demonstrate a significant potential for strengthening health sector resources. Although based on hypothetical scenarios, the study team believes that they represent a feasible range of future resources to support the recurrent costs associated with many of the recommended initiatives.

6.2. *Application of generic strategies to priority health problems*

The generic strategies mentioned above constitutes the backbone of the National Master Health Plan. However, it was recognized at the beginning that the application of these strategies cannot be uniform across the countries as the natural, socio-economic and cultural settings are different, as are the main priority health problems in each setting. In a similar manner, all priority problems cannot be solved with the same standardized set of generic strategies: some will rely more on health education community participation, while some will heavily depend on the improvement of the general contest and some imply significant modifications in the organization of health services delivery. The following sections proposes, for each priority health problem, a set of strategies that would have the best potential to contribute to the resolution of this problem: the strategies are grouped according to the same three dimensions previously considered.

It should be noted that, for reasons of epidemiological situation, access, implementation and cost-effectiveness, the Master Health Plan emphasizes health prevention and promotion rather than curative services, as apparent in the NMHP and in the model programs and projects. The improvement of curative services, however, needs to be considered, as an integral part of the strengthening of the health system. The following are examples of some aspects of the curative services that have been included either within the description of generic strategies or in the following description of the application of these strategies to the priority health problems:

- implantation of emergency clinics or integrated health centers with round-the-clock attention of emergencies/low-risk delivery, with laboratory support
- overall management of emergencies liked to violence and accidents
- improvement of problem-solving capacity in the area hospitals; use of mobile surgery system
- reinforcement of referral system

- management of AIDS patients, etc.

Finally, a number of specific programs were not considered as priority health problems during the early phase of problem analysis and will warrant further attention during implementation of the MHP. These are, for instance: oral health, tuberculosis, disaster relief and school health.

6.2.1 Infant Mortality Rate

In order to maintain the current trend of decreasing IMR, several sets of actions will have to be undertaken during the next 15 years: specific health sector strategies will continue to address the major existing causes of death, such as acute respiratory infections (ARI) or diarrhea diseases, while new or reinforced activities will contribute to reducing the impact of perinatal deaths. However, the sustainability of this trend also depends on the overall improvement in living conditions, with special emphasis placed upon the reduction of inequalities between urban and rural strata, educated and non-educated, and rich and poor groups among the population. Nation-wide surveys such as the National Epidemiology and Family Health Survey being conducted in 1996 will provide periodic opportunities to verify the impact of these actions.

(1) Context

Improvement in the living conditions have been shown to be strongly associated with lower infant mortality rates. In effect, adverse conditions, such as poverty, unemployment and geographic isolation for instance, constitute high-risk factors that increase the potential effect of personal biological risk factors, make more difficult the delivery of health services to these persons or groups and decrease their own capacity to participate in the improvement of their health status. The surveillance of these living conditions in the catchment areas of health institutions is thus very much relevant, in order to identify those population groups with higher risk for priority action and to detect opportunities for integrated actions that will also modify those conditions.

Inasmuch as malnutrition constitutes a frequent yet unregistered underlying cause of infant and child death, activities that improve basic food production, distribution and availability at household level will contribute to minimize those deaths. Yet, it should be noted that, in the first year of life, given the essential role of breast-feeding in infant nutrition, these activities will mostly act through better maternal nutrition. Adequate weaning patterns and food

preparation/ conservation practices are more important at this age of life, whereas the availability of nutrients, along with the incidence and severity of common infectious diseases will play a major role in later years.

By reducing the load of diarrheal and parasitic diseases, by increasing the opportunity for more hygienic behaviors and by reducing the mothers' workload, interventions aimed at improving water supply and disposal of human waste undoubtedly contribute to decrease IMR and childhood mortality rate as well as improving the health status of this age group.

(2) Household and community behaviors

The reduction of illiteracy contributes to the overall improvement of living conditions by providing better opportunities for employment, and to the reduction of IMR through a better understanding of the causal relationships of risk factors and diseases and better compliance with appropriate preventive and curative measure. This is especially important for mothers, as the main family caretaker. Literacy programs for adults should include health contents as selective learning materials.

Health education messages, focused at mothers, as the family caretaker, will improve participation in preventive activities (immunizations, prenatal care, etc...), facilitate the recognition of danger signs in young children, improve compliance with medical prescriptions and promote appropriate care and feeding practices, especially exclusive breast-feeding up to six months of age. However, health education also needs to be directed to other members of the family, including fathers, in order to promote responsible fatherhood.

The identification of infant mortality as a priority problem by the communities and their representatives (such as promoted by the DESAPER project or by the access process through the municipal health plans) will lead to locally defined interventions to resolve these problems and/or to a stronger, more motivated participation in these activities. This is especially important in communities with difficult access to institutional services, where more of the health burden will rely upon the communities themselves. Sustainable community participation requires, however, a strong component of institutional support and supervision.

The spacing of pregnancies and the reduction of early or late pregnancies has been shown to be quite effective in reducing the IMR and improving the health status of the child. Thus,

family planning services, as an integral part of reproductive health services, should provide the needed information and means to willing women and couples. In turn, the decrease in IMR and subsequent improvement of child survival will lead to a perceived need for smaller families.

(3) Health services delivery

Readily accessible quality health services are essential for the infant population group as their mobility is limited by logistical and cultural constraints, yet the motivation for looking for health care is higher than for any other age group. Improved access will need to be strengthened at all levels of care:

- community-based management of ARI and diarrheal diseases has been proven effective to reduce mortality in Honduras and in other countries and should be extended to all communities with difficult access to institutional services; growth and development monitoring at community level will contribute to a more integrated child care. Communal drug funds can also improve the availability of first-aid medicine in these communities with little or no access to health centers or private drugstores;
- institutional personnel will be trained, periodically evaluated and supervised on case management of the main childhood diseases (ARI, diarrhea, malaria), again within the framework of integrated child care (POSAIN);
- the expansion of the scope of work of selected CESAMOs will allow for a better and timelier management of emergency cases, while the adequate equipment and staffing pattern of area hospitals will contribute to decreasing perinatal mortality, as will implementation of maternal mortality-reducing strategies.

Even though vaccine-preventive diseases do not constitute now a major cause of death, the level of immunization activities should be maintained in order to avoid the reappearance of those almost forgotten diseases.

A number of features of the organization of child health services are important for their synergistic effect with specific technical interventions and should be strengthened and extended to all sectors and regions:

- an integrated child care approach based upon the monitoring of adequate growth and development and timely detection of problems, shared between the institution and the

community, will allow for a better understanding and management of the child's health problems both by his/her parents and by the health personnel; it will also reduce the number of lost opportunities for timely attention to the child him/herself or to other family's members;

- inter-sectoral cooperation at community level, involving health institutions, community groups and families, NGOs present in the area and other relevant institutions/persons will facilitate the local management of problems and solutions;
- the systematic surveillance and analysis of causes of deaths and corresponding risk factors at this same local level will reinforce this problem-solving capacity with respect to both biological and socio-economic and cultural risk factors. The systematization of enrollment and coverage assessment and monitoring through the community- or borough-based lists of children under 1 year (immunization and integrated health care), pregnant women and women in reproductive age will facilitate this analysis and the timely follow-up of high risk individuals and families.

Once the immediate management of the critically ill child with pneumonia, severe infection or neonatal disorder has been assured in the extended CESAMO, the MCH clinic or the area hospital, the development of adequate Intensive Care Units in regional or national hospitals will allow the survival of an increasing number of these children and will contribute an additional step in the reduction of IMR.

The implementation and sustainability of the activities mentioned above are especially dependent upon the availability of the required supplies at the primary health care level: timely provision of antibiotics and ORS in the communities and health centers, availability of well-functioning material for immediate management of the newborn and critically ill child at the CESAMO, MCH clinic, area hospital level (oxygen, resuscitation material, aspirators, X-Ray, etc...). In addition, periodic supportive supervision is essential in order to ensure credibility for the community health workers, and quality of care for all levels. It should be noted that the level of efforts required to provide adequate supervision increases with the remoteness of the health care facility, thus requiring a stronger commitment of resources from the institution.

6.2.2 Maternal Mortality Rate

(1) Context

As for IMR, the overall improvement in living conditions will bring along a decrease in maternal mortality rates. Especially important in this area are employment opportunities for women heads of households and adequate nutrition of pregnant and lactating women in order to avoid wasting due to repeated and close pregnancies.

Even though most Honduran laws stipulate equal status for men and women, some revisions plus a number of gender-oriented actions directed to actually promoting and maintaining this equality are needed in order to counteract prevalent cultural and social patterns of "machismo", irresponsible fatherhood and fatalism that so negatively impact on women's health.

(2) Household and community behaviors

As for IMR, MMR are associated with low levels of education. Thus efforts are needed to decrease female desertion in primary school and increase female enrollment in secondary and superior cycles. Again, themes related to maternal and reproductive health should be included in the curricula of adult education.

In addition to specific interventions aimed at promoting the knowledge of reproductive risk factors and the existence of corresponding health services, nation-wide action is needed within the concept of "promotion of a health culture" that would counteract the current social and cultural models that affect women's status. Within the health dimension, this action would promote women' increased control over their reproductive and general health and the shared responsibility of the whole family unit with regards to the same.

Given the high number of female heads of household and the high risk attached to this situation in terms of living conditions, small scale development projects focusing on home-based income-generation and skills improvement will address this population group as a priority. The involvement of women in maternal health related community activities is desirable, as they have higher stakes for the success of these activities, but the burden of other activities that usually fall upon them should also be considered .

Provision of family planning services, including information, method delivery and follow-up, has a direct impact on reducing risk factors by avoiding or delaying pregnancies in

adolescents, in older women or in women with other reproductive risk factors and by spacing births according to the woman's (or the couple's) wishes and possibilities. It is thus an essential intervention that has been proven to reduce maternal mortality. Continuous availability of methods and appropriate counseling, and specific strategies tending to obtain the partner's consent or participation in the choice and implementation of family planning are two critical issues that will need to be addressed. Both low-risk and high risk maternity facilities should also offer the option of post-partum or interval female and male surgical sterilization.

(3) Health services delivery

Access to quality health services needs to be improved at all levels, based upon the high risk focus and epidemiological data showing the major prevalence of maternal death during and shortly after delivery. Maternal health strategies will tend to increase institutional coverage of high risk pregnancies and deliveries while improving the basic delivery conditions for low risk pregnancies:

- continuous training and supervision of traditional birth attendants (TBA) in reproductive risk aspects will be an ongoing effort, tending to promote clean birth and safe placental delivery, as well as promotion, information and referral activities for prenatal care and family planning. The opening of community birthing homes can provide a better context for cleanliness and supervision, without sacrificing the traditional values attached to home delivery; it also allows for a more direct and concrete involvement of the community in the problem-solving process;
- the success of maternal inns is likely to depend upon the community-based mechanisms to provide family-care substitutes while high-risk pregnant women await for their delivery closer to medical resources; the multiplication of MCH clinics and extended CESAMOs, as well as the rehabilitation of low risk maternity in the two metropolis should contribute to increased institutional coverage, provided they offer culturally acceptable boarding conditions and real problem-solving capacity.

Similar program management strategies to those proposed for reduction of IMR should be applied to maternal health problems:

- the integration of maternal health within the overall concept of reproductive health, including prevention and treatment of AIDS/STDs, satisfaction of family planning needs, early detection of gynecological cancers, will lead to better user satisfaction with the service received and reduce the number of lost opportunities for timely attention. This implies the appropriate training and supervision of personnel and adequate provision of supplies and equipment at primary care levels;
- inter-sectoral cooperation at local level will increase coverage of activities (such as was done with the recent training of TBAs financed by FHIS and conducted locally by NGOs);
- systematic analysis of maternal mortality and community-level monitoring of high-risk groups and individuals through the listings methods will contribute to a greater local capacity for specific and timely problem-solving.

Preventive referral of high risk pregnancy to the appropriate institutional level is the key to avoid problems linked to the difficulty in transporting women in labor or during the immediate post-partum phase. When this is necessary, community-based mechanisms will play a major role in accessing the closest contact point with road system, where institution-based transportation, supported by radio communication, can take over.

The development/rehabilitation of low-risk maternity, MCH clinics and extended CESAMOs with a broader set of services, will decrease the burden of low-risk delivery currently assumed by referral institutions and increase the role of the later in appropriate management of high-risk pregnancies.

6.2.3 Malnutrition/food security

The analysis of the malnutrition problem is usually set up in four steps: food production, distribution, acquisition and utilization. The context-oriented strategies address the first three steps, whereas the behavior change and health service delivery strategies are aimed at improving the last one, although behavior changes can also apply to some aspects of food production an acquisition (for instance, promotion of family gardens).

(1) Context

Macro- and micro-economic strategies aimed at increasing the production of basic grains and other main components of the Honduran diet are the first step in securing availability of

nutrients both for self-sufficiency of rural producers and for consumption by urban dwellers. Food production is closely associated with alleviation of poverty, as the sale of surplus production can increase the income of poor families, whereas improved living conditions and higher income allow for the household's capacity to buy more and better food.

Access to land title and use, credit, fertilizers and technical assistance are needed for small producers, as well as improved market access for their products. At the other end, subsidized distribution and acquisition systems may guarantee an affordable food basket for non producers, especially in urban marginal areas. The balance between market price subsidies and price paid to producers, and its consequences on the available quantity of basic grains and other nutrients, the sale of those grains to neighboring countries and the subsequent needs for importation are important topics to approached in an integrated manner at political level.

(2) Household/community behaviors

Improvement in general literacy and food/nutrition education are essential to improve utilization of nutrients by the family. However, an initial impact of health/nutrition education interventions can be seen in the promotion of family, community or school gardens or small animal husbandry, in order to provide additional input of protein- or vitamin-rich food as a complement to basic grains. Educational themes for food utilization and nutrition include:

- promotion of breast-feeding (exclusive, then supplemented)
- appropriate feeding patterns, especially in small children, at-risk persons (pregnant and lactating women), and during or after diseases,
- role of nutrition in appropriate growth and development of the child and productivity of the adult,
- food preparation and conservation
- needed supplementation (iron, vitamins) or use of fortified foods, etc...

The education process has to be integrated into different contexts: formal education system (as one of the "transversal" axis), adult and young people education, agricultural extension activities, delivery of health services. The scheduled elaboration of nutritional guidelines,

based upon the nutritional value of locally available foods, should provide educators with the needed basis for those educational activities.

In rural areas, social participation mechanisms will provide a stronger linkage between poverty alleviation, food production and health improvement activities, whereas in urban marginal settings, they will be more oriented towards income generation projects for food acquisition and establishment of responsive marketing/distribution systems.

(3) Health service delivery

Nutrition-oriented health interventions begin with the implementation of effective growth monitoring system, taking into account the multiple factors affecting the child's growth, such as breast feeding, incidence and management of common infectious diseases, feeding and care patterns, availability of food, especially during the first year. This process of integrated child care ("Atención Integral al Niño") needs to be expanded at community level to the whole territory, as it promotes local mobilization for problem solving and interaction with the local network of health services.

Promotion and facilitation of breast-feeding is of utmost importance for this initial period of life, involving activities such as education and preparation during pregnancy; facilitation of breast-feeding initiation (early bonding, rooming-in, baby-friendly hospitals) and continuation (breast-feeding community advisors, problem solving skills); breast-feeding time and installations for working mothers, etc...

Food supplementation for vitamins and minerals (Vitamin A, iron) through mass campaigns or through clinic visits, should be continued as an immediate solution, while developing food fortification (Vitamin A, iron, iodine) to a satisfactory level in terms of consumption by high risk groups, the adequacy of nutrient intake from the regular food basket being a much longer term objective, to be reached through education and improvement in living conditions.

Supplementary food programs will still be needed for a number of children and mothers, but should not be considered as the only and systematic response to the detection of a failure to thrive.

6.2.4 AIDS/STDs

The long-term goal of AIDS prevention/control program is the stabilization of HIV prevalence in the general population of Honduras. Short- and medium-term objectives measure changes produced by the program, particularly behavioral changes for the health professionals or the sexually active population.

A comprehensive program for prevention of sexual transmission includes three key components: diagnosis and treatment of sexually transmitted diseases (STDs); increased condom availability, accessibility and use; and promotion of behavioral changes, among them mutual fidelity, condom use, improved STD treatment seeking, and postponement of initiation of sexual activity. Another key component of any prevention program is assurance of a safe blood supply; this component has received attention for a number of years with support from PAHO, and Honduras has an adequate safe blood supply system.

There is no vaccine or cure for HIV likely to be available in the next ten years. Thus prevention offers the greatest hope for containing the spread of the virus. Because of the relatively advanced stage of the epidemic in Honduras, care and management of the AIDS patient will be increasingly necessary, as will management of opportunistic diseases, such as tuberculosis and Kaposi's sarcoma.

In the short-term, the NGOs need to continue and expand their efforts to promote behavioral change with the highest risk groups. Both public and private sectors need to expand prevention programs among adolescents, focusing on promoting changes in high-risk aspects of the cultural environment of the youth (such as early initiation of sexual activity and multiplicity of partners for males), as well as their individual behavior. Both need to continue and improve their coordination efforts, focusing on leadership and coordinated coverage, not simply on exchange of information. Targeted efforts should be concentrated in the areas of highest seroprevalence because of limited resources. The public sector needs to improve its STD drugs supply and logistics. It also needs to expand education of the general public about modes of transmission to decrease rejection of AIDS sufferers, both for reasons of human rights, as well as to allow them to be cared for at home with less expense to the health care system.

In the medium term, attention to care and management of AIDS patients - their opportunistic infections and terminal stages - needs to expand. This will require expansion

of training for health care providers, families, NGOs and charitable institutions. Targeted prevention efforts by NGOs with ties to high risk groups will need to expand to new areas as surveillance data identify sites where the epidemic has expanded. While universal testing of all pregnant women is excessively costly, history-taking can identify those most at risk; a focused program to prevent perinatal transmission may be cost-effective. Operations research in this area should be conducted.

In the long-term, sub-regional coordination will be critical because of increasing cross-border travel by high risk groups. Comprehensive prevention efforts will need to expand both geographically and to a broader sector of the population. Societal changes in sexual mores that decrease risky behaviors will be key for the success of control efforts. Increased attention will be needed to prevent perinatal transmission and care for affected infants and AIDS orphans.

All these efforts will require expansion of training and IEC efforts. These should be concentrated initially in the areas of highest seroprevalence, particularly in greater San Pedro Sula, then expanding to the surrounding areas, the capital and other areas of greater infection.

(1) Context

Legal and institutional improvements are important for controlling the HIV/AIDS epidemic and its socially damaging sequel. Employers can legally dismiss a healthy employee who is diagnosed as HIV positive. As a consequence, people are much less likely to seek early diagnosis and will not, therefore, receive intensive counseling to prevent further transmission or care for themselves to postpone the onset of AIDS. Laws governing HIV positive persons in the workplace should be reviewed to create a more favorable environment for prevention.

Regulations concerning working hours should be modified where they are found to be incompatible with the treatment needs of marginalized populations at highest risk of contracting and spreading HIV, for instance commercial sex workers, many of whom work all night then sleep until mid-afternoon.

(2) Household and community behaviors

In Honduras, awareness of AIDS is virtually universal. However, there is very little understanding of modes of transmission and prevention. Education for the general population needs to provide information on these subjects. In addition, risk needs to be personalized (although not through scare tactics), which requires tailoring messages to specific audiences, using a variety of channels for delivering the message, and focusing on techniques of producing behavior change, not simply transmitting information.

The MSP has begun an important effort in developing a program for educating in-school youth, called JUPSA and should make every effort in the short-term to thoroughly pretest the curriculum and materials; education activities need to be undertaken as soon as possible in the regions of highest seroprevalence, and in the rest of the country afterwards.

There is a need for health education capacity building in the public and private sectors. The MSP's Education Division will shortly initiate coordination and strengthening of health education efforts in the HIV/AIDS field with support from USAID/AIDSCAP. However, since AIDSCAP ends in August 1997, it will not be fully adequate to meet the much larger needs of the Honduran program for improving health education in HIV/AIDS. The proposed AIDS Prevention and Education Center in San Pedro Sula could be a longer-term resource for this.

Community participation will be crucial to control of the HIV/AIDS epidemic and alleviation of its consequences. Control of sexual transmission requires changes in sexual behaviors that can be accomplished only through community support for changes in behavioral norms and reinforcement of positive individual behaviors. The private sector has already begun to play a role in caring for AIDS patients in their terminal stage who have been rejected by their families.

The public sector is often viewed as attempting to control rather that encourage and support private efforts. Thus it should change both its image and whatever reality may be behind this view, since it will receive greater cooperation with a supportive stance than with a controlling one. The private sector is generally able to react more quickly and with greater flexibility to address problems, and NGOs have the benefit of existing ties with high risk groups who are likely to be mistrustful of authorities. The public sector, on the other hand, has potential to have impact on a larger scale and has the medical expertise needed, access

to a proportion of the commercial sex workers through its sanitary control, and condom and drug logistics system for many components of the HIV/AIDS program.

The HIV/AIDS program of the MSP is developing better coordination with and support for NGOs working in HIV/AIDS by holding regional coordinating meetings with NGOs. It will soon start a joint communication program with the NGOs, sharing survey data on sexual behaviors of high risk populations, and developing small educational materials. Expansion of the public sector's ability and willingness to provide training and technical assistance for both public and private programs is needed.

Changes in community norms that negatively effect women's status and consequently their ability to participate in sexual decision-making are crucial to long-term efforts to control the HIV/AIDS epidemic. Machismo and its sequel must be changed and women's status must be improved; otherwise, women will continue to be without power to protect themselves from infection from their husbands. From nearly the beginning of the epidemic, one third of the persons affected in Honduras have been women, in contrast to other countries in the Americas where women have been a small (although growing) proportion of the infected population. The implication is that wives, mothers, sisters, daughters are placed at risk by their spouses in this type of situation, despite the woman's fidelity. Society must change to decrease acceptance of the man's at-risk behaviors and increase the woman's ability to participate in sexual decision-making.

Reproductive health programs in Honduras to date have contributed little to HIV/AIDS prevention, although both programs have several interests in common that should receive greater attention. Good reproductive health programs encompasses education and treatment of sexually transmitted diseases, which facilitate HIV infection. It includes societal and individual changes to increase women's role in sexual decision-making within the family. It also includes greater use of contraceptives than is prevalent in Honduras, knowing that condoms (and perhaps spermicides) contribute to both reproductive goals and prevention of HIV/STD transmission.

Condoms and spermicides are contraceptive methods that are particularly appropriate for youth because of the absence of perceived or actual risk to their future reproductive capacity. Young people in Latin America generally perceive the risk of pregnancy as more applicable to themselves than the risk of HIV infection, and accurately so. However, the

risk of HIV infection is much higher in Honduras than in the rest of the sub-region, and youth advocates need to create a culture of protection and prevention. All young Hondurans should be provided with an adequate level of basic information on HIV/AIDS so they know modes of transmission and prevention.

(3) Health service delivery

For prevention of transmission of HIV, Honduras needs to improve access to STD diagnosis and treatment, early and confidential diagnosis of HIV infection, and well as improved and expanded health education. The MSP has begun a program of upgrading its STD diagnostic capabilities in the four regions of highest HIV prevalence. This effort should be expanded throughout the country, after assuring that the four regions have achieved widespread and effective STD care.

The MSP should assure that all pregnant women have access to VDRL testing and receive counseling or history taking to assess the probability of HIV infection. A pregnant woman needs access to testing when she and her health care provider believe there is a probability of infection and the woman so requests. Pregnant women identified as being infected with HIV should have access to counseling and drugs that lower the risk of transmission to the unborn infant. While these drugs are expensive, they cost less than the care that the child will require if born infected by HIV.

The MSP also needs to improve access to confidential HIV testing, especially in areas of high seroprevalence so that people who suspect they may be infected can be tested and receive counseling to prevent further transmission of the virus.

In parts of the country most affected by the epidemic, an increasing number of AIDS patients, either symptomatic or in terminal stages, will need access to care and advice on care at home. The costs of hospital-based treatment of AIDS patients threatens to overcome the public health system in the early part of the next century. Sophisticated anti-viral drug therapies, such as AZT, that costs an estimated US$ 5,000 annually per patient, will be outside the budgetary capabilities of the health care system for a long time to come. The MSP will need to work with the churches NGOs and community groups willing to work on home-based and hospice care of AIDS patients to assure that they have the proper technical skills for palliative terminal treatment. Although it is not recommended that a specific AIDS ward be open in all MSP hospitals, this institution, as well as the IHSS, will need to

maintain professional and institutional capacity for up-to-date medical management of AIDS patients, at least in San Pedro Sula, Tegucigalpa, and maybe Comayagua and La Ceiba, so that those patients who do have access to treatment through public, private or subsidized channels receive appropriate management and that institutions receive technical support for patient evaluation and short-term therapy.

The HIV/AIDS sentinel surveillance system of Honduras suffers from late- and under-reporting, a situation that prevails throughout the region. Sentinel surveillance is important not only for describing the scope of the epidemic, but more importantly for planning the prevention program. Honduras could benefit from technical assistance, training and equipment for the sentinel surveillance system.

The reference system for STD and HIV testing and for care of the symptomatic patient needs improvement. The MSP is establishing centers of excellence and training for STD diagnosis and treatment in four high risk Health Regions. These centers should be made fully functional and effective, before covering other regions. Greater San Pedro Sula may need a second excellence center. Honduras must also develop reference sites for care of AIDS patients and training of families, either in the public or the private sector.

The MSP needs to assure an adequate supply of STD drugs and condoms throughout the system for prevention of HIV transmission. It also needs to work with the private sector to assure that their HIV/AIDS prevention programs also have an adequate and regular supply of condoms. Although international donors have provided large quantities of condoms to date, the MSP should begin to include a line item for condoms in its own supply budget, as both a gesture of cooperation and as a hedge against the day that condoms might not be supplied by international donors. The MSP should seek technical assistance in the short- and medium-term to acquire and improve skills in condom forecasting and in the process for purchasing condoms on the open market. The MSP should seek to make the technical assistance received in the past for improving its supply system more effective so that changes are sustained by the system. The MSP also needs to assess what medications should be available in limited quantities within the public health system for prevention of perinatal transmission of HIV.

The principal areas of expertise that need to be strengthened are: behavior change communication, diagnosis and treatment of STDs, condom and STD drug logistics, home-

and community-based care of AIDS patients, and a variety of specialized skills around education and counseling. The geographic focus of human resource development for HIV/AIDS prevention should be on the areas of greatest infection.

Prevention programs, such as control of HIV/AIDS, are difficult to finance. However, the medium- and long-term consequences of failing to implement an effective prevention program will be catastrophic in human and economic terms. The Honduran government, fortunately, has been committing resources to the effort for several years, and the municipality with the greatest problem, San Pedro Sula, has devoted a substantial amount of these to HIV/AIDS. The Municipality expects to assume all costs for the AIDS Prevention and Education Center in that city with assistance from international donors and local industries. Decentralization of health care funds from the national budget will help to concentrate resources in the areas of greatest need for the HIV/AIDS program.

A number of donor agencies have financing for an HIV/AIDS program in Honduras. The U.S. government, through the AIDSCAP project, is supporting a substantial program in the public and private sectors. PAHO continues working in Honduras with safe blood supply and support for a variety of small-scale training programs. The United Nations and the World Bank are also represented among the chief donors. Several European donor agencies have expressed an interest in providing funding, but they lack the staffing to assist NGOs to develop proposals, and NGOs lack the skill to do so. IPPF, through its Honduran affiliate ASHONPLAFA, has developed small-scale counseling for women to increase their participation in sexual decision-making.

6.2.5 Vector-borne diseases

Strategies dealing with control of vector-borne diseases cover the three broad dimensions considered in the conceptual model. It is especially important to locate these strategies within the overall concern about environment management and its impact on health status.

(1) Context

Overall improvement in living conditions, and more specifically improvement in housing materials and maintenance as well as adequately protected structures for water supply, storage and disposal in the houses will contribute to the reduction of breeding sites for trypanosomes and dengue vectors.

Optimal use of pesticides in agriculture contributes to reduction in vector resistance to the products used. Site-specific operational investigations and close coordination between Sec. RRNN, MSP and pesticides producers/distributors will be required to obtain this optimal utilization.

Apart from home-level water management, there is a need to include a vector control component in environmental impact assessment of all projects involving water management at community level or above, with special attention to dams and irrigation projects which modify the existing conditions for vector breeding sites.

(2) Household/community behaviors

Prevention-oriented household and community behaviors are an essential component of the vector control strategies, as they impact upon several steps of the vector-parasite-host interaction:

- basic conditions and maintenance of housing (screens for mosquitoes, filling of crevices for trypanosomes)
- water management: tanks, sinks, water piles, disposal of waste water
- disposal of solid waste (cans, pneumatics, etc..), both behaviors contributing to the creation and maintenance of breeding sites for mosquitoes,
- personnel protection against vector (clothing, mosquito nets, living habits)
- patterns of care seeking for vector-borne diseases.

Appropriate behaviors can be promoted through health education activities both at community level and within the health care institutions or other settings, by the vector-control staff (institutional or volunteer) or by other health/environment staff. Nation-wise clean-up campaigns should be seen as booster activities for this sensitization to the vector-control problem, with an emerging level of consciousness leading towards permanent preventive practices by the population.

In the process of going from a curative, treatment-oriented, towards a preventive, environmental control focus, these activities should become the responsibility of the communities themselves and of their organized representations, which implies a major role of municipalities and "patronatos" (refer to the concept of "healthy municipalities" and to the health promotion culture). This appropriation of vector control management will require

the transfer of knowledge and resources to the community, with a persistent support from the central and regional governments for large-scale, heavy technology activities, for procurement of necessary inputs and for diffusion of promising local innovations and strategies.

(3) Health services delivery

Diagnosis of vector borne diseases and presumptive treatment for malaria cases will be provided by institutional personnel and by voluntary collaborators. Treatment distribution will also be assured by small stores selling medicines, communal drug funds, private clinics and school teachers, in order to increase coverage.

From an organizational point of view, this emphasis on environmental control has been translated into several strategies developed by the Vector-borne Diseases Control Division of the MSP, which should be supported and implemented over the following years:

- development of an information/surveillance system based upon risk factors (not only diseases), including community-based indicators such breeding sites-positiveness index, house colonization index, coverage for drinking water, household wall condition index, etc.. in addition to the already well known incidence and mortality rates;
- network-based computerization of the information system in order to provide timely analysis of epidemiological patterns of vector-borne diseases; local capacity for situation analysis will also be strengthened through training supervision;
- provision of drugs, insecticides and heavy equipment by the central level of the MSP; laboratory inputs, quality control and supervision from the Central MSP Laboratory;
- cross-border coordination

The retraining of Environmental Health technicians through distance and worksite methodologies will include vector-control contents such as use and maintenance of insecticide aerosol equipment, entomology, risk factor assessment, control of businesses producing, storing or using insecticides.

The regional MSP teams will organize the sale of services using heavy equipment in order to modify the environment and decrease the risk factors, through agreements between the MSP and client institution (municipality or else).

6.2.6 Access to water and basic sanitation

This topic has already been treated under section 6.1.1.(3)

6.2.7 Accidents

(1) Context

Legislative and administrative action is essential in this area: systematic enforcement of transit laws, especially those related to driving under the influence of alcohol and periodic vehicle technical review (as a number of accidents are related to lack of circulation lights or poor state of vital parts such as brakes, for instance). Recent efforts have been made for improvement of road signs, and should be maintained. More preventive infrastructure (crossing lights, pedestrian bridges) is needed, but must be implemented along with drivers and pedestrians education.

The improvement in living conditions can reduce the opportunity for children home accidents, especially those related to fire injuries (open fires, oil lamps and candles) or water accidents (protection of water sources and tanks).

(2) Household and community behaviors

All contextual factors targeted in the paragraph above must be accompanied with appropriate education: consequences of drunken driving, excessive speed or other high-risk behaviors demonstrating no respect to transit laws (both by pedestrians and drivers); of failure to properly maintain one's vehicle. Adverse living conditions, however, can make more difficult the adoption of safe behaviors: for instance, the lack of family or community support may imply that both working parents or single mothers have to leave their young children at home, thus at risk for home accidents. Activities aimed at strengthening social participation, solidarity and awareness may have some impact in this respect. Educational themes related to road and home accidents should be included in both formal and adult education contents.

(3) Health service delivery

Access to emergency health services, and improvement of referral system and transportation are the key to medical management of accidents: the availability of emergency services on a 24-hour-per-day basis in selected health centers has been proposed as part of the concept of Integrated Health Center. The main application of the concept is to be found in the project currently prepared by the Hospital Division with regards to Management of Emergency Care along the Tegucigalpa-San Pedro Sula axis. This project, which takes into account the specific epidemiological profile of the urban corridor, and the special management needs of emergencies linked to accidents and violence, plans for the construction of:

- one emergency block in each of the main hospitals in Tegucigalpa (Hospital Escuela) and SPS (Hosp. M. C. Rivas),
- three peripheral emergency clinics in each of these cities
- a smaller emergency hospital in Siguatepeque and two Red Cross-manned health post in Comayagua and Santa Cruz de Yojoa, the transportation between those elements of the system will be assumed by the Red Cross.

Other elements in the emergency management of accidents include the setting up of integrated health centers with emergency capacity in areas currently without area hospital, the strengthening of orthopedics/traumatology resources in hospitals along the road network, and the maintenance of an adequate blood supply system. The management of accidents related to professional diving needs to be maintained and improved (through availability of decompression chambers and training on their appropriate use), as long as this type of activities constitutes a significant source of revenue for the coastal population.

6.2.8 Violence

(1) Context

Regulations related to the protection of women and children, as proposed by the Family Code and by the more recently approved Childhood Law ("Código del Niño"), will need to be developed and enforced, an area where the health sector has to work jointly with the legislative and judiciary powers, the specific defense committees (CDM, Asociación Visitación Padilla), concerned NGOs and international organizations. Another major area of concern is the legislation related to ownership and use of firearms, where a stricter control needs to be exercised, given the large number of weapons available in the country.

On the other hand, violence also has its roots in the social context of the country and a key element to decrease in the long term the current levels of violence linked to common delinquency, will be to bridge the gap between rich and poor and offer the disadvantaged members of the society better perspectives for employment, income earnings and quality of life.

(2) Household/community behaviors

The reduction of violent stereotypes in all aspects of social and cultural relations, especially with regards to mass communication media, and the teaching of peaceful conflict resolution skills, should be a part of the promotion of the health culture, helping to decrease extra- and intra familiar violence, including sexual violence against women, adolescents and children.

(3) Health services delivery

The health sector needs to create/increase links at local level with the organizations concerned with protection of women and children, in particular with counseling centers, in order to provide medical support for the timelier diagnosis of violence. Appropriate training for health personnel in recognition of signs of violence should strengthen this support. This training should be available in particular in the emergency centers, coupled with initial psychological and counseling management of both victims and perpetrators, and linkage with local authorities, in order to prevent further violence.

The development of orthopedics/traumatology, gynecology and psychology abilities at area and referral level hospitals will improve the management of more severe forms of violence. The management of children in the street and from the street by government and voluntary agencies will have to be maintained until more long-term, social and economic solutions are found. Psychological counseling and AIDS prevention skills are needed by medical staff working in these settings.

6.2.9 Morbidity/mortality from chronic-degenerative diseases

(1) Context

Improvement in living conditions will in the long run increase the morbidity from chronic degenerative diseases, through an increase in life expectancy. The main health interventions related to context will deal with environmental protection and prevention of water and food chemical contamination, including legislative, regulations and implementation aspects.

(2) Household/community behaviors

Given the high costs associated with curative management of cardio-vascular and degenerative diseases, the public health approach to this problem needs to emphasize prevention and health promotion. Thus, prevention of chronic diseases and promotion of healthy lifestyles should be an integral part of the new health culture communication, including:

- healthy nutritional patterns
- promotion of exercise
- reduction in smoking and alcohol intakes
- stress reduction

Obviously, some aspects of this approach are currently more relevant to the more affluent part of the society; however, as the epidemiological transition takes place, they will need to be applied to a wider share of the population, especially with regards to alcohol and tobacco use. In any case, community support and general improvement in future prospects in each person's life are important elements to support behavior changes in the long run. Finally, the health sector personnel and institutions should take a lead in practicing the values promoted in this respect, a first step being the actual implementation of no smoking campaigns in health facilities.

(3) Health services delivery

Initial activities in this area include training of hospital and health center personnel in risk detection and counseling, especially for staff working in urban areas. Some screening processes should be strengthened and systematized, in particular detection of overweight, high blood pressure and cervical dysplasias and cancers. This implies the availability of standard screening equipment (scales, sphyngomanometers) at all health facilities; technology and trained personnel (cytotechnicians); and treatment for positive cases (cardio-vascular drugs, gynecological surgery) to ensure the timely process of secondary prevention. Hospital teams will, in the long run, need to improve their skills, organization and equipment in order to manage more complex disorders, however at a much higher cost for the health system.

6.2.10 Environmental health

(1) Context

The main strategy in this respect will be the strengthening of SEDA in the health-related aspects of environment management. This would include activities such as:

- sharing bibliography, results of analyses and studies, conducted locally and internationally
- training of SEDA staff in health aspects of environment management,
- supporting the development and systematic implementation of a Health Impact Assessment module within the Environmental Impact Assessment procedure/instruments, in order to conduct a systematic analysis of health consequences of development/ industrial projects, with respect to water supply and sanitation, vector control, contamination of air, water and soil, occupational risks, access to health services, etc.

Also important is the elaboration/standardization/periodic revision of standards for use of chemicals in agriculture and industry, emission of contaminants, environmental pollution (noise, for instance), water quality, food hygiene: this process should include the revision of existing standards and norms in industrialized and developing countries, and a discussion with appropriate agencies, institutions or groups, including businesses, taking into account the balance between productivity, short-term costs and long term benefits of environmental protection. CESCCO and SEDA should play a major role in this process and the subsequent creation of a data bank on environmental regulations and standards).

The municipal management of local natural resources (which the municipalities claim as an equivalent to municipal management of financial or human resources) can improve rational use of the same, but needs to be considered along with nation-wise resource management and conservation, common management of shared resources (water, for instance) and solidarity with less endowed municipalities.

Integrated health/development projects at community or municipality level should include an emphasis on environment-conscious solutions/technologies, and involve women's participation in design and management, because of their vested interest in improving and maintaining living conditions: clean water and waste water management, waste disposal, household cooking, reliance on organic fertilizers, physical control of vectors, etc...

(2) Household/community behaviors

Environmental management needs to be included in specific aspects of health education (as an additional motivation to adopt behaviors that promote and conserve health; the emphasis will be put on time and financial savings, and long term health benefits). Within the formal education system (SEP), there is a need to coordinate environment and health curricula contents ("ejes transversales").

Among the positive aspects of using environment assets, the appropriate use of traditional herbal medicines as a substitute for, or in addition to, western-type medicines could be promoted (for instance, in the Lenca community in Yamaranguila).

(3) Health service delivery

The interventions in this sector include the incorporation of environment matters into health personnel's training, so that they can be resource people among the community with regards to health impact of environmental management.

As a first step towards environment management and as an example to the community, a simple but consistent management of garbage/ biological waste disposal at health center level should be implemented. The problem of hospital waste disposal by incineration or other methods and their respective impact on environment is now being discussed.

The capacity of CESCCO, as the investigative arm of the environmental health system, should be developed:

- a wider scope of work/systematic plan of action for investigations should be elaborated, with effective participation of interested agencies such as SEDA, MSP, MTPS, COHEP;
- regionalization should be considered, with at least one additional office in SPS, depending on funding for heavy equipment and staff; eventually offices in Choluteca, then Juticalpa and Santa Rosa).

6.2.11 Occupational health

The long term goal of an occupational health program is to ensure that productive work is a source of development and achievement, not of diseases and disability. Interventions in occupational health can be considered in different and complementary steps, according to

the level at which the intervention addresses the problem (i.e., using the epidemiological vocabulary, from primary prevention to secondary prevention, treatment and rehabilitation):

- environment modification, which basically removes the source of the problem,
- worker's protection, somehow less efficient since it involves workers compliance with protection systems,
- environment monitoring, in order to detect possible risks,
- worker (and employer) education
- medical intervention (systematic or random screening and check-ups, treatment and rehabilitation of work-related injuries/diseases),
- government regulations through laws and enforcement mechanisms,
- elaboration/diffusion of exposure standards.

The following section incorporates and builds upon some of the strategies and activities developed in the Honduras Workers' Health Plan ("Plan para la Salad de los Trabajadores de Honduras").

(1) Context

Periodic revision of the Labor Code ("Código del Trabajo") and related laws and regulations (for instance "Ley de Sanidad Vegetal" on use of pesticides in agriculture), in order to adapt them to existing and emerging working conditions and to internationally acceptable standards. There is a need to define mechanisms for enforcement of laws and regulations, taking into consideration the same factors as for the discussion of environmental protection at large, that is, productivity, short-term costs and health benefits.

Institutionalize the functioning of Hygiene and Security Commission on worksites: the commissions can be internal for large businesses, or could have a municipal starting point, covering several small related businesses in the municipal jurisdiction. Commissions should involve representatives from employees, employers and MSP/MTSP health authorities (as technical advisors).

(2) Household/community behaviors

Workers and workers representatives need to be trained in occupational health. Training should include some practical applications on the worksite, and start with selected workers (possibly union representatives) who will represent them in the H&S commission, and then

organize/coordinate training of other workers, both on health risks and risks prevention (including design of, and compliance with personal health protection measures).

The development of H&S commissions will provide a forum for constructive discussion between employers and employees, which should supplement the legal aspects of occupational health.

Within the decentralization process and local programming strategy (access projects), municipal health plans should consider aspects relevant to the worksite. Municipalities could trigger the creation of H&S commissions, especially for small businesses in a given branch. The health area can play a leading role in sharing concerns and solutions between similar worksites in different municipalities; also in promoting investigations related to gender issues and workplace (for instance, reproductive health) in the "maquilas" area.

(3) Health services delivery

The main possible strategies in this area include:

- Expansion of IHSS coverage to smaller businesses, through decentralized schemes with outside contracting of health services (see health financing section). This includes the extension of the system of "salad-empresa", in order to facilitate access to general health services and bring the services closer to the origin of occupational diseases. Physicians or nurses in the worksite need to receive training on risk assessment and prevention.
- Organize a systematic framework for occupational health in Honduras: census of type of work and business, type of jobs within business, specific exposures and risks by branch, health impacts, to be gathered in a data bank accessible to government institutions, employers and workers associations, health personnel, municipalities and NGOs.
- Develop a unified system for report/investigation of work-related disease or accident, to be used by the MSP, the IHSS and the MTPS in order to develop an integrated surveillance system, including detailed job description and characteristics, so that individual reports can be linked to data bank above.
- Realize worksite investigations according to findings from information/ surveillance system: these investigations can be used for revision of laws and standards, discussions with employers and employees on specific measures, training of relevant

personnel. Ad-hoc coordination mechanisms can be set-up between MSP, MTPS (which could provide the main administrative/human resources input) and CESCCO (as the investigative arm). The systematization of investigations and surveillance will require the corresponding training of laboratory technicians.

- Facilitate communications between worksite and relevant health institutions, so that the former are aware of the resources available in case of accidents/diseases and the latter are more knowledgeable in risks and treatment/rehabilitation methods specific to the businesses in their areas.

CHAPTER 7

DEVELOPMENT OF MODEL PROGRAMS

7. DEVELOPMENT OF MODEL PROGRAMS

As noted in section 3.3.2., the purpose of the model health programs is to develop activities for initial implementation of local and regional based initiatives identified in the MHP as important for improving health in Honduras. Each of the model health programs has a particular emphasis selected for its potential importance within the Honduran setting as follows:

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

The specific settings have been selected because they represent typical conditions appropriate for the strategies and, additionally, because the study team has been able to identify both a capacity and a willingness to initiate the program activities in the near term (see Figure 7-1). Institutions and individuals in each setting have participated in the initial planning and priority setting exercises and are prepared to move toward implementation as needed resources are made available. The identified projects, together with the national initiatives identified elsewhere in the NMHP represent the short-term agenda for improving health in Honduras.

7.1. *Model health program for urban area*

7.1.1 Background

The municipality of San Pedro Sula (SPS) was selected for the urban health model program as it has the most developed municipal government and best typifies the problems that other urban centers in Honduras will face in the near future. The model program will emphasize the municipal role as primary government body through which services are provided, and reinforce its role in decentralization and municipalization. In this context, SPS may be the only local government at present that has the capacity to implement the urban model

program. It should, by virtue of its development stage, exercise leadership (at local and metropolitan level) to integrate and assemble the efforts of the other municipalities, private and public organizations to define and formalize strategies and plans for development of the region.

(1) Urban characteristics of San Pedro Sula City

SPS is the second largest city in Honduras next to Tegucigalpa with the biggest industrial and manufacturing production in the country. The municipality of SPS encompasses urban and rural areas with an urban development plan which focuses on the urban area. Population of the urban area of the municipality is 419,302, 78.9% of the total.

The major characteristics of urban SPS are rapid population increase, young population structure with a high proportion of females, growth of industrial areas, diversity of urban communities, a high concentration of infrastructure but limited accessibility to the comprehensive PHC services, and changes in the pattern of diseases.

The population growth rate was 5.4% between 1988 and 1992 and is projected at 4.3% for the period 1996-2002 and 3.9% for 2003-2012 (refer to Table 7-1-1). This means the population would be about 791,000 in 2000 and double that by 2012. The rapid population growth compared to other areas is mainly due to migration, as SPS receives about 10,000 migrants per year.

The city's population is very young. This is due in part to the fact that many young men and women from other areas migrate to SPS in search of better job opportunities, since SPS has the highest concentration of industrial activities. In Maquilas (factories in free trading zone), most of the workers are girls of 14-20 years old (see Figure 7-1-1). In 1992, 62.5% of women over 15 years are migrants. Thus, there are only 93 men for every 100 women. The national average is 98.7 men for every 100 women.

SPS generates more than 50% of the industrial production of Honduras, and 25-30% of the GNP. SPS has 33% of the factories and 40% of the factory employment in Honduras. Factories and Maquilas are increasing in SPS and surrounding municipalities. The level of income per month varies, from less than 100 lempiras to more than Lps. 6,000. In 1992, 13.8% of the households had income per month lower or equal to Lps. 400; 40.4% had income lower than Lps. 800 and 60.7% had income less than Lps. 1,200.

These characteristics typifies the diversity of the SPS communities. People from different places have different social-cultural backgrounds. There are variety of occupations in the city which produces different life-styles, incomes, and education levels.

Another characteristic is that the city is economically, commercially, and technically the center of the region. The city is located in the Sula Valley in the north of Honduras and is the regional center of the Sula Valley Metropolitan Area consisting of nine municipalities. These municipalities have a regional municipality association to collaborate on regional development and promotion of municipalization.

(2) Characteristics of the Municipal Government of SPS

Besides these urban city features, the municipality is also characterized by its advanced capacity in municipalization and financing compared to other cities in Honduras. The municipality of SPS proposed and revised its urban development plan for 1993-2002 and will be finalized in 1996. The urban development plan of the municipality of San Pedro Sula attempts to meet the needs of the municipality until the year 2012 by proposing a framework for regional development that assures adequate planned land supply, infrastructure and urban services (water supply, roads and transport, garbage collection, various services), the optimum institutional and financial setup, proposals for zoning and urbanization, and the Geographical Information System (GIS) required for the urban development.

The health sector is a priority in the urban development program. The proposed urban development plan states that evolution of the health sector over the next several years will be influenced by the policies of decentralization and municipal reinforcement, and the guidelines for the development of this process are aimed at strengthening the municipality as the primary government body through which services are provided. The Municipality laws conferring more autonomy on the municipality have prompted more direct investment by the municipality, particularly in the education and health sector.

The advanced development of some of the municipality's divisions and programs such as the Municipal Planning Office, Municipal Water Division of San Pedro Sula (DIMA), Municipal Statistic Division (DIEM) with assistance from UNFPA, and the Social Participation Program supported by UNDP, serves as a model for other municipalities.

The centralizing of the GIS information databases which has been developed independently by DIEM, the Municipal Planning Office, and DIMA, will be at the disposal of IMPI (Instituto Municipal de Planificacion e Investigacion) for support of an integrated approach to development planning and research for urban development. This body, which will include the private sector, community leaders, politicians, etc. will be formed with the implementation of the urban development plan. The technical expertise of IMPI will be essential for incorporating the health sector's requirements and information for more effective municipal health needs and program identification.

The total budget of the municipality was Lps. 408 million in 1995, and is Lps. 370 million for 1996.

(3) Health service system by MSP in Health Region 3

Health Region 3 (HR3) of MSP is responsible for the health of the population of SPS and surrounding areas. The region is divided into 8 health areas. The metropolitan area office is responsible for SPS population. Each area is divided again into several sectors, and there is a sector CESAMO supervising other CESAMOs and CESARes in the sector. MSP health care service system is organized into 5 levels of care.: CESAR level provides PHC by auxiliary nurses, CESAMO level provides PHC by general doctors, area hospital level and regional hospital level provide secondary care, and national hospital level provides tertiary care and specific referral care (refer to Table 7-1-2 and Figure 7-1-2, 3). In 1995, total budget of HR3 was Lps. 16,892,600 and 54% of the total was personnel expenses.

Regarding health infrastructure in SPS urban area, there are 17 hospitals (1 MSP national hospital, 1 MSP regional hospital, 1 IHSS hospital and 14 private hospitals), 16 public CESAMOs, and more than 300 private clinics (refer to Table 7-1-3 and Figure 7-1-4). Among 16 public CESAMOs, 10 are MSP CESAMOs and 6 are municipal CESAMOs. The municipality pays for salary of some MSP CESAMO staff. The MSP provides drugs to municipal CESAMOs. The municipality also pays for salary of some staff working at MSP national hospital and regional hospital.

(4) Health services provided by the municipality

Establishment of the Health Unit of Municipality was proposed by UNDP Social Participation Project and was agreed on by the municipality. It was created under the

Community Action Office (see Figure 7-1-5). The Unit is already operational and supports school lunch programs, oral health programs, ambulatory clinic programs, and operates municipal CESAMOs under the guidance of the Metropolitan Area Office of Health Region 3. It also supports payment of doctors and nurses working at MSP CESAMOs and hospitals and gives administrative support to other institutions. The Unit receives technical support and advice from the UNDP project.

Regarding the financial resources for health services, the municipality provides financial support for the salary of doctors, nurses, and other health personnel working in MSP health institutions. They also support health programs in coordination with MSP and operate their own health programs, as well. In 1995, the municipality spent Lps. 1,413,000 for payment of doctors, Lps. 78,362 for drugs, and Lps. 107,732 for repair of the health centers. The municipality spent Lps. 120,000 for other health programs as well through the department of community action.

DIMA is a semi-autonomous body under the Municipality in charge of water supply and sewage disposal. Presently the water and sewer coverage in the urban area of SPS is 90% and 70% respectively. It is implementing the Master Plan for Potable Water (cooperation with World Bank & British Commonwealth Development Corp.) which seeks to meet the city's needs through 2010. With the completion of the Master Plan, coverage will increase to 95%.

However, the Master Plan only contemplates actions to improve potable water service in the urban area. The areas outside the water service area, which presently have their own system through wells and service networks managed by DIMA, will continue to be supplied by their own independent systems, effectively keeping them out of the Master Plan's projections.

The Municipal garbage collection is constrained by the limited number of garbage collection trucks. Some of the garbage collection services have been contracted out to private firms in some marginal areas. Due to the lack of trucks, garbage is collected once a week in the outlying sectors and from the central part of the city during the weekends by diverting all the trucks to it. The city's garbage is dumped at a landfill site which will be useable for another 10-15 years.

(5) Health problems and health statistics of SPS city

In the National Master Health Plan, 11 priority health problems have been identified and strategies to solve these problems are proposed. In SPS, AIDS (infection rate: 2.5 - 3.6 % in 1991-1993), and accidents and violence (the first cause of death according to national registry) are the more important problems. Reproductive health (Maternity mortality) is also a priority since the number of working women, particularly young girls who work in maquilas, has increased. For environmental health and occupational health, there are no consolidated data. However, the increase of population and maquilas affect environmental and occupational health. Chronic degenerative diseases does not appear in the 10 leading causes of morbidity. However, it is also a growing problem and cardiac diseases and cancers are the second and the third causes of death according to the national registry. Malaria, which is the fourth cause of morbidity, also needs more control efforts (refer to Table 7-1-4a, 4b and Figure 7-1-6). Some health indicators, and morbidity/mortality of SPS population are shown in Table 7-1-4a, 4b and 7-1-5a, 5b.

(6) Health services and delivery constraints

The regional hospital in SPS, Dr. Leonardo Martinez Hospital, was closed in 1990 when a new national hospital, Mario Catarino Rivas Hospital, was established. It was reopened in 1994. The hospital has plans to improve and expand its services, but it is not yet fully functioning as a hospital providing secondary care of level for SPS population. Therefore, except for a IHSS Hospital, Mario Catarino Rivas is the only public health institution which provides hospitalization, birth delivery, and 24 hours emergency care.

There are several organizations working in the health sector: the metropolitan area office of Health Region 3, the municipality of SPS, IHSS, NGOs, and private institutions. There is some coordination among them. However, particularly between the metropolitan office of HR3 and the municipality, more systematic coordination is needed to make the service system more efficient.

As an example, recently new municipal CESAMOs have been opened. However, some of them are very close to MSP CESAMOs already operating. As a result, in one sector there are in 5 CESAMOs serving the same population. Both MSP CESAMOs and municipal CESAMOs are covering SPS population. However, they do not have an organized system for exchanging health information and coordinating their plans.

Besides coordination among the above organizations, coordination within the municipality is needed to reinforce improvement of health status in SPS. The urban development plan has already been established and a geographical information system (GIS) for urban development plan is available. The department of statistics and research of the municipality, supported by UNFPA, has an excellent data base and information system. Additionally, the water and sanitary master plans have been developed by DIMA, and an SPS social participation project is on-going with technical assistance from UNDP.

7.1.2 Model health program

(1) Healthy city concept

The model health program is based on the international "Healthy City Plan". The study team proposes that the municipality should be a "healthy city", and should develop such a plan. This proposal was presented to the representative of the municipal health unit and the health region office in a joint-workshop and the proposal is being considered.

The "healthy city" strategies are designed to emphasize priority actions which satisfy basic human needs (food security, safe water, jobs for all and livable wages, safety, sound housing for all citizens). In a "healthy city", citizens live in clean and safe environments, public health services and curative services are available to all citizens, there are good schools and good education is provided to citizens, urban economics with diversity is active, and all citizens have access to transportation.

The "healthy city" status will be achieved through implementation of the "healthy city plan" by the local government with good coordination and collaboration with the health region office of the MSP, and other institutions and organizations. The citizens' involvement and control over decision making 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.

(2) Strategies of model health program to achieve "healthy city"

The program proposes the following strategies based on the special urban features and health problems as well as the decentralization policies. To implement these strategies, coordination among the municipality, MSP, IHSS and other organizations in SPS is the key (see Figure 7-1-7).

1) To plan health services to respond to increases and changes in needs/demands within the frame of the urban development plan

- Coordination among the municipality, MSP, IHSS and other organizations
- Creation and utilization of municipal health information system
- Utilization of and coordination with the existing data information system and GIS system
- Evaluation and monitoring will be implemented to modify the plan/program and to plan the next stage.

2) To stress the municipal role in health services

- Strengthening of capacity of the municipality for planning and provision of health services with support of MSP
- The role of the municipality in health services should be defined and the responsibilities should be transferred gradually to the municipalities.
- As mentioned in the proposed urban development plan, basic programs in prevention and control will be transferred: immunization, training and education of community, health promotion programs and campaign, vector control, control of rabies, environmental health, cleaning and garbage collection, water supply and sewage system, dialogue with communities to define their needs
- Utilization of municipal financial resources to support MSP and to implement health programs

3) To use available resources efficiently and equitably to optimize the limited resources and to avoid duplication

- Coordination among health institutions/suppliers
- Efficient management in health institutions and good referral system is central to improved efficiency.
- Reduction of overload of the hospitals to improve service conditions
- Social mobilization makes more existing resources in communities and private sectors available.

4) To promote social participation

- Training program of communities to find their problem supported by UNDP should be continued, and expanded.

- The provision of information to the community with their health and health related issues by UNDP project should be continued and expanded.

5) To focus on comprehensive PHC

- Health promotion and education activities by the municipality need to be strengthened.
- Reinforcement of CESAMOs function is needed to improve access to more comprehensive services in the community.

6) To focus on urban specific health problems

- Priority problems are HIV/AIDS, accident and violence, occupational health and environmental health.
- Reproductive health of young women is a growing problem.

7.1.3 Model projects

(1) Model project 1: Project for HIV/AIDS prevention and health promotion/ education

Health promotion and education is the key for achieving "healthy city". As shown in the priority health problem-strategies matrix, it is common strategies to solve all 11 priority health. The role of the municipal will be more stressed and its capacity in health promotion and education is needed to be strengthened.

1) Current situation of HIV/AIDS and health promotion/education in SPS

(A) Current situation of HIV/AIDS and current HIV/AIDS prevention programs

As already mentioned in Chapter 4, Honduras has the highest number of reported AIDS cases in Central America. With only 17 % of the population of the sub-region (Central America), Honduras has 57 % of the reported AIDS cases in the region. San Pedro Sula (SPS) has the highest rate of infection in the country (Infection rate in SPS ranged from 2.5 and 3.6 % between 1991 and 1993), and accounts for fully one-third of the accumulated AIDS cases reported in Honduras. Already in the two hospitals in the city, AIDS is the first cause of mortality in one and second in the other. For the year 2000, between 10 to 17 % of the population of SPS is expected to be infected with the virus, while a minimum of 3,200 new AIDS cases are expected annually by the end of the century.

Currently, there are many organizations and activities in HIV/AIDS prevention and care in Honduras. Among them, SPS is the site where more activities are going on than any other sites in the country.

The Health Region 3 has developed and distributed moderate amount of educational materials to public and private sector programs, has trained personnel in health institutions, NGOs and labor union. It is developing STD management and training program in the CESAR Miguel Paz Barahona. It also have school programs jointly developed by MSP and SEP. With assistance from PAHO and the World Bank, radio spots on HIV/AIDS have been broadcast in the Region. The Municipality, through its COMVIDA project, has also implemented educational programs for adolescents, continuous education through videos, posters and face-to-face interventions in a kiosk in the central park of the town, condoms and STD referrals in maquilas. AIDSCAP has assisted some of the COMVIDA projects. Another public sector program in SPS is with IHSS focusing on factories in IHSS system and IHSS beneficiaries. NGOs and private sectors also have been working actively with little or no outside funding on small prevention and care activities.

However, these activities and organizations still need leadership of coordination and exchanges of information to avoid duplication, identify needs, establish norms and improve efficiency and effectiveness of the HIV/AIDS programs.

(B) Current situation and problems in health promotion and education

The Health Unit of the Municipality has a community health education program started two years ago in marginal areas. The program was initiated as a part of UNDP social participation program, and was supported by the UNDP technical advisor. Four community groups in marginal sector were included in the program, and 15 to 20 community people from each community have participated in the health education course. However, the UNDP support ended in June, 1996. In the context of State Modernization Policy, the municipality should have more responsibilities for health promotion and disease prevention area rather than primarily for curative services. However, the activities was depending on the advisor of UNDP, and the Health Unit does not have a well-established system and a full-time health educator in community health promotion and education. Technical support is still needed to improve institutional capacity and to continue and expand the program by the Municipality.

Health education and promotion activities have also been provided by MSP. In the recent outbreak of Cholera and Dengue, these activities served effectively to control these problems. However, there is a lack of planned sequential health education and promotion activities due to a shortage of professionals in health education and promotion, and communication skills as well as lack of regional training institutions.

2) Description of the project

(A) Purpose and objectives

The purpose of the project is to establish coordinated health promotion/education mechanism for the population of SPS and the municipalities nearby, which coordinate the effort in health promotion/education and disease prevention activities and to reinforce the health unit of the municipality. It is based on the NMHP strategies of "improvement of health education" and "improvement of social participation", and will be an urban model in which the strategies are materialized.

Since HIV/AIDS problem is one of serious problems and needs urgent actions in Honduras, it will be taken as the first priority for health promotion and education activities in urban areas of the country under the national HIV/AIDS control policy and supervision from the central government. In SPS, the problem is more serious than other areas, which rationalize the establishment of a model project in SPS. The model will be replicated in other urban areas, such as Tegucigalpa, Comayagua and La Ceiba, where HIV seropositive prevalence is increasing.

(B) Target area

a. In Short-term: San Pedro Sula City and surrounding areas

b. In Mid/Long-term: Health Region 3

(C) Framework of the project

(I) To establish leadership and to coordinate existing efforts in health promotion and disease prevention and care activities

The municipality of SPS, the metropolitan area office of HR3, IHSS, NGOs and private sectors are providing health education and promotion as well as some health information. There is some coordination among these organizations and groups. However, establishment of the Center will contribute to establish leadership and coordination of efforts in health

promotion and disease prevention, including HIV/AIDS prevention and care, and to identify needs. Thus, SPS will have more comprehensive, effective, and efficient programs.

(II) To support and strengthen existing organizations and activities

The Center will support expansion of the capabilities of those already working in health promotion/education and disease prevention and new human resources entering the field and will give continuing education to these personnel. It also serve as an information center on health, diseases, and health education to support existing and new activities and to identify needs.

(III) To avoid duplication of function

The Center will focus on health education and promotion and information for the prevention of diseases, in particular providing leadership and training which has the largest possible impact. Regarding HIV/AIDS, Safe blood supply, epidemiological statistics, and HIV testing will not be included in the activities of the Centers these are already functioning in other institutions.

(IV) Stage-wise implementation

The Center will initially focus its attention on SPS city, gradually expanding to offer its resources to the rest of Health Region 3.

Regarding AIDS prevention and information, it will also form collaborations for exchanging information with other regional (Central American) AIDS centers and CDC. It will extend information services to the Central American countries.

(D) Components

(I) Function and activities of the Project

a) Coordination

- To provide leadership for coordination of health education and promotion activities, particularly in HIV prevention efforts.
- To coordinate health education/promotion activities within the municipality and with other activities provided by Health Region 3, Honduras Social Security Institute (IHSS), NGOs and other agencies.

b) Training and education

- To plan and implement health education/promotion and disease prevention program.
- To educate and train personnel working in health education/promotion and disease prevention on participatory problem solving and communication techniques, counseling skills, health education technique.
- To train instructors on home based care of AIDS and provide continuous training on AIDS.
- To educate the general public about health and prevention of disease, particularly HIV transmission prevention and the need for acceptance of persons living with HIV/AIDS.

c) Production of education materials

d) Documentation and information

- To establish a library and documentation system
- To disseminate basic health information to SPS communities, health personnel, municipal officers who are responsible for health planning, and students working in the health sector.

e) Counseling services (includes blood sampling, however, the blood sample will be sent to other institutions for testing)

- To decrease HIV transmission by serving as a center of excellence for early diagnosis of HIV infection and provision of related counseling. (At a later stage of the project)
- To provide counseling on violence, alcoholic problem, and mental health problems.

f) Research (operation research) at a later stage

- To test potential improvements in motivating behavior change.

(II) Inputs

a) Initial investment cost including contingency and consultant fee

- Building and facilities:
  Establishment of the Center: a conference room, training rooms, counseling rooms, a library, a documentation room, an audio-visual editing room, a printing room, office rooms.

  *Preparation of the land: the municipality of SPS will provide the land

  **Infrastructure work: the municipality of SPS will carry out

Estimated cost: US$ 3,815,000

- Equipment for the Center
  audiovisual equipment, audiovisual editing equipment, printing machines, computers, office equipment, cars supporting training activities

Estimated cost: US$ 2,400,000

b) Initial operation cost

- Staff of the Center: Director 1, Technical staff 1, Other staff 8

Estimated cost: US$ 120,000/year

- Others: maintenance cost, etc

Estimated cost: US$ 80,000/year

c) Total of initial cost as of March 1996

- Initial investment cost

Estimated cost: US$ 6,215,000

- Initial operational cost

Estimated cost: US$ 200,000/year

d) Technical inputs

- Foreign experts

At the first stage of the project, technical assistance in health education and promotion, communication skills, HIV/AIDS prevention and counseling, and computer network system engineering will be needed.

(III) Financial and technical resources

a) Possible financial resources for initial investment cost

- Foreign resources: grant aid

b) Possible financial resources for operation costs

- Domestic resources: the municipality of SPS

c) Possible technical human resources

- Domestic resources: staff from the municipality of SPS, MSP
- Foreign resources: experts

(E) Management and operation

The following two options are proposed here: difference is whether the Center will be for health promotion and education activities including HIV/AIDS part, or will specifically focus on HIV/AIDS. In both cases, the MSP will provide policy guidelines and technical assistance and supervise the Center. The Center will be governed by a Board of Directors (Junta Directiva) made up of representatives of the municipality, Health Region 3, MSP, but

the municipality will routinely operate the Center. The coordination committee will be also organized with IHSS, NGOs, donors and etc.

Option 1 (see Figure 7-1-8a)

The project is comprised of two separate sub-projects: one is the "Center for HIV/AIDS Prevention and Information" project, and the other one is the "Strengthening of Municipal Health Promotion and Education Activities" project. The short term scope of work of the former project will be municipal with regional extension. Depending upon initial success and forthcoming additional funding In the mid and long term plan, this model will be expanded in other urban areas, for the extension of the model in other urban areas. The latter one aims at strengthening of health unit of the municipality in community health promotion and education, and for the AIDS part, there will be collaborative activities with the "Center for HIV/AIDS Prevention and Information". As such, the former sub-project will contribute to the national needs, while the latter one to SPS city itself.

Option 2 (see Figure 7-1-8b)

The above mentioned sub-projects are integrated into the "Center for Health Promotion and Information". The Center will be a municipal center for SPS population. It will be a center to coordinate efforts and programs in health prevention and education in SPS, particularly, in various activities of HIV/AIDS prevention at the initial stage of the project. The range of activities will be gradually expanded to all health promotion and education areas. For the long term basis, this integrated model project will be applied to other municipalities in the country.

(F) Effectiveness

(I) Contribution to basic principle of health policy

The project will support and promote national health policy. The project will strengthen effectiveness of health prevention activities by giving technical support in prevention and promotion health. Better coordination and cooperation will reduce duplication of efforts and make services more efficient, facilitating the optimization of resources. Social participation will be one of the important strategies in health promotion project, and the project will

promote and give technical support to related organization through training and provision of information.

(II) Contribution to priority health problems

Health education and promotion activities will impact all priority problems as shown in the matrix of strategies and health problems (Fig. 7-1-6). Particularly, the project will give great impact on HIV/AIDS and chronic degenerative diseases, for both of them there are no immediate curative solution and medical treatment is extremely expensive, although HIV/AIDS is more urgent matter and chronic degenerative diseases is more likely future problem which needs start of strong preventive action now. Accidents and violence will have great impact by education and promotion, which has little systematic activities now.

(III) Contribution to resource saving

Curative services always cost more than preventive service. The project will contribute to reducing the cost for curative care of diseases by reinforcing a preventive focus in the target communities. For instance, cost for hospital care of AIDS patients is estimated from 21 to 29.3 million Lempiras in 2000. If preventive activities are conducted effectively by the project, HIV infection and AIDS incidence will be kept to the minimum level with a resulting saving of 8.3 million Lempiras for hospital care cost. Better coordination and cooperation will also reduce duplication of efforts and make services more efficient, facilitating the optimization of resources.

(2) Model project 2: Reinforcement of CESAMOs functions

The project incorporates strategies to improve access to health services by supporting the development of a model of delivery of basic health services incorporating up-graded CESAMOs in urbanized areas. This initiative is linked to MSP's project for management of emergency care.

1) Current situation and future status improved by the project

(A) Current situation of health system in SPS

Hospital Mario Catarino Rivas (MCR) is the only public institution which can provide birth delivery care and emergency care in SPS except for the IHSS hospital which covers only part of the SPS population.

The Hospital MCR is congested with normal delivery cases and spends a disproportionate amount of time on primary health care instead of tertiary hospital care. This causes poor service conditions in the Hospital and means that continuity of maternal and child care (pre-natal, delivery, post-natal, breast-feeding and child growth monitoring) is lost.

Geographical access to hospitals is not very difficult in San Pedro Sula. However, both hospitals are located in the north, outside of the city center. This means that people living in the southern marginal areas have poorer access these hospitals and face higher costs in both time and money. (Lps. 30-80, and 30-40 minutes by taxi).

Hospital Dr. Leonardo Martinez was closed in 1990 when Hospital MCR was established, and was re-opened in 1993. The hospital is still not fully functioning as a regional hospital; it has no maternity, emergency care and dental care services. However, it is being renovated to include maternity, pediatrics, and surgery departments in the future.

In SPS, all health centers have at least one doctor. The biggest CESAMO has a dental clinic, a laboratory, and a STD clinic in the afternoon. Beside this metropolitan CESAMO, only one has a laboratory and another one has a dental clinic.

(B) Improved health system by the project (see Figure 7-1-9)

In the center of the city, Hospital LM is going to have a maternity ward with 20 beds for normal delivery to receive pregnant women 24 hours per day. It is negotiating with the Municipality to provide support for increasing the number of nurses. Therefore, the CESAMO in the center of the city will not provide maternity services. However, they have a close relationship for provision of pre- and post-natal care and breast feeding support.

One CESAMO with expanded functions will be located in each sector of SPS. The CESAMO will be a center CESAMO in the sector and provide primary health care in the locality responding to increasing needs. Services will include maternity care, pre-hospital emergency care with a laboratory function and dental care. The service hour will be expanded so that the community have access to primary health care service in their locality for 24 hours. The CESAMO will refer patients who really need hospital care to the appropriate institutions.

The center CESAMO (and Hospital Leonardo Martinez) will contribute to reduction of workload and to improvement of service conditions in Hospital MCR.

The emergency transport system will be improved so that people can access services more easily. The center CESAMO will have communication equipment and the ability to call the ambulance which will be operated by the Red Cross.

In later stage, a more systematic emergency transport system will be developed covering the whole of SPS together with public, IHSS, and private hospitals.

2) Description of the project

(A) Purpose and objectives

To establish an efficient health system through improving access to primary health services by expansion of CESAMO functions as follows:

i) To provide 24 hour birth delivery care and a pre-hospital emergency care in selected CESAMOs in each major sector.

ii) To provide a basic laboratory service in the selected CESAMOs.

iii)To improve dental care service in the selected CESAMOs.

iv)To improve the emergency transport system.

(B) Target area

The urban area of San Pedro Sula City

(C) Framework of the project

(i) To up-grade existing system

For expansion of the range of basic services, the existing (including on-going project) facilities and systems will be utilized. Renovation or new construction will be done on the existing target CESAMO sites.

(ii) Step-wise implementation

The expansion of CESAMO function needs considerable human resources. Therefore, all center CESAMOs will not be set up at the same time, but will be implemented in stages with monitoring and evaluation.

(D) Components

(i) Function and activities of the expanded CESAMO and project components

i) Opening and operation of maternity care service 24 hours per day

Place for normal birth delivery will be established in CESAMO in each sector of the marginal area (Chamelecon, Cofradia, Calpules and Rivera Helnandez). High risk delivery will be referred to Hospital Mario Catarino Rivas.

ii) Opening and operation of pre-hospital emergency care service for 24 hours:

Pre-hospital emergency care unit will be opened in CESAMO Miguel Paz Barahona, and CESAMOs in sectors of the marginal area (Cofradia, Chamelecon, Calpules and Rivera Helnandez).

iii) Opening and operation of basic clinical laboratory in all CESAMO above mentioned.

iv) Opening and/or improvement of dental clinic with equipment support.

v) Provision of two more ambulances equipped with communication system (radio and/or telephone)

vi) Training of personnel

- Emergency care: doctors, paramedical and nurses
- Birth delivery care: paramedical and nurses
- Clinical laboratory test: lab. technicians
- Maintenance of dental clinic equipment: a maintenance technician

(II) Inputs

a) Initial investment cost including contingency and consultant fee

- Building and facilities (expansion/renovation of the existing CESAMOs*):
  labor room, recovery room, observation room, minor surgery room, dental clinic room, laundry, etc.

  *CESAMO Miguel Paz Barahona and one CESAMO in each marginal sector (Cofradia, Chamelecon, Calpules, Rivera Hernandez) will be expanded / renovated

  Estimated cost: US$ 1,570,000

- Equipment of the Center
  observation beds, delivery beds, medical equipment for delivery, sterilizers, nebulizers, oxygen tank, laundry machines, basic laboratory equipment, dental clinic equipment, 3 ambulances with first aid kit, telephone and /or radio communication, etc.

  Estimated cost: US$ 1,712,000

b) Initial operation cost

- Salary for staff of the CESAMOs and ambulances:
  Technical personnel 161 (include additional staff for expanded function : 89)
  Administrative staff 97 (include additional staff for expanded function : 70)

  Estimated cost: US$ 334,000/year

  (cost for salary of additional staff : US$ 187,000 / year)

- Others: maintenance cost, etc Estimated cost: US$ 257,000/year

c) Total of initial cost as of March 1996

- Initial investment cost **Estimated cost: US$ 3,282,000**
- Initial operational cost **Estimated cost: US$ 591,000/year**

d) Technical input

- Training of CESAMO staff
- Training of Ambulance staff

(III) Financial and human resources

a) Possible financial resources for initial investment cost

- Foreign resources: grant aid

b) Possible financial resources for operating cost

- Domestic resources: MSP and the municipality of SPS

c) Possible human resources:

Domestic human resources from MSP and the municipality of SPS

	Total	*Existing*	*Transfer**	*Additional staff*
For 5 CESAMOs				
General doctor	38	18	10	10
Prof. nurse	27	7	3	17
Aux. nurse	73	40	10	23
Lab. technician	31	7	-	24
Administrative	26	6	-	20
Watchman	24	9	-	15
Cleaning lady	32	12	-	20
For 3 Ambulances				
Paramedical staff	15	-	-	15
Driver	15	-	-	15

* Existing staff at Hospital Mario Catarino Rivas can be transferred to CESAMOs due to decrease in the number of patients attended in the hospital.

(E) Management and operation

The Metropolitan Area office, Health Region 3 and the Municipality will be responsible for the operation of CESAMOs with systematic coordination.

(F) Effectiveness

(I) Contribution to basic principle of health policy

The project will improve access to basic health services since the CESAMO in the community of the city will provide wider range of services than current services, particularly in marginal areas. This will contributes to equity of health services together with the ACCESS project being implemented by MSP. The project also improve the referral system in SPS which should reduce the workload of Hospital Mario Catarino Rivas, thereby

improving the quality of their services. This means that the project will contribute improvement of efficiency of the health services system as well as effectiveness.

(II) Contribution to problem-strategies Matrix proposed

Reproductive health of increasing young girls and mothers working in maquilas/industries in SPS and its surrounding areas are one of the growing problems. Improvement of birth delivery care and peri-natal care by the project will be expected through the improvement of the referral system in SPS, improvement of access to MCH services in the community, and to reduce the workload of Hospital Mario Catarino Rivas, thereby to improve the quality of their services.

(III) Contribution to resource saving

From the view point of operating costs, the initial stage of the project will require greater resources compared to the present system. However, in the future, the improved system will operate at a lower overall cost since the national hospital will need fewer health personnel to treat its reduced share of the projected overall patient load.

Balance of operational cost by project (unit: Lps.)

Year	*Operation cost: Additional cost for CESAMOs*	*Operation cost: Cost reduction in Hosp.M.C.R.*	*Balance*
2000	402,000	345,000	57,000
2005	402,000	500,000	98,000
2010	402,000	657,000	255,000

This table does not include the operation cost along with the expansion of Dr. Leonard Martinez Hospital.

(3) Model project 3: Maintenance and Information center for medical facilities and equipment

1) Current situation and problem identification

(A) Current situation of maintenance system

It is difficult for MSP and other public hospitals and clinics to maintain their medical facilities and equipment in good condition due to the following:

(I) Financial restrictions

Public medical and health institutions can not afford the expense for maintenance of facilities and equipment due to limited budgetary allocation. Generally, they allocate less than 1 percent of annual operating costs of the facilities as compared to the 3 to 4% typical of private medical facilities.

(II) Limited service network for medical equipment

The Honduran domestic market for medical equipment is rather small. As a result, the private sector service network for medical equipment is not well developed. In the case of products donated by external aid, the situation is more serious. Public medical and health institutions often have difficulty procuring spare parts and needed consumable supplies.

(III) Insufficient capability of maintenance personnel

Most public hospitals have their own technical staff for facilities and equipment maintenance. However, they are not capable enough to maintain all the facilities and equipment properly due to limited knowledge and experience. Retraining courses for maintenance staff are required.

(IV) MSP institutional problem

Two departments of the MSP, CENAMA and PRONASSA, are supposed to manage and assist the MSP hospitals with facilities maintenance. Even though they have own budgets to support the hospitals, it is not enough to cover the needs of all the MSP facilities in Honduras. Furthermore, the functional demarcation of these departments is not clear although stipulated in the legal structure. This causes insufficient and inefficient coordination of facilities maintenance.

In and around San Pedro Sula city, demand for medical resources is increasing remarkably. As a result, services are provided by a wide range of private and public institutions, such as IHSS hospitals and clinics and municipal health centers as well as MSP hospitals and CESAMOs/CESAReS. However, there is no facility that serves as a maintenance center. As a result, CENAMA and PRONASSA' are called upon to cope with individual incidents on a case by case basis as there is no existing nationwide maintenance system to attend to remote locations. Considering these circumstances, a model system for medical facilities and equipment maintenance is urgently needed.

Financial conditions of the SPS municipal government are relatively better than other municipalities because of vital industries located here as well as the experience of considerable autonomous movement and community participation activities. Therefore, it is realistic to design a concrete model plan with includes financial and physical support from the municipal government in San Pedro Sula.

(B) Improved system by the project (see Figure 7-1-10)

A model plan of the medical facilities and equipment maintenance system should be established. This system would be a regional self-supporting type and applicable nationwide. It would provide technical support, information exchange and training of

personnel and enhance network systems among responsible departments of the MSP. Using CENAMA and PRONASSA as a main center, an additional maintenance and information center will be newly created in Health Region 3 as a regional center, serving public medical and health institutions from primary to tertiary levels. This plan includes the following strategies,

(I) Decentralization of facilities and equipment maintenance

Technical skill and knowledge of simple routine maintenance and minor repair will be transferred from the main and regional centers to the terminal level institution staffs through training and provision of information. This will encourage autonomous preventive maintenance activities regardless of financial and technical conditions of the MSP.

(II) Utilization of existing facilities and human resources

This project aims at utilization of the existing facilities and human resources with optimized investment in facilities and equipment. Thus, additional operation costs will be minimized.

(III) Standardization and uniformity

Standardization and uniformity of facilities and equipment are as important as improvement of the maintenance system since the combination of suitable design of facilities and optimized selection of equipment will contribute to alleviate the burden of maintenance. From this view point, local design, structure, and procurement should be encouraged.

(IV) Introduction of private sector

The private sector would be involved to obtain technical information and procure spare parts and consumable goods. A list of private sector providers with information on the types of products, serviceability, and availability of spare parts and consumable goods, has to be drawn up.

(V) Network system

A network system should be constructed among the main center, regional centers, medical institutions, municipalities, private sector and donors to coordinate activities. Advanced computerized as well as conventional communication systems will be introduced for this purpose. Also, a physical road network will be required to undertake mobile activities (field site), such as maintenance and repairs and for training which cannot be done by themselves at the local level.

2) Description of the project

(A) Purpose and Objective

i) To improve conditions of the existing medical facilities and equipment in and around Health Region 3 by encouraging reactivation, restoration and modification of the facilities and equipment utilizing existing human resources.

ii) To train and educate personnel working in operation and/or maintenance of medical facilities and equipment.

iii) To plan and implement facilities and equipment preventive maintenance programs.

iv) To coordinate facilities and equipment maintenance activities among the main center, MSP, the regional center in SPS, Health Region Office 3, SPS municipal government, medical and health institutions and the private sector.

v) To standardize specifications and incidental procedures of medical facilities and equipment, including procurement of spare parts.

vi) To disseminate knowledge, preventive maintenance consciousness and Quality Control procedures.

vii) To process and exchange data and information among the centers and medical and health institutions on facilities and equipment maintenance including facility conditions, parts inventory, quality control, failure mode analysis, etc.

viii) To exchange and provide needed information, through advanced communication systems, on facilities and equipment maintenance to medical institutions and other concerned institutions.

(B) Target areas

(I) Direct influence

a) Regional level

San Pedro Sula, Health Region 3 and other neighboring regions. Target area will be expanded to include primary level medical and health institutions as there is progress in technical transfer and dissemination of knowledge.

b) Central level

Tegucigalpa, Health Region 1 and other neighboring regions. Target area will be expanded to include primary level medical and health institutions as the main center is strengthened and technical transfer and dissemination of knowledge proceeds.

(II) Indirect influence

The medical facilities and equipment maintenance system is improved. The main center transfers this improved capacity to all public medical facilities in other regions in Honduras.

(C) Components

(I) Activities

Enhancement of roles and functions of the MSP's facilities and equipment maintenance department

a) Central Level

Components of activities

	Main center, MSP	*Remarks*
Role/ Functions	Main center -Planning, designing, construction management of medical facilities, rehabilitation programs - Training trainers - Standardization - Coordination with other related project - Information exchange and dissemination - Assistance in parts procurement - Documentation & Printing - QC programming	- Close coordinated function is required between PRONASSA/CENAMA from planning stage to implementation stage. - Merger of two departments would be encouraged.
Objective facilities	- Planning/ Implementation stage All MSP facilities including CESAMO/ CESAReS IHSS/ others facilities	
Organization		Merger of PRONASSA/CENAMA would be recommended.

b) Regional Level

Components of activities

	Regional center, HR1 and HR3	*Maintenance section, public medical facilities*	*Remarks*
Role/ Functions	- S/V for installation -Maintenance & repair -Training trainers/ staff - Documentation - Parts procurement - Information exchange - QC training - Mobile activities	Hospital level - Simple routine check/ maintenance - Minor repairs - QC activities PHC facilities level - Simple routine check/ maintenance	Sector CESAMOs should act as an sub regional center with assistance of the regional center on the training and minor repairs Mobile activities would be used for training and dissemination
Objective facilities	- All MSP facilities including CESAMO/ CESAReS - IHSS/ others public facilities - Private hospitals/ Clinics	- Each own facilities	
Organization	Collaboration organizations concerned - Municipal government - Health Regional 3 - MSP - Major hospitals	- Simple routine check/ maintenance would be carried out by medical staffs at PHC level - Sector CESAMOs would assist CESAMO/ CESAReS	- Private sector would be involved in parts procurement or need as
Personnel	HR3: 25-30 HR1: Concurrent assignment of the main center personnel	2-30*/ hospital, it depends on scale	*including staff for non-medical maintenance work

(ii) Inputs

a) Initial investment cost

- Building and Facilities (renovation)

- Main building, Tegucigalpa $500,000

  Expansion/ renovation-Workshops, Training room, etc.

- Equipment, Tegucigalpa $1,000,000 *1)
- Main building, SPS $500,000

Expansion/ renovation-Workshops, Training room, etc.

- Equipment, SPS $1,000,000 *2)
- Equipment, for hospitals $500,000

Basic tool & Instruments, PC

Total **$3,500,000**

Contents of the above amounts

*1) Equipment for the main center in Tegucigalpa

Equipment for repair and maintenance:	Basic tools and instruments
Equipment calibration for electronic medical equipment	
Machining tools for machining parts	
Equipment for training & office	*AV quip., furniture*
Equipment for documentation:	DTP, Printing & Copying machines
Equipment for inf.. & com.	Computer, printer, modem, CAD, etc.
Vehicles for mobile activity	VAN with machine shop, 4WD with AV equip.

*2) Equipment for the regional center in SPS

Equipment for repair and maintenance:	Basic tools and instruments
Equipment calibration for electronic medical equipment	
Machining tools for machining parts	
Equipment for training & office	AV quip., furniture
Equipment for documentation:	DTP, Printing & Copying machines
Equipment for inf.. & com.	Computer, printer, modem, CAD, etc.
Vehicles for mobile activity	VAN with machine shop, 4WD with AV equip.

b) Initial operation cost

i) Annual operational cost, main center in Tegucigalpa

- Expenditure $100,000 *3)
- Revenue $20,000 *4)

Total **$80,000**

ii) Annual operational cost, main center in SPS

- Expenditure $80,000 *5)
- Revenue $23,000 *6)

Total **$57,000**

Contents of the above amounts

*3) Expenditure, main center in Tegucigalpa

Travel & Allowance

Outside order, etc.

Consumable, ME

Spare parts & Repair

Tire, Oil, Lubricant, etc.

Fuel

Communication

Materials, Documentation

Utilities

Labor cost, Additional — 5 persons hired or transferred additionally

*4) Revenue, main center in Tegucigalpa

Rental of training equipment

Training course for private

Hospital/ Clinics

*5) Expenditure, regional center in SPS

Travel & Allowance

Outside order, etc.

Consumable, ME

Spare parts & Repair

Tire, Oil, Lubricant, etc.

Fuel

Communication

Materials, Documentation

Utilities

Labor cost — 5 persons hired or transferred additionally

*6) Revenue, regional center in SPS

Rental of training equipment

Training course for private

Hospital/ Clinics

c) Total of initial cost as of March 1996

- Initial investment cost — **Estimated cost : US$ 3,500,000**
- Initial operation cost — **Estimated cost : US$ 180,000**

d) Technical input

- Technical cooperation

  Combination of dispatching a foreign expert or consultant, with sufficient knowledge and experience to promote planning of training, facilities, standardization, information control, etc. to the main center in Tegucigalpa and a volunteer such as JOCV, to implement these plans at the maintenance/ information center in SPS based on the experience gained at the Tegucigalpa center

- Training of Honduran technical personnel abroad

- Training in donor country
- Training in third country
- Coordination with other projects

Regarding future functional enhancement and area-wise expansion, further effective operation could be expected by collaborating with other projects such as ACCESO, OPS medical equipment maintenance improvement project of 7 Central American countries and WB/VITA radio communication program. Therefore, sufficient consideration on selection and finalizing specifications of equipment would be required.

(III) Financial and human resources

a) Possible financial resources for initial investment cost

- foreign resources : grant aid

b) Possible financial resources for initial investment cost

- domestic resources : MSP and the MSPS
- center's own revenue

c) human resources

- Main center in TEGUCIGALPA
  - Human resources, required for the center
    Basically, the center will be operated by the existing PRONASSA (40 persons) and CENAMA (91 persons) staff
  - Required personnel for the center operation
    Organizational rationale for training and development of trainers overseas as key persons for technical transfer/ diffusion
- Regional center in SPS
  - Human resources, required for the center - Total 26
  - Director 1, Secretary 1
  - Engineering - Chief, Facilities, Drawing, Training, Documentation, Information, Secretary, 1 each
  - Administration - Manager, Secretary
  - Medical equipment, Planning & Training - 5 Technicians
  - Facilities - 4 Technicians (Refrigeration & Air-conditioning, Mechanical, Electric, etc.)
  - Medical equipment repair shop - 4 Technicians
  - Radio communication - 2 Technicians
- Existing human resources, applicable for the center
  - Maintenance staff HR3 -3 technicians,
  - Maintenance Dept. H.MCR - 18 staff
- Required personnel for the centers operation

Required personnel could be available from the above human resources with 5 additional persons transferred from the main center in Tegucigalpa or trained abroad. It is necessary to confirm if there are any legal or other restrictions that would prevent the use of technical personnel from H.MCR on a concurrent basis.

d) Management and operation

The maintenance and information center should be governed by a Junta Directiva (a Board of Directors) made up of the Municipality, Health Region office and major medical institutions as well as by as Technical Advisory Committee comprised of CENAMA & PRONASSA - MSP, maintenance staff of major medical institutions and other technical institutes.

(D) Effectiveness

(I) Contribution to basic principle of health policy

The project aims at improving of the efficiency and effectiveness of maintenance system of medical facilities and equipment, through decentralization system with training, promotion of preventive maintenance, coordination and clear demarcation of CENAMA and PRONASSA, standardization of specifications and incidental procedures of medical facilities and equipment, improvement of information system on maintenance, and use of private companies for maintenance of sophisticated high technology equipment.

(II) Contribution to problem-strategies Matrix proposed

Improvement of maintenance system of medical facilities and equipment is needed not only in urban areas but also other areas, and which related to health service provider aspect at all level of care. This is a pilot project of the improved maintenance system through setting-up the regional maintenance center and better coordination of CENAMA and PRONASSA and information system.

However, the problem is more serious in hospitals, where many equipment easily become unworkable due to lack of preventive maintenance, there is too many variety in the equipment from donor agencies resulting in technical difficulties of maintenance and obtaining of spare-parts, and there is many unprepared equipment in the hospital warehouse.

(III) Contribution to resource saving

Through spending resource on preventive maintenance and standardization, reduction of repair cost and efficient use of facilities and equipment will be achieved. Better maintenance and repair system will make the project cycle of equipment longer, thus, cost for equipment will be saved.

Evaluation of the model program for urban area

Items		*Expected Effect*	
		Financial	
Improvement of medical facilities/ equipment conditions	Usage rate of the major facilities/ equipment Record of periodic inspection/ maintenance	- Reduction of maintenance cost - Reactivation of idle facilities/ equipment	- improved diagnostic and curative capacity
Establishment of preventive maintenance program	- Implementation rate of periodic inspection/ maintenance - Inventory of manuals/ part lists	- Reduction of maintenance cost - Reduction of parts procurement cost	
Training activities	No. of qualified technician No. and contents of training courses	Fee for training courses to private institutions	
Documentation	Quality and quantity of documentation		
Standardization	Enacted standards/ guidelines Financial statement	- Reduction of construction/ maintenance cost - Improvement of parts duration and availability	

7.2. *Program for Poverty Area*

7.2.1 Program for rural poverty area

(1) Background of target area

The catchment area of the Hospital "Dr. Enrique Aguilar Cerrato" (hereinafter refer to as "La Esperanza Hospital", Health Area 2, Health Region 2, was selected as target area based on the following criteria (see Figure 7-2-1).

1) covers a large number of beneficiaries;

2) social participation organizations are being formed;

3) social participation activities are being carried out;

4) has a higher rate of the population with the highest NBI indicators;

5) a public hospital functions as one of the centers of the community activities.

The Health Area 2, whose office is located in La Esperanza Municipality, covers the entire Dept. of Intibuca with part of the adjacent departments including Santa Barbara, Lempira, Comayagua, and La Paz in its catchment area. Therefore, the target area of the model health program is almost equal to the Dept. of Intibuca, whose socio-economic data is shown in the Table 7-2-1.

The Dept. of Intibuca is located in the western mountainous region of Honduras and shares frontier with El Salvador. The department covers 3,072.2 km^2 and includes 17 municipalities. There are 20,127 households and a population of 124,681. 22,790 inhabitants, representing 18% of the total population of the department, live in the urban area, while 101,891 (82% of the total) live in the rural area (refer to Table 7-2-1 and Figure 7-2-2). Although there are no formal statistical data available, most of the population in the department are of Lenca origin, one of the principal minority ethnic groups living in the mountainous regions of Honduras.

Based on the nation-wide population projection project implemented by SECPLAN in 1992 and funded by United Nation Population Fund, the population of the Dept. of Intibuca, increased from 125,000 in 1988, to 154,000 in 1995. It is projected that the population will be 175,000 by the year 2000, 196,000 by 2005, and 215,000 by 2010, with an annual growth rate of 2.2 from 1995 to 2010. This annual growth rate is lower than the national rate, estimated at 2.3% from 1995 to 2010.

In 1961, the net migration balance was -8,942 with 2,181 immigrants and 11,123 migrants. In 1974 net balance was -19,665 and in 1988 it was -27,604. Most of the movement has been to go to urban areas in other departments.

In the Dept. of Intibuca, 70% of children less than 5 years old have some degree of malnutrition. The maternal mortality rate (MMR) in 1990 was 534/100,000 live births, the highest in the country after the Dept. of Gracias a Dios. This is twice the national average maternal mortality rate of 221/100,000 live births (see Table 7-2-1). In order to address this serious situation, the Health Region 2 Office has been working with the community since 1992 on an integrated health model initiative.

As part of this initiative, the regional health office has been identifying the poorest communities since 1992. The indicators used for this purpose are: percentage of the community members with no access to water and sanitation (obtained through community census) and the rate of malnutrition (obtained through service delivery statistics). The degree of malnutrition is weighted at 70% while the other two indicators at 15% each. Five strata have been identified #1 being the least poor and #5 the poorest.

Based on the results of the study, 72% of the population in Health Area 2 live in strata #4 (poor) and #5 (very poor) conditions (refer to Table 7-2-2 and Figure 7-2-3), which is the highest percentage amongst the five health areas in Health Region 2. 21% of the population live in strata #4 and #5 conditions in Area 1 (headquarters located in Comayagua), 22% in Area 4 (La Paz), 35% in Area 3 (Siguatepeque), and 60% in Area 5 (Marcala).

This department also suffers from poor access to health services; small deprived communities, in particular, face geographical and cultural accessibility problems. Community members' reliance on traditional healers and their superstitious believers are among the causes of poor cultural accessibility. Physical distance to western health units encourages this dependence.

One of the main causes of high infant and maternal mortality rates in the department is the lack of safe and clean birthing places. Pregnant women living near La Esperanza Hospital may deliver at the hospital, while those who live far from the hospital most likely will be attended by midwives in their own houses. When a normal delivery occurs, there is no concern. However, in case of a high risk pregnancy more likely given the nutritional conditions, poor access to health services may present serious problems.

Aiming at contributing to reducing IMR and MMR, the communities of the La Esperanza Hospital catchment area, with encouragement from the community advisory committee, established a maternal inn in the backyard of La Esperanza Hospital in February, 1996. The maternal inn is expected to reduce IMR and MMR which result from the inaccessibility of pregnant women in the rural mountainous areas of the Dept. of Intibuca to health care facilities. The actual construction of the inn came about in a participative fashion:

1) Planning was done by community members assisted by Social Participation Unit of MSP;
2) International agencies such as PAHO, UNDP, EC etc., NGOs such as World Vision, Save the Children etc., related government agencies including Sec.RRNN, SEP etc.,

private companies including Texaco Service Station, Hotel La Esperanza, Commercial Christian, and individuals provided initial advice, funds, materials, food, and transportation;

3) Community members donated free labor for construction.

Since the inauguration ceremony on February 16, 1996, marketing of the maternal inn has been conducted by the related organizations; however, information about the maternal inn has not reached all remote communities. Health staff in the communities has developed institutional and technical guidelines for the maternal inn. A financial system has not been well established yet. Operational costs of the maternal inn are planned to be covered by donations from the communities during the next couple of months, however, a clear financial and operational plan has not yet been developed.

With the goal of reducing IMR and MMR, construction of three MCH clinics in Concepcion, Santa Lucia, and Colomoncagua Municipalities, all of which are located in Dept. of Intibuca and in the border area with El Salvador, has been planned by the Health Region 2 Office.

La Esperanza Hospital, located in Intibuca Municipality, provides the most complex health care in Health Area 2. During 1995, 3,482 patients visited the hospital. 25.0% of these patients (872 patients) came from Intibuca Municipality, followed by La Esperanza Municipality and Yamaranguila Municipality. More than 55% of the patients came from the nearest three municipalities (refer to Table 7-2-3).

There are 26 health centers (CESAMOs and CESARes) and 1 area hospital in the Dept. of Intibuca (see Figure 7-2-4). The number of doctors and auxiliary nurses is very limited compared to the national average. As far as the morbidity and mortality during 1995, ARI has the highest morbidity rate among patients of La Esperanza Hospital, followed by pregnancies, diarrhea, and bronchial pneumonia. The main causes of death among patients of the hospital are pneumonia, cerebral vascular accidents, severe malnutrition, and low birth weight infant death etc. (refer to Table 7-2-4, 5).

Alcoholism is a very serious problem among the Lenca communities, often causing male violence against wives and children. Chagas is a problem in the border area with El Salvador, although only a few cases have been reported at La Esperanza Hospital.

(2) Goals and targets

1) Goals

The goal of the model health program for the rural poverty area is to promote preventive health awareness and to develop a "Healthy Village" model through strengthening of social participation capabilities and improvement of living conditions of the community members, as part of an integrated rural development model. The concept of the "Healthy Village" includes not only the aspects of health sector but also the ones of income generation and health-related infrastructure, which includes the following ideas:

- A village where the inhabitants live in safe and clean environment with good accessibility to public health services, basic health-related infrastructure, and primary education
- A village which has its own self-reliant community organization working for health promotion in the communities
- A village where the inhabitants actively participate in health promotion activities for the entire community with understanding importance of health
- A village where the inhabitants can equally enjoy the outputs of the health promotion and income generation projects

2) Target group

The target group of the program is the entire population living in the catchment area of the La Esperanza Hospital. The number of the beneficiaries are almost equal to the population of the Dept. of Intibuca, which has 124,681 inhabitants.

Several criteria were used for selection of the target communities. These included: national and municipal government interest in their development; implementation of community activities; donors and NGOs supported activities; implementation and operation of income generation activities; and degree of satisfaction of Basic Human Needs (BHN): accessibility to drinking water, type of housing, degree of household crowding, human waste disposal, and access to education. In addition, acceptance of the community leaders was respected in the selection process to develop more effective and sustainable programs for the communities. Based on the above, the municipalities of La Esperanza and Yamaranguila were selected.

La Esperanza Municipality is located in the center of the department and has a population of 5,847; 4,017 inhabitants (68.7%) live in the urban area and 1,830 (31.3%) in the rural. There are 896 households and the municipal area is 138.8m^2. The water supply coverage is 20.0% (Source: 1988 Census). La Esperanza Hospital and La Esperanza CESAMO service the community.

Several approaches have been taken by the La Esperanza CESAMO to increase accessibility to health services including outreach programs to communities and identification of high risk families by health volunteers. However, the CESAMO is facing difficulties in promoting effective activities due to lack of financial and technical resources and because of the extension of the catchment area.

Amongst the communities in the catchment area, Chogola, about 7 km south east of La Esperanza was selected as a sample community for in-depth information gathering about the actual needs of community members. Chogola has a population of 384; 195 male and 189 female, of the latter, 107 are women of reproductive age. Literacy rate is 8.1%. There are 60 households and the houses are dispersed throughout the mountainous area. 19 houses have access to well water and 28 have access to sanitation. The community does not have any nearby health centers. There is no available public transportation, therefore, community members usually walk to the hospital and/or the CESAMO in La Esperanza. It takes 1.5 hours to walk to either location. This community has been diagnosed as belonging to the #4 poverty level strata.

The municipality of Yamaranguila, also selected for early project implementation, is in the center of the department and has a population of 15,272; 617 inhabitants (4.0%) live in the urban area and 14,655 (96.0%) in the rural. There are 2,639 households and the municipality covers an area of 585.1m^2. The water supply coverage is 9.1%. The municipality only has one CESAR in the Community of Yamaranguila. The Health Area 2 has a plan for extension of Yamaranguila CESAR and for the construction of three new CESARes. However, despite the expansion, there may not be an increase in the staff of the Yamaranguila CESAR due to difficulties finding doctors and auxiliary nurses who are willing to work in such a deprived area.

In this municipality, the Community of Oloas, about 12 km south of the Community Yamaranguila and 1,825 m above the sea level, was also a sample community for detailed

information gathering. Oloas has a population of about 1,000. There are 116 households dispersed in the mountainous areas as is the case in other nearby communities. 96 of these households have access to well water. The community has no close-by health centers, therefore, the population walks to the Yamaranguila CESAR. Some of the more isolated members of the community walk nearly 3 hours to reach the hospital. The community has been classified in the level #5 poverty strata.

(3) Development concept

1) Concentration on prioritized strategies clarified using the proposed matrix

Among the various health problems, high IMR and MMR, malnutrition, and poor access to water & sanitation have been identified as the most serious in the target area (see Figure 7-2-5).

Using the matrix, seven strategies including alleviation of poverty, improvement of access to food, improvement of access to water/basic sanitation, improvement of health education, improvement of social participation, reduction of total fertility rate, and improvement of access to health services are considered to be the most effective to reduce the high IMR and MMR found in the Dept. of Intibuca.

For solving other problems such as malnutrition, violence mainly caused by alcoholism, vector borne diseases, Chagas, and environmental health related conditions, improvement of social participation is considered to be one of the most promising countermeasures. Occupational health, as a result of misuse of pesticides, can be prevented by improvement of legal and institutional framework and health education.

Considering the problems mentioned above, as well as, the limited available resources and technologies in the target area, alleviation of poverty, and improvements of access to food, and water/basic sanitation, improvements of health education, of social participation, and of access to health services are the more effective strategies amongst the fifteen strategies proposed by the matrix. These six strategies have been incorporated into the rural poverty area model health program.

2) Promotion of participatory development

The program has been developed through participatory approaches based on consensus among concerned agencies, organizations, and community representatives (see Figure 7-2-6).

Workshops and small discussions were carried out with staff from the Health Region 2 Office, Area 2 CESAMO/CESAR, municipal government officers, community leaders, community representatives, donors, and NGOs.

The purpose of these meetings was i) to respect participatory development approaches, ii) to identify the current problems, the existing countermeasures, and the constraints, iii) to formulate jointly the model health program and model projects, and iv) to gain a consensus of support for the strategy from the concerned people.

Based on the results of those workshops and small discussions, human resources development and institution building were given high priority for development of the program and the model projects.

Community development committees such as CODEPI and CODEMs* exist in the target area. However, they neither have their own financial and technical resources nor permanent operational staff. CODEMs are expected to be key organizations of community development in each municipality. Therefore, the program will focus on supporting institution building of CODEMs. CODEPI will play a coordination role for CODEMs.

A program implementation organization is required to support CODEPI and CODEMs institution building. The newly established organization will function as a tool for strengthening community activities jointly with staff dispatched from the Health Region 2. These organizations will serve as counterparts for the program and will receive technology transfer in order to promote practical social participation activities, human resources development in the communities, and institution building of community development committees.

* CODEPI (Comision de Desarrollo Departamental de Intibuca) and CODEMs (Comision de Desarrollo Municipal) are official community development committees in the Dept. of Intibuca, which were organized under the technical and financial assistance of the UN Programs in 1994 and validated by the Executive Decree 10-95.

3) Development of a "healthy village" model

In the target area, most of the community works in the agriculture and forestry sectors. They are small-scale farmers and do not have the technical and financial resources required for improving their production.

A "healthy village" model program, which will be designed to improve the health conditions in the target area, consists of two components: agriculture development and improvement of living conditions. The agriculture development component is necessary for improving accessibility to food and income generation activities. Small-scale and basic approaches should be the basis of this program rather than large-scale improvement of agriculture infrastructure.

Transfer of technology for soil analysis, small-scale irrigation, farming, seed selection, proper utilization of fertilizers and pesticides, food processing, quality control, and marketing form part of these small-scale approaches. In addition, provision of fertilizer/pesticide/seeds, lending of agriculture equipment, fostering small-scale food processing industries, and market development are other key factors for agriculture development in the target area.

The living conditions improvement component includes public health approaches. Improvement of accessibility to drinking water, provision of the basic food basket, health education including hygiene, nutrition and food preparation are the main elements.

The two projects described below are the good examples of the effectiveness of integrated programs.

The PDAE (Proyecto Demostrativo de Agricultura) project, implemented by FHIA (Fundacion Hondurena de Investigacion Agricola) under the technical and financial cooperation of the Japanese Government since 1992, has provided technology for planting, utilization of fertilizers and pesticides etc. to about 150 farmers. Since 1995, FAO has also participated in this project providing technical assistance for empowerment of women through income generation by growing apples.

This project is expected to be a key technical resource center for the proposed model health program for rural poverty area. Lessons learned through this experience will assist in the development of a "healthy village" model suitable to the target area.

Fruitful outputs of the Guayape project, the agriculture development program implemented in cooperation with CIDA (Canadian International Development Agency) in the Dept. of Olancho, also indicate that activities for improving living conditions function effectively and can be one important component of the agriculture program. Several NGOs have participated in the project and promoted activities for improving nutrition conditions of community members. This, in turn, has contributed to improvement of living condition.

4) Coordination among related organizations

In cooperation with the MSP Social Participation Unit, and with support from the ACCESO project, the Health Area 2 has developed its annual health plan. The plan has three objectives: MCH and health infrastructure improvement and strengthening of administration. Improvement of access to health services, organization/facility management, efficiency of referral system, drug supply system, facility/equipment management, and human resources development will be the main strategies to attain these objectives. As will be discussed below, the Healthy Village Training and Extension Center, which is proposed for the model health program, can also serve as coordination point for the smooth implementation of the ACCESO project.

The water supply project in Comayagua has provided the Health Region 2 Office with technology transfer and equipment for planning and implementing deep well digging projects in rural areas. The proposed Center will provide these technologies and lend the necessary equipment to communities in order to improve their accessibility to drinking water.

NGOs have proven to be effective grassroots level project implementors. Some activities have included health volunteer, health education, and agriculture training etc. NGOs have developed special experience working with communities and constitute a channel for local initiative and participatory development. The proposed program should be encouraged to collaborate with local and international NGOs in project design, implementation, and operation/management.

For example, World Vision, an NGO working in Honduras, has a training and experimentation center in Yamaranguila which provides training to farmers emphasizing integrated farming and productivity improvement. All vegetables produced by the center are marketed as compensation for training center expenses. The center also provides seed

funds for farmers in training courses and teaches them how to access and utilize the credit system. Exchanging technical information with this training center will be helpful for the program.

(4) Model project

Incorporating all of the previously discussed development concepts: prioritized strategies, participatory development, application of a "healthy village" model, and coordination among related organizations; the model project 1, entitled "Establishment of Healthy Village Training and Extension Center" aimed at improving capabilities of community activities was developed.

Model project 2, entitled "Improvement of Community Member' Accessibility to Health Services" focuses primarily on health sector approaches.

The Figure 7-2-7 shows the position of the two model projects for developing the "healthy village" program.

Details of each model project follow:

1) Model project 1: Establishment of "Healthy Village Training and Extension Center" (see Figure 7-2-8)

(A) Objective

A "Healthy Village Training and Extension Center" will be established in order to promote community activities by providing base 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 (see Figure 7-2-9).

(B) Components

(I) Activities

i) Social participation sector

- To serve as public relations for community activity promotion
- To provide institutional strengthening of existing committees: CODEPI, CODEMs, and community councils

- To establish CODECOs* in each community
- To develop data base of community development activities and serve as information resource center
- To serve as a community activity base in municipalities and Department
- To develop a database about the community development activities in the Dept. of Intibuca

ii) Health sector

- To provide health and food preparation education for community leaders
- To train health staff (midwives and MSP health volunteers)
- To support the activities of CESAMOs, CESARes, and Maternal Inn
- To provide technology transfer related to planning and implementation of water resource development project for community leaders; necessary equipment will be lent by the Center's lending division

iii) Agriculture sector

- To provide community members with basic agriculture knowledge and practice, such as organic manure preparation
- To operate demonstration farm located near the training center particularly cash crop and fruit tree cultivation
- To implement a sub-project to demonstrate cash-crop and tree cultivation skills in the community
- To promote school gardening demonstration farms, such as ornamental flowers and mushroom cultivation
- To operate an equipment lending system on a fee basis (vehicles, drills for well digging, pumps for small size irrigation, grinders of maize preparing tortilla, etc.)
- To establish farmers' cooperative to facilitate access to community funds for income generation
- To provide good quality seeds and training on economical and proper use of pesticides and fertilizers through Integrated Pesticide Management (IPM)
- To provide practical training in small scale food processing and food preservation
- To provide marketing skills and sell the products in the center

* CODECO (Comision de Desarrollo Comunitario) is a development committee organized and operating at the community level.

- To provide basic environmental conservation knowledge to protect forestry
- To encourage community leaders to apply existing forest protection laws

(ii) Inputs (Initial program investment) for establishment of the Center

There are two options. Option 1 is to construct a new Center in an area located near La Esperanza Hospital. Expected advantages of building the Center near the hospital is the good location for accessibility to community members visiting the area hospital, demonstrating its function of serving as a community activity promotion center collaborating with the area hospital, and utilizing the facilities and technical resources of the area hospital and the maternal inn. The initial investment cost is estimated relatively high, however, the operational cost can be cut down through constructing the center with minimum facilities.

Option 2 is to renovate the existing facilities of Sec.RRNN Training Center in Santa Catarina, located near the Dept. of Intibuca. This facility was originally constructed as a training center for agricultural extension workers and is currently used by the Swiss-Honduras agriculture training project. It does not have an operational and financial plan after the year 1998. Advantages of renovation of the Santa Catarina Training Center are to utilize the existing facilities and to save the initial investment costs. However, the operational cost will be more expensive than in the case of Option 1 because the size of the existing training center is very large.

Considering the advantages and disadvantages of these two options, Option 1 is proposed for the Model Project 1. The estimated initial investment costs for these options are as follows:

i) Option 1: Construction of a new Center building

1 large training room (100m^2), 1 small training room (50 m^2)
1 director's room (30 m^2), 1 staff room (70 m^2)
1 equipment storage and workshop (400 m^2)
facilities for practical training in food processing (100 m^2)
demonstration farm (500 m^2)

Estimated cost: US$ 1,250,000

ii) Option 2: Renovation of Sec.RRNN Training Center in Santa Catarina

Estimated cost: US$ 310,000

iii) Equipment for the Center

Option 1/Option 2:

vehicle, copying machine, desks, chairs, facsimile, cabinet, AV equipment, generator, drills for sinking wells, equipment for food processing (canning etc.)

Estimated cost: US$ 250,000

iv) Renovation of the existing CODEPI and CODEM offices/training centers in La Esperanza and Yamaranguila

Estimated cost: US$ 70,000

v) Equipment for CODEPI and CODEM offices in La Esperanza and Yamaranguila

copying machine, AV equipment, desks, chairs, generator, cabinet etc.

Estimated cost: US$ 80,000

vi) Initial operational cost for the center

Option 1:

Technical/clerical staff	Estimated cost: US$ 20,000/year
Instructors	Estimated cost: US$ 8,400/year
Other operational cost	Estimated cost: US$ 8,000/year

Option 2:

Technical/clerical staff	Estimated cost: US$ 36,000/year
Instructors	Estimated cost: US$ 8,400/year
Other operational cost	Estimated cost: US$ 9,600/year

vii) Initial operational cost for CODEPI and CODEM offices

Clerical staff (volunteers from the communities)

Estimated cost: US$ 0

Other operational cost	Estimated cost: US$ 6,000/year

viii) Total of the investment costs

Option 1:

Construction of the center	Estimated cost: US$ 1,650,000
Initial operational cost	Estimated cost: US$ 42,400/year

Option 2:

Renovation of the center	Estimated cost: US$ 710,000
Initial operational cost	Estimated cost: US$ 60,000/year

(III) Financial and technical resources

- Possible financial resources for initial investment cost

Domestic resources: grant aid from FHIS, PRAF and BANADESA

Foreign resources: grant aid of ACCESO project and/or other foreign-funded project and/or loan

- Possible financial resources for operation cost

  Domestic resources: allocation of 5% of the national budget to municipalities

- Possible technical human resources

  Domestic resources: experts from MSP, SANAA, SEP, and Sec.RRNN
  Foreign resources: experts/consultants/volunteers in public health, leadership training, community fund operation, farming, cultivation, social worker, community participation etc.

Dispatch of a group of volunteers and/or experts will be more effective rather than an individual expert dispatch.

(C) Management/Operation

i) *Implementation organization:* Health Region 2 (Health Area 2 Office)

ii) Coordination required: Department office, Municipality offices, AMHON, Sec.RRNN, and SEP

iii) Organization of the center: - director (dispatched by Region 2)

- manager of Social Participation Division (social worker dispatched by Region 2)
- manager of Health Division (nominated from the community leaders)
- manager of Agriculture Division (nominated among the community leaders)
- chief of Equipment Lending Division (nominated among the community leaders)
- secretary, drivers etc.

(D) Effectiveness

The project will especially contribute to accomplish five of the fifteen strategies of the NMHP: social participation improvements, health education intervention, access to water/basic sanitation, access to food, and poverty alleviation.

(i) Contribution from the political aspect

Community development organizations including CODEP and CODEMs are to be well organized and well functioning. It will help improve project planning and implementation capabilities of the local governments and communities and then contribute to smooth promotion of decentralization.

(ii) Contribution to the Matrix proposed by the Study

Through the activities of the Center, the system of the social participation will be strengthened. As for the improvement of health education intervention, the Center will contribute to effective dissemination of information on living conditions improvement,

appropriate to actual local needs through its health education and demonstration activities. Water supply and management systems improved through community activities led by CODEMs utilizing the knowledge and the equipment provided by the Center, which will improve the accessibility to water and basic sanitation in the communities. In addition, utilizing production and marketing knowledge, equipment lending system, good quality seeds, fertilizer, and pesticide, and community funds provided by the Center, the agriculture production for home consumption and income generation in the target area will be improved. Therefore, the project will contribute to promotion of the strategies of poverty alleviation and improvement of access to food.

Through promoting these five strategies mentioned above including improvement of social participation, health education intervention, access to water and basic sanitation, access to food, and poverty alleviation, serious problems in the rural poverty area such as high IMR, MMR, malnutrition, poor access to water and basic sanitation will be lessened.

(III) Contribution to resource saving

Through strengthening of the social participation system, coordination activities and technical information exchanges related to community development will be well promoted among communities, donors, and NGOs utilizing the Center facilities. This will contribute to the efficient and effective project planning and implementation with utilizing limited financial and human resources.

2) Model project 2: Improvement of community members' accessibility to health services (See Figure 7-2-10)

(A) Objective

Institutional and physical functions of Health Area 2 Office, La Esperanza and Yamaranguila CESARes will be strengthened for attaining the objectives: promotion of preventive health awareness programs among the communities and improvement of accessibility to health services.

(B) Components

(I) Activities

- Institution building of each health provider from hospital to midwife level

- Improvement of CESAMO/CESAR staff's outreach consultations to the deprived, distant communities
- Training of health staff on improvement of outreach programs
- Improvement of communities' interest in health services: holding a health festival, healthiest community/child award, and group medical check-ups

(II) Inputs (Initial program investment):

- Renovation of the facilities of Health Area 2 Office

  Estimated cost: US$ 6,000

- Equipment provision to Health Area 2 Office and La Esperanza and Yamaranguila CESARes

  vehicles, radio system, copy machine, equipment, typewriter, generator, etc.

  Estimated cost: US$ 100,000

- Initial operational cost

  Instructors — Estimated cost: US$ 6,000/year
  Other operational cost — Estimated cost: US$ 6,000/year

- Total of initial investment cost

  Renovation of facilities — Estimated cost: US$ 106,000
  Initial operational cost — Estimated cost: US$ 12,000/year

(III) Financial and technical resources

- Possible financial resources for initial investment cost

  Domestic resources: grant aid from FHIS, PRAF and BANADESA
  Foreign resources: grant aid of ACCESO project and/or other foreign-funded project and/or loan

- Possible financial resources for operation cost

  Domestic resources: allocation of 5% of the national budget to municipalities

- Possible technical human resources

  Domestic resources: experts from MSP
  Foreign resources: experts/consultants/volunteers of public health, nurse, midwife, social worker etc.

(C) Management/Operation

Implementation organization: Health Region 2 (Health Area 2 Office)

Coordination required: Department office, Municipality offices, AMHON, and SEP

Organization: Existing organization of Health Area 2, CESAMO, and CESAR

(D) Effectiveness

The project will especially contribute to accomplish two of the fifteen strategies of the NMHP: improvement of access to health services and improvement of referral system.

(I) Contribution from the political aspect

Through improvement of accessibility to health services, the project will contribute to equity and equality promotion among the community members including those living in the deprived areas.

(II) Contribution to the Matrix proposed by the Study

Communities' understanding of the health services will be improved through promotion activities and outreach programs by the CESAMO and CESAR. Through outreach programs and safe and clean birthing places, high risk pregnant women will be effectively identified in the communities (and referred). This will contribute to improvement of accessibility to health services; MMR and IMR are expected to decline.

Referral systems to maternity and primary health care services will be established and functioning well. A preventive health outreach program implemented by the CESAMO and CESAR will serve as an effective health service point in communities. It will promote the strategy of improvement of referral systems.

(III) Contribution to resource saving

Without establishing a new system or new building, this project will promote community members' understanding on and accessibility to health services through strengthening the outreach programs of the CESAMO and CESAR.

7.2.2 Program for urban poverty area

(1) Background of target area

Among the several existing urban marginal areas, the urban marginal area in Tegucigalpa, capital city of Honduras, in the Francisco Morazan Dept. was selected as a model area based on the following criteria :

1) the health model will cover a larger number of beneficiaries;

2) water/sanitation projects are being implemented;

3) legal land title provision programs are in process;

4) social participation organizations are being formed;

5) high rate of population with very high NBI indicators.

The target area is located in the Francisco Morazan Dept. and its population is covered by the health services of the Metropolitan Health Region Office. To outline the target area, statistical data from the Francisco Morazan Dept. and the catchment area of the Metropolitan Health Region Office was used, since there is no specific statistical data which describes the urban marginal area of Tegucigalpa. The statistical data characterizing the Francisco Morazan Dept. is shown in Table 7-2-6.

Based on the nation-wide population projection project implemented by SECPLAN in 1992, and funded by United Nation Population Fund, the population of the Francisco Morazan Dept., which had a population of 828,000 in 1988, increased to 994,000 in 1995. It is projected that the population will be 1,109,000 inhabitants by the year 2000, 1,224,000 by 2005, and 1,335,000 by 2010 with an annual growth rate of 2.0 over the period. This growth rate, which includes the urban and rural areas in the department, is relatively low compared to the projected national average of 2.3.

Francisco Morazan is the most populous department of Honduras, with more than 60% of its population living in the urban marginal area. In 1961, 44,021 immigrants came into the department and 21,774 migrated out to other departments; with a net balance of +22,247. Net balance in 1974 was +54,702 and in 1988, +117,663. Most of these immigrants live in the urban marginal areas. Thus, with a similar migration pattern, the population in the target area is expected to grow very rapidly in the next 15 years.

The department has the lowest maternal mortality rate (MMR) (145/100,000 live birth in 1990) after the Dept. of Islas de la Bahia. This is two thirds the national average of 221/100,000 live birth.

Although the department has a very low MMR, the rapid growth of the population in the urban marginal areas has brought about serious problems for maternity services. Hospital Escuela is the only public hospital which provides maternity services for the population of the target area. Both high and low risk deliveries are attended here. Waits are frequents and congestion is common. Unchanged, his situation will contribute to increased IMR and MMR.

As a solution to this problem, it has been proposed that San Felipe Hospital, another public hospital located in the target area, be renovated and enlarged to provide maternity services. The renovation project is planned to be implemented by the MSP under the technical and financial assistance of the Japanese Government starting in June, 1996.

In the department, 67.84% of the total population has access to water. The rate is higher than the national average of 56.58%. However, 266,373 inhabitants do not have access to water in this area.

SANAA and UNICEF have actively promoted water supply projects in the urban marginal area of Tegucigalpa. Financial assistance has been provided through bilateral donors such as Sweden and Japan. These projects have greatly reduced inaccessibility to water. Since 1987, 61 communities have been provided water supply systems through these projects. A new project covering additional communities is currently under implementation with the financial assistance of the Japanese Government.

The SANAA and UNICEF projects have adopted social participation approaches. Community members provide labor for construction of the facilities. Communities must establish a water board for operating the water supply system in the communities. Water boards not only operate water supply facilities but also promote community activities.

The Metropolitan Health Region Office has a catchment area of 733,056 inhabitants and about 140,000 households in 1995. There are 478 communities in the region, 189 of which are located in the marginal area (refer to Table 7-2-7).

The Metropolitan Health Region has two Health Areas: Health Area 1 (Comayaguela) and Health Area 2 (Tegucigalpa). 6 national public hospitals, 2 IHSS hospitals, 15 CESAMOs and 16 CESARes (see Figure 7-2-11) are the health service providers located in the region; neither the national hospitals nor the IHSS hospitals are under the health region's jurisdiction.

The principal causes for consultation in the CESAMOs and CESARes in the catchment area during 1995 were ARI, parasitic infections, malnutrition, and diarrhea. (refer to Table 7-2-8). The main causes of death from January to October were accident /violence, pneumonia, cardiac disease, and AIDS (refer to Table 7-2-9).

In the urban marginal area, accident and violence caused the greatest number of death. These problems contribute to the congestion of the emergency unit of the Hospital Escuela (refer to Table 7-2-10). As a countermeasure against this problem, three emergency clinics are planned to be established in the marginal areas of: Colonia Villanueva, Colonia Nueva Suyapa, and Colonia Las Crucitas.

These newly established clinics are expected to provide primary emergency services, principally for patients living in these urban marginal areas. The construction project will be implemented by MSP simultaneously with the renovation project of the San Felipe Hospital under the technical and financial assistance of the Japanese Government.

(2) Goals and targets

1) Goals

The goal of the program for the urban poverty area is to improve the access to preventive and emergency care at the primary level, mainly focusing on maternal and child health services and emergency health care: and to contribute to organization and unification of communities in the marginal areas by strengthening social participation capabilities.

2) Target group

The target group of the program is the entire population living in the urban marginal area in Tegucigalpa. The number of the beneficiaries is 733,056 inhabitants based on the population living in the catchment area of the Metropolitan Health Region Office.

In collaboration with the Metropolitan Health Region and the Tegucigalpa Municipality, target communities of Colonia Villa Cristina and Colonia Villanueva were selected utilizing participatory approach methodology and in-depth information gathering.

To select these communities, several criteria were used: national and municipal governments interest in the development of those areas; implementation of community activities; existence of donors and NGOs supported activities; on-going operation of income generation activities; high degree of unsatisfied Basic Human Needs (see Table 7-2-11); accessibility of drinking water; type of housing, household crowding; availability of human waste disposal; and access to education. In addition, acceptance of the community leaders was respected in the selection process to assure development of effective and sustainable programs in the communities.

Colonia Villa Cristina is located in the catchment area of the Alemania CESAMO in Health Area 1. The Alemania CESAMO, located in the northern part of the city, was established in 1979 through efforts of the Catholic Church and the local community. The catchment area has 22,287 inhabitants living in 12 communities. Colonia Villa Cristina, selected as the second priority community because of the seriousness of its health conditions, has a population of 3,726.

80% of the community has been classified as very poor or poor. Most families live in very crowded houses. 55% of the population older than 20 is illiterate. The Colonia is the second highest in terms of high risk pregnancies and of malnutrition cases in children under 5 years. Diarrhea, ARIs, AIDS, and violence are also identified as priority problems.

With financial and technical assistance of international and bilateral donors and NGOs, the community has implemented several activities to address these problems. The Patronato, which is a decision making body of the community, and the Water Board have led these activities. Save the Children has implemented several projects related to child survival, social benefit, health promotion, and training in this area. World Vision provides training, sanitation, and dental health projects. SANAA and UNICEF are implementing a water supply project which will provide a water tank and public faucets in the community.

Colonia Villanueva is located in the catchment area of the San Benito CESAMO in Health Area 2 (see Figure 7-2-12). The CESAMO is in the south-eastern region of Tegucigalpa. The catchment area includes the 2 marginal urban communities of Colonia Los Pinos and Colonia Villa Nueva and 7 rural communities with a total population of 31,418. Colonia Villa Nueva has a population of 24,335. The areas of geographic influence Los Pinos and Villa Nueva have a crowding index of 5.2 inhabitants /household.

The main causes of death in the area are violence, cardiac arrest and AIDS. The principal causes of demand of services are ARI, parasitic infections, skin diseases and diarrhea, especially in the less than 5 years old. Dengue is a serious problem in Villa Nueva. The catchment area has the second highest incidence of AIDS in the Metropolitan Region. In order to cover the rapidly growing population in Villa Nueva, a new CESAR is currently being constructed in the community. The San Benito CESAMO physicians will provide periodic service at the new CESAR.

With assistance from the Catholic Church and leadership from the Patronato and Water Board, many community activities have been implemented. NGOs such as Compartir etc. promote health education, vocational training, street children programs, day care center, and youth sports projects etc. in the community.

(3) Development concept

1) Concentration on prioritized strategies clarified using the proposed matrix

Malnutrition, poor access to water and sanitation, violence, and vector borne diseases are among the most serious health problems in the target area (see Figure 7-2-13).

Based on the analysis, five strategies including alleviation of poverty, improvement of access to food, improvement of health education, improvement of social participation, and reduction of total fertility rate are expected to contribute to alleviation of malnutrition.

High IMR and MMR are serious problems in the target areas; however, they are lower than those of the rural poverty area, and below the national average. In 1990, the MMR in the Dept. of Francisco Morazán was estimated at 145/100,000, while for the Dept. of Intibucá it was 534/100,000.

Improvement of access to health services, organization/facility management, efficiency of referral system, drug supply system, and facility/equipment management, and human resources development, which will contribute to solving these problems, are included in the ACCESO project being implemented by the MSP. In addition, the renovation project for the San Felipe Hospital and for construction of three emergency clinics in the urban marginal areas in Tegucigalpa, to be implemented by MSP with technical and financial assistance from the Japanese Government, will contribute to alleviation of these problems.

To reduce violence, which is a very serious problem in urban marginal areas, there is a need to improve the legal and institutional framework. To combat vector borne diseases, especially dengue, and improve environmental health related conditions, increased access to water and basic sanitation and social participation are considered to be the most effective countermeasures.

Considering the problems mentioned above as well as the limited resources and technologies in the target area, improvement of access to water/basic sanitation, improvement of health education, improvement of social participation, and improvement of

access to health services are the more effective strategies from the fifteen strategies identified in the matrix. These four strategies are to be incorporated into the urban poverty area model health program.

2) Promotion of participatory development

The program has been developed through participatory approaches based on consensus among the concerned agencies, organizations, and community representatives (see Figure 7-2-14).

Workshops and small discussions were carried out with staff from the Metropolitan Health Region Office and two CESAMOs, municipal government officers, community leaders, and community representatives.

The purpose of these meetings were i) to respect participatory development approaches, ii) to identify the current problems, the existing countermeasures, and the constraints, iii) to formulate jointly the model health program and model projects, and iv) to gain a consensus from the people concerned.

Reflecting on the results of those workshops and small discussions, institution building for supporting community activities and improvement of a health service network were given high priority for development of the program and model projects.

3) Strengthening of existing community activities

The target area has several well established community organizations such as Patronatos, Water Boards, Parents Groups etc. Many projects have been implemented with financial and technical assistance of international and bilateral donors, NGOs, and churches.

Among those, water supply projects have, in general, been successful. Water Boards have functioned well. Income is collected from the sale of water. These earnings, in turn, are invested in future water supply projects. However, there is little coordination among community organizations and there are no community facilities.

Most of the community residents have migrated from other areas and they live temporarily in these communities. Although water supply projects have been well implemented, vocational training and street children programs have been less successful. There is little community spirit, mostly because the residents have recently migrated to the zone. Vandalism by community members themselves is a serious problem.

For promoting community activities in the target area, the Patronato and Water Boards are expected to play important roles based on their current functions and experiences. Water Boards will be included as key players in the proposed program.

CESAMOs are also key players in community development. Gradually, the role of the CESAMO's social worker for promoting community activities has been accepted. These activities are generally directed at health issues.

Considering this situation, CESAMOs, the Patronato, and Water Board already offer existing organizations to be supported by the model urban area health program. Therefore, institutional and physical strengthening for supporting their activities will be included in the program.

4) *Improvement of awareness and utilization of health service network in the primary level*

To reduce the congestion in the maternity and emergency wards of Hospital Escuela, a new project is to be implemented by MSP with financial and technical assistance from the Japanese Government.

The project consists of the renovation of the San Felipe Hospital and the construction of three new emergency clinics. With the new project, it is anticipated that Hospital Escuela will be responsible for complex trauma cases and for high risk pregnant women. San Felipe Hospital will attend normal deliveries. On the other hand, the three clinics will treat injuries and accidents requiring minor surgery and will provide immediate management before referring complex surgery and trauma to Hospital Escuela.

Institution building and strengthening of the referral system are essential in order to establish an effective health service network. Informing residents about the services available at the clinics and Hospital San Felipe will be critical for appropriate use of the new facilities. Proper start up and problem solving capacity will be required if users are to have confidence in the new facilities and services. Because the renovation and construction project does not consider these components, they will be included into the health model program for urban poverty area.

5) Coordination among related organizations

In cooperation with the MSP Social Participation Unit and with support from the ACCESO project, the Metropolitan Health Region Office has developed its annual health plan. The plan includes various components to improve management, human resource development, and accessibility to health services in the Metropolitan Health Region. Strengthening of access to health services, organization/facility management, efficiency of referral system, drug supply system, and facility/equipment management, and human resources development will be the main strategies to attain these objectives. As will be discussed bellow the new resource center proposed for the model health program can also serve as a coordination point for the smooth implementation of the ACCESO project.

A new water project covering several communities including Colonia Villa Cristina is implemented by SANAA and UNICEF with financial and technical assistance of the Japanese Government. This project is expected to improve the accessibility to drinking water. The center proposed here will support these projects and the Water Boards established by them can provide technical information to the new resource center.

NGOs including Save the Children, Word Vision and others have proven to be effective grassroots level project implementors. Some support activities have included health volunteers, health education, and vocational training. NGOs have developed special experience working with communities and constitute a channel for local initiative and participatory development. The proposed center should promote collaboration and coordination with local and international NGOs in project design, implementation, and operation/management.

(4) Model project

Considering all of the development concepts mentioned above: prioritized strategies, participatory development approaches, strengthening of existing community activities, and coordination among related organizations; the model project 1 entitled "Improved actions to promote social participation activities" has been developed. The model project 2 entitled "Improvement of awareness and utilization of health service network in the primary level" has been formulated following the concepts of prioritized strategies and improvement of awareness and utilization of health service network.

It should be emphasized that the organizations improved by these two projects are the same and that it would be more effective if they were implemented at the same time making full use of technical and financial resources. Details of each model project are as follows:

1) Model project 1: Improved actions to promote social participation activities (see Figure 7-2-15)

(A) Objective

The objective of the project is to create a receptive environment for promoting social participation activities in the communities by strengthening the social participation unit of the Metropolitan Health Region Office and improving the support for those activities in the Metropolitan Health Region Office and the CESAMOs in the target communities.

(B) Components

(I) Activities

- Institutional strengthening of the Metropolitan Health Region Office for promotion and coordination of social participation activities in communities:
- Establishment of a "Social Participation Project Resource Center" in the Metropolitan Health Region Office, whose main purpose is to demonstrate successful activities, to improve consciousness about social participation among those concerned as well as the general public, and to revive feedback from monitoring and evaluation activities. Initially activities are will focus on the two target communities
- Institutional building of CESAMOs as project base in the communities
- Strengthening Patronato/Water Boards as key players for promoting community development activities

(II) Inputs (Initial program investment):

- Improvement of the facilities

  for renovation of the facilities in the Metropolitan Health Region Office to add functions of the Resource Center: Estimated cost: US$ 20,000
  for renovation of the Alemania and San Benito CESAMOs' facilities to install equipment:
  Estimated cost: US$ 10,000

- Provision of equipment

  for the Center facilities to have information systems and public relations materials development capacity: computers, copy machine, AV equipment, generator, binding machines, tables, chairs, cabinet, etc.

Estimated cost: US$ 85,000

for Alemania and San Benito CESAMOs to have develop information systems and public relations development capacity

Estimated cost: US$ 35,000

- Initial operational cost

Staff of the Center	Estimated cost: US$ 15,600/year
New staff for two CESAMOs	Estimated cost: US$ 6,000/year
Other operational cost	
the Center	Estimated cost: US$ 4,800/year
two CESAMOs	Estimated cost: US$ 3,000/year

- Total initial investment costs

Renovation/equipment provision	Estimated cost: US$ 150,000
Initial operational cost	Estimated cost: US$ 29,400/year

(III) Financial and technical resources

- Possible financial resources for initial investment cost

Domestic resources:	grant aid from FHIS and PRAF, and/or loan
Foreign resources:	grant aid of ACCESO and/or other foreign-funded projects and/or loan

- Possible financial resources for operational; cost

Domestic resources:	allocation of 5% of the national budget to municipalities

- Possible technical human resources

Domestic resources:	experts from MSP, SEP
Foreign resources:	experts/consultants/volunteers in public health, social participation, and/or information management sectors

Dispatch of a group of volunteers and/or experts will be more effective rather than an individual expert dispatch.

(C) Management/Operation

i) Implementation organization:	Metropolitan Health Region Office
ii) Coordination required:	Municipality office, AMHON, and SEP
iii) Organization of the center:	Manager of the center chief of development unit chief of public relations unit chief of information systems unit operator secretary
iv) New staff for two CESAMOs	Personnel for information system

(D) Effectiveness

The project will especially contribute to accomplish two of the fifteen NMHP strategies: improvement of social participation and improvement of water/basic sanitation.

(I) Contribution from the political aspect

The function of promoting social participation activities in the Metropolitan Health Region Office will be strengthened being recognized as a "Health Promotion and Information Center" in the entire urban marginal areas of the Tegucigalpa Municipality. This will improve the project planning and implementation capabilities of the Health Region Office and the communities, which will contribute to the decentralization promotion.

(II) Contribution to the Matrix proposed by the Study

Social participation will be promoted through the Center activities. Its liaison systems among health providers, municipality, donors, NGOs, and communities will be developed. CESAMOs in the target communities will be improved for supporting community activities. In the communities the Patronatos and Water Boards' capabilities for planning and implementing community activities will be strengthened; organization and unification of communities will be fostered. The project contribute to improvement of water and basic sanitation, also. The management structure of Water Boards will be improved for smooth implementation and operation of water supply projects in the communities, while the Patronato will be strengthened for supporting Water Boards activities. The funds saved by the Water Boards will be utilized for effective and efficient improvement of water supply systems.

(III) Contribution to resource saving

Through strengthening of the social participation system, coordination activities and technical information exchanges related to community development will be well promoted among communities, donors, and NGOs utilizing the Center facilities. In addition, health providers, donors, municipality, and NGOs can reach actual needs of the community members through the Center activities, which will help them develop more effective and sustainable project plans.

2) Model project 2 : Improvement of awareness and utilization of the health service network in the primary level (see Figure 7-2-16)

(A) Objective

The objective of the project is to promote the proper and effective use of the planned emergency clinics and renovated San Felipe Hospital with the resulting goal of improved emergency and MCH services. The target of these improved services is the Tegucigalpa marginal area residents.

(B) Component

(I) Activities

- Development of a liaison and improved referral system among existing and newly established emergency clinics and maternity wards at Hospital Escuela and San Felipe Hospital
- Improvement of the CESAMO staff's outreach activities related to prenatal, neonatal, and postnatal care, as well as, health education about hygiene, vector control, prevention of violence and accidents.
- Marketing of proper use of maternity and emergency health services at the primary level

(II) Inputs (Initial investment of the project)

- Improvement of the facilities

  for renovation of the facilities in the Metropolitan Health Region Office to add training and public relations activities

  Estimated cost: US$ 10,000

  for renovation of the facilities in two CESAMOs for training and increased

  Estimated cost: US$ 12,000

- Provision of equipment

  for the Metropolitan Health Region Office for staff training and increased delivery of services as a result of outreach program

  Estimated cost: US$ 67,000

  for Alemania and San Benito CESAMOs for training and public relations

  Estimated cost: US$ 70,000

Initial operational cost

New staff for two CESAMOs — Estimated cost: US$ 6,000/year

Other operational cost

for Region M. — Estimated cost: US$ 3,600/year
for two CESAMOs — Estimated cost: US$ 2,400/year

- Total initial investment costs

Renovation/equipment provision — Estimated cost: US$ 159,000
Initial operational cost — Estimated cost: US$ 12,000/year

(III) Financial and technical resources

- Possible financial resources for initial investment cost

Domestic resources: grant aid from FHIS and PRAF, and/or loan
Foreign resources: grant aid of ACCESO and/or other foreign-funded projects and/or loan

- Possible financial resources for operational; cost

Domestic resources: allocation of 5% of the national budget to municipalities

- Possible technical human resources

Domestic resources: experts from MSP, SEP
Foreign resources: experts/consultants/volunteers in public health, nurse, midwives, social worker

(C) Management/operation

i) Implementation organization: Metropolitan Health Region Office

ii) Coordination required: Municipality offices, AMHON, and SEP

iii) New staff for the Region Office: chief of management of health service network

iv) assistant (training and public relations)

v) New staff for two CESAMOs: chief of management of health service network

(D) Effectiveness

(I) Contribution from the political aspect

Through improvement of accessibility to health services, the project will contribute to equity and equality promotion among the community members. In addition, the project will help promote community members' awareness and understanding about proper use of the health service network including the emergency clinics which are newly introduced and currently being designed in the urban marginal area in Tegucigalpa.

(II) Contribution to the Matrix proposed by the Study

A primary level network will be established in the target communities, including maternity and emergency services. Proper and effective use of Hospital Escuela, Hospital San Felipe, and the new emergency clinics will be understood by the community. This knowledge will contribute to diminish congestion at Hospital Escuela and improved emergency, maternity, and MCH services. The CESAMOs will be improved as basis for MSH care and forefront providers of the health service network in the communities; high risk pregnant women will be appropriately identified and referred to Hospital Escuela through the prenatal consultation in the CESAMOs. This will lead to improvement of access to health services.

In addition, improved maternal and primary health care services will become available in the CESAMOs. Members of the community will have increased knowledge about effective utilization of public health providers and referral system. Hygiene, nutrition, and vector control health education programs will be effectively provided through improved outreach programs by CESAMOs.

(III) Contribution to resource saving

Without establishing a new system or new building, this project will promote community members' understanding on and accessibility to health services through strengthening the outreach programs of the CESAMO and CESAR.

7.3. *Integrated Development Area*

7.3.1 Background

(I) Objectives

The development of the NMHP has emphasized the identification of priorities and appropriate strategies to address them. It recognizes that each context is different and that the selection of the most effective strategies for improving health needs to be carried out specifically for each appropriate setting. The process of developing the NMHP has incorporated many activities, such as the ZOPP workshops to assure that the recommendations of the study team are consistent with the realities of Honduras. Central to these efforts has been the consistent and ongoing participation of Honduran counterparts, representatives of interested public and private constituencies, and members of the donor community. The results of these processes is a set of recommended actions, some

applicable to the country as a whole and others specific to settings where the combination of problems and local conditions give priority to their application.

Implicit in this perspective is the need for systematic efforts at all levels to identify problems, establish priorities, and initiate actions. A critical setting for such planning is the health region, which has responsibility for linking general national priorities to the realities of the regional setting. Strengthening the ability of the regions to plan and identify opportunities for making public health resources more effective in improving health is an important element of achieving the objective of the NMHP. Many of the general recommendations in the NMHP, such as those relating to improved primary care and financing, will be implemented through the Regions and local initiatives will benefit as well from more effective regional leadership. Further, the national commitment to decentralization places greater responsibilities on regions and subregions for planning in addition to managing and implementing program activities. The model health plan for Integrated Development Areas addresses this range of issues.

(2) The selection of the setting

This model health program explores these activities in the context of Health Region 7, based in Juticalpa in the Department of Olancho. The selection of this setting was based on two important criteria; its potential for economic growth and the existence of many key elements of the financing reforms proposed for the nation in the NMHP.

In the macroeconomic analyses presented in the interim reports of the study team, the relatively stagnant nature of the Honduran economy was described. In general, the pace of economic growth over the past 15 years has been slow, around 3.0% per year, a rate generally equal to the rate of population growth. Similarly, the sectoral structure of the economy has also been quite stable. At the present, there is not a strong dynamic for change in the aggregate performance of the economy. It was noted, however, that there are important exceptions to this general tendency. In particular, smaller urban areas have been experiencing some growth, both in relative economic activity and in a shift away from agricultural employment to light manufacturing and services. These areas are likely to experience some economic growth over the life of the NMHP and, therefore, to have a greater range of economic options in terms of the use of public resources for responding to health improvement priorities. The focus on Health Region 7 which covers most of the