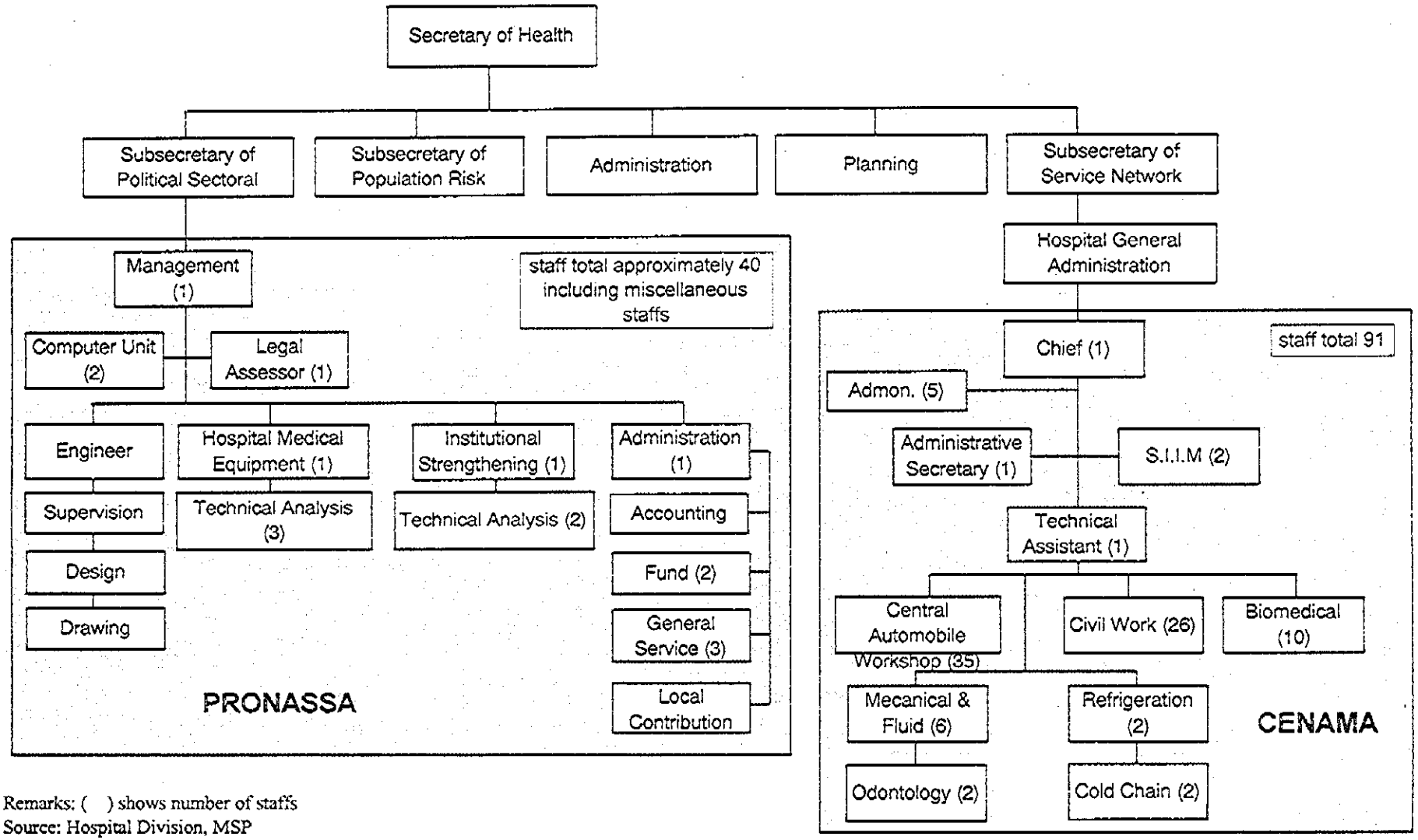


Figure 4-9 Proportion of drugs programmed in 1994 and supplied to the health centers (20 products)



Remarks: ( ) shows number of staffs
Source: Hospital Division, MSP

Figure 4-10 Organization of PRONASSA and CENAMA - 1995

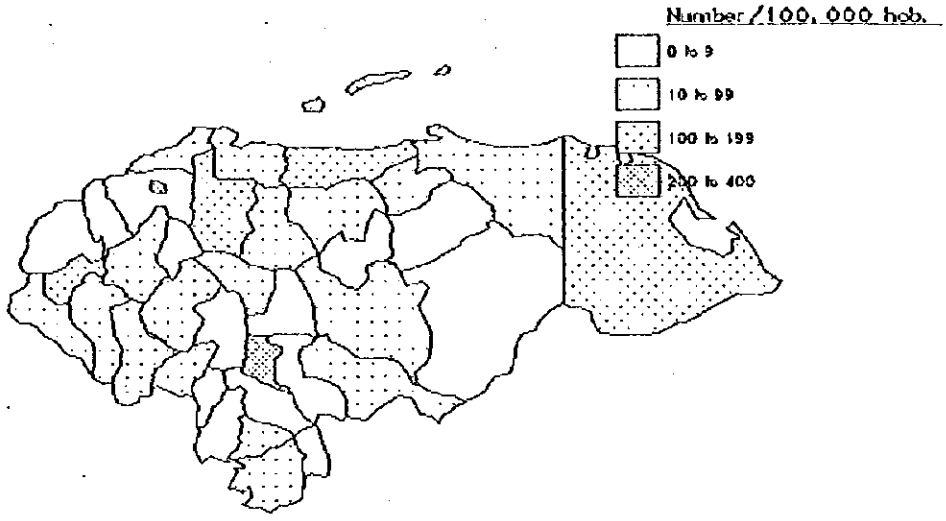
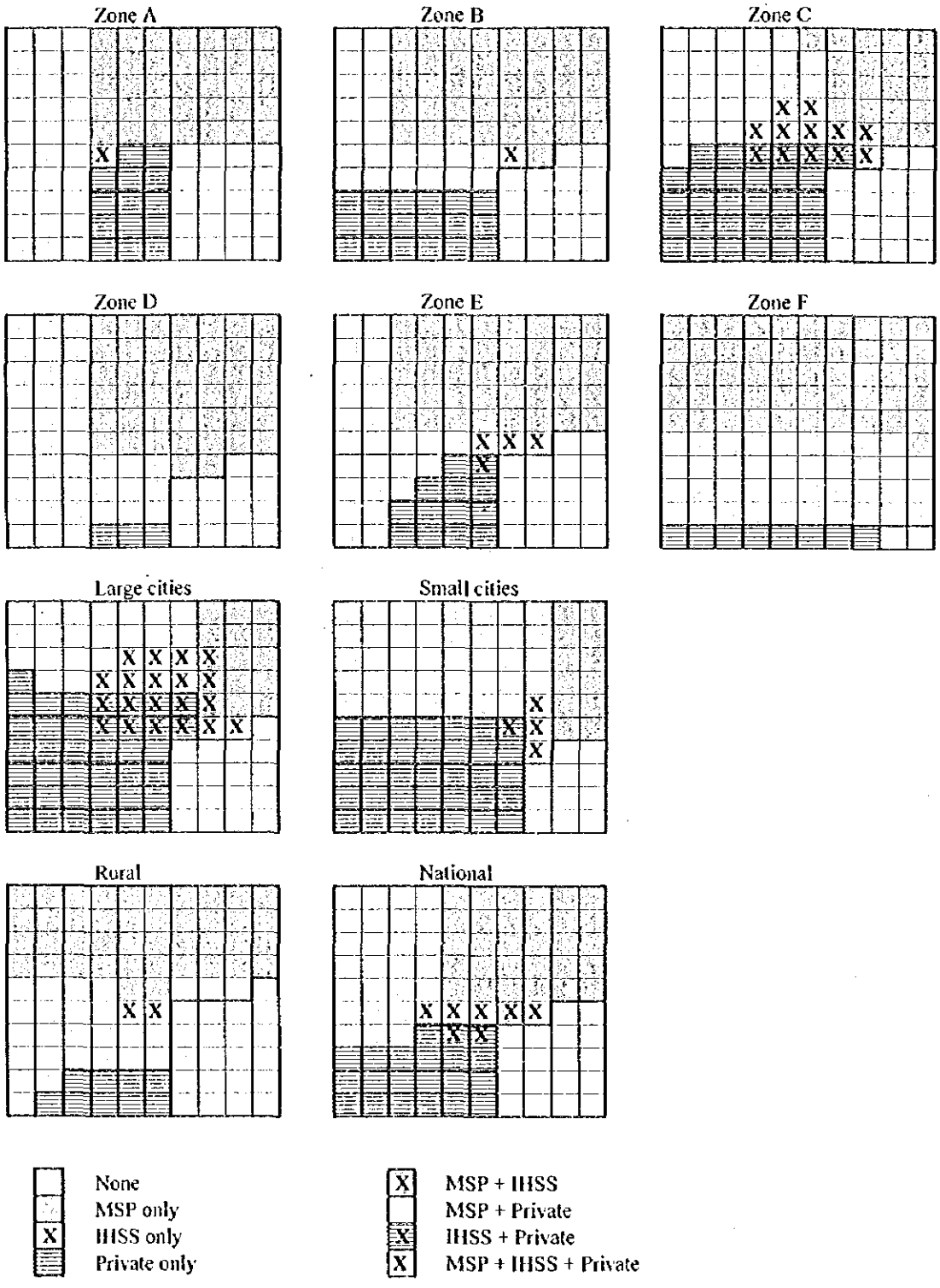


Figure 4-11 Hospital bed density by health area



Remarks: Private services include drugstores, NGO or private clinics and hospitals;excludes traditional healers.
Source: household survey - JICA/MSP, 1995

Figure 4-12 Proportion of household which utilized the services of at least one health provider during previous year of the survey - 1994

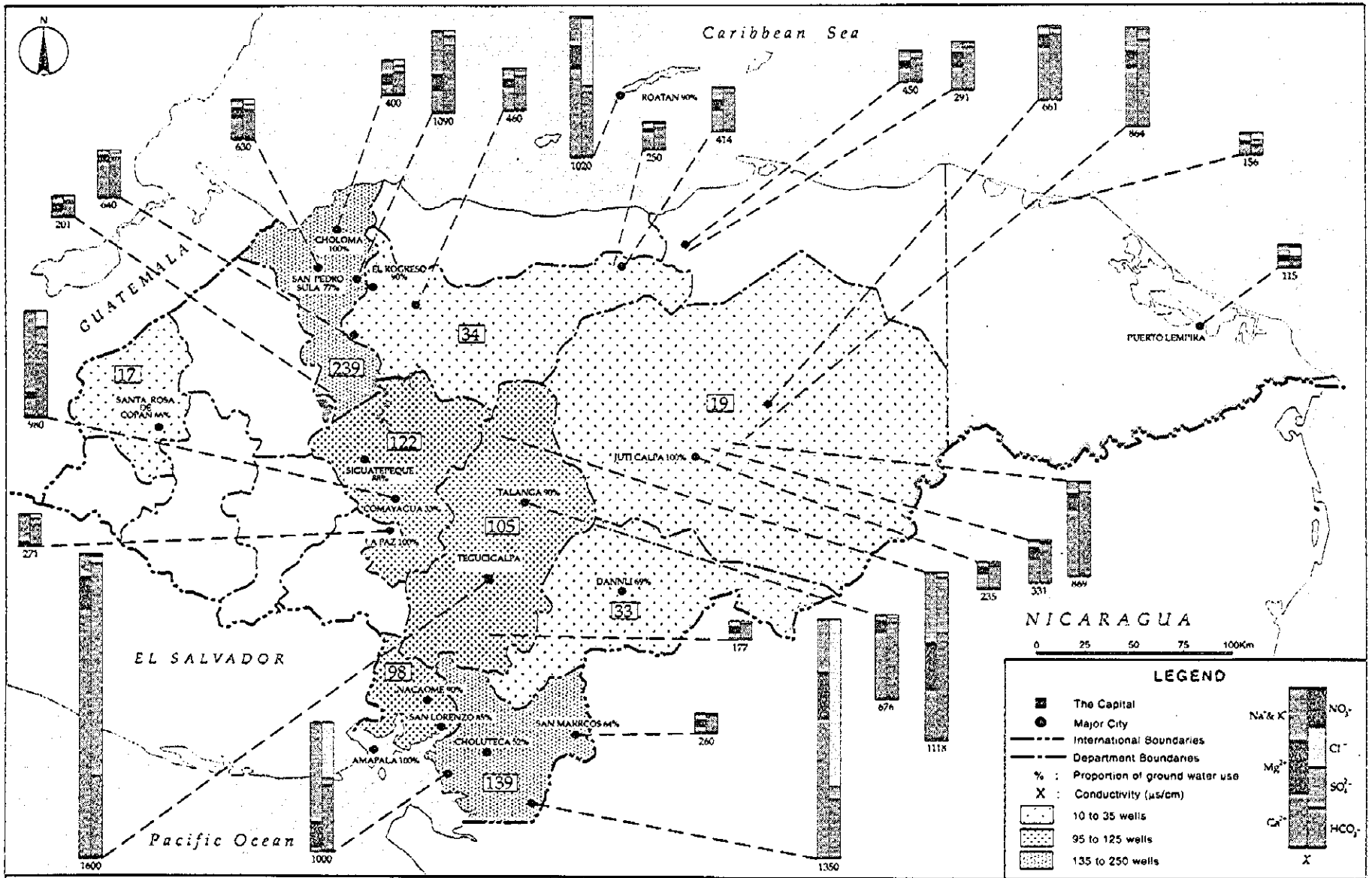


Figure 6-1 Quality of underground water and proportion of their use

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