



ENVIRONMENTAL HEALTH PROJECT

ACTIVITY REPORT

No. 102

**USAID/Honduras HEALTH SECTOR II:
A Review of Malaria, Dengue, and
Tuberculosis Programs, and Training of
Environmental Health Technicians**

October 25 - November 5, 1999

April 2000

by

Dennis Kalson and Linda S. Lloyd

**Prepared for the USAID Mission to Honduras
under EHP Project No. 26568/Other.HN1.IDREVIEW**

**Environmental Health Project
Contract No. HRN-I-00-99-00011-00
is sponsored by the Bureau for Global Programs, Field Support and Research
Office of Health and Nutrition
U.S. Agency for International Development
Washington, DC 20523**

TABLE OF CONTENTS

ABOUT THE AUTHORS	iii
ACKNOWLEDGMENTS.....	iv
ACRONYMS	v
MAP OF HONDURAS, SANITARY REGIONS	vi
EXECUTIVE SUMMARY.....	vii
1. INTRODUCTION	1
1.1 Background	1
1.2 Disease Profiles: Malaria, Dengue, and Tuberculosis.....	1
1.3 Scope of Work.....	2
2. OBJECTIVES AND INTENDED RESULTS OF HEALTH SECTOR II.....	5
2.1 General Background.....	5
2.2 Information, Education, and Communication Strategies	5
2.3 Case Detection, Diagnosis, and Confirmation Systems.....	6
2.4 Local-level Prevention Strategies.....	6
3. SUMMARY OF ACTIVITIES	9
3.1 Emergency Program Activities for Malaria and Dengue.....	9
3.2 Malaria	10
3.2.1 Training Activities.....	11
3.2.2 Information, Education, and Communication Activities	11
3.2.3 Evaluation of Laboratory Diagnostic Capacity.....	12
3.2.4 Malaria Reporting System.....	12
3.3 Dengue	13
3.3.1 Training Activities.....	13
3.3.2 Information, Education, and Communication Activities	14
3.3.3 National Dengue Laboratory.....	15
3.4 Tuberculosis	15
3.4.1 Training Activities.....	16
3.4.2 Information, Education, and Communication Activities	17
3.4.3 Laboratory Network	17
3.5 Environmental Health Technician Training Program.....	17
3.5.1 Training Activities.....	18
3.5.2 Implementation Activities.....	19
3.6 Other Activities.....	20

4. ASSESSMENT	21
4.1 Accomplishments to Date	21
4.1.1 Malaria	21
4.1.2 Dengue	21
4.1.3 Tuberculosis	21
4.1.4 Environmental Health Technician Training Program.....	21
4.2 Capacity to Meet Objectives of Health Sector II	22
5. RECOMMENDATIONS.....	23
5.1 Priority Recommendations	23
5.2 Program-specific Recommendations.....	24
5.2.1 National Malaria Program.....	24
5.2.2 National Dengue/DHF Program.....	25
5.2.3 National Tuberculosis Program.....	25
5.2.4 Environmental Health Technician Training Program.....	26
5.3 Recommendations for Health Sector III.....	27
Appendix A: List of Contacts	29
Appendix B: Itinerary.....	31
Appendix C: References	33
Appendix D: Recommendations from EHP Activity Report No. 56 (Lloyd, 1999).....	37
Appendix E: Recommendations from EHP Activity Report No. 66 (Kalson & Ault, 1999).....	39

ABOUT THE AUTHORS

Dennis Kalson is a Registered Environmental Health Specialist with more than 20 years of practice in public health programs in the United States, Latin America, and Asia. Mr. Kalson has been an environmental health advisor to the UNHCR in Thailand; he has also completed public health assessments for rural communities in Honduras and has developed and implemented sustainable community-based environmental health programs in Ecuador, Nicaragua, and Peru. He had a previous consultancy with EHP in Honduras in 1999. He is currently Director of Environmental Health Services in Solano County, California, and Vice President of Public Health International, a volunteer public health resources agency.

Linda S. Lloyd received both her master's and doctoral degrees in public health from the Johns Hopkins University School of Hygiene and Public Health in Baltimore, Maryland. She is currently the Vice President for Programs at the Alliance Healthcare Foundation, a private, not-for-profit foundation dedicated to funding programs targeting medically underserved populations in San Diego and the State of California. She has worked for the past ten years in the design and evaluation of community-based strategies for the prevention and control of dengue fever, working as a consultant for organizations such as the Pan American Health Organization and USAID.

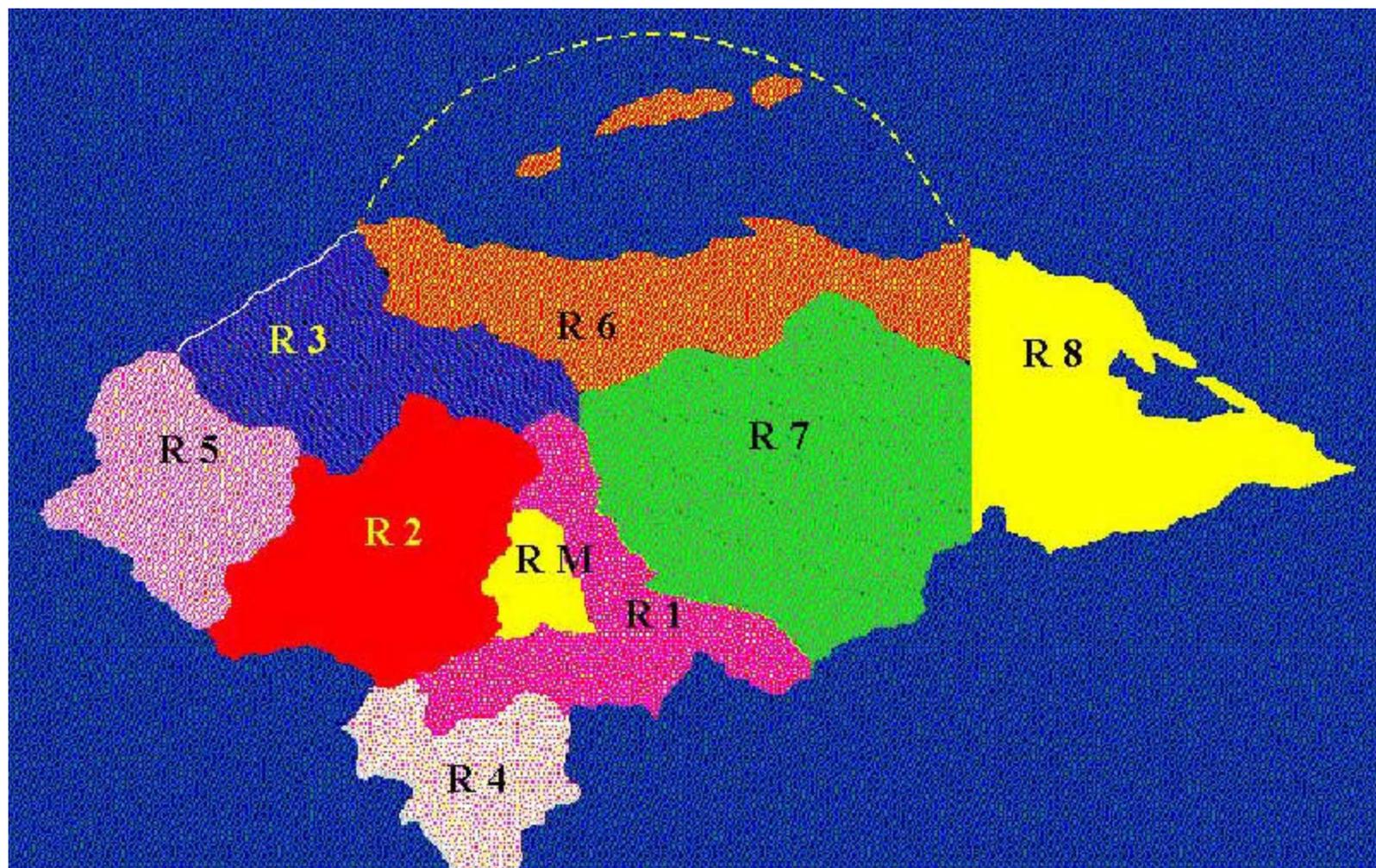
ACKNOWLEDGMENTS

The process of completing an external review requires the open and free flow of discussion, ideas, criticisms, and viewpoints on the part of the institutions under review. All departments of the Honduran Ministry of Health participated in that process; they were generous with ideas, freely shared documents, and facilitated the flow of information for this EHP activity. The hospitality shown by the MOH as well as by the USAID Mission in Honduras made this consultancy a true pleasure.

ACRONYMS

ColVol	<i>Colaboradores Voluntarios</i> (Volunteer Collaborator in malaria programs)
DHF	Dengue hemorrhagic fever
DETV	<i>Departamento de Enfermedades Transmitidos por Vectores</i> (Department of Vector-Borne Diseases of the Ministry of Health)
DES	Division of Health Education
EHP	Environmental Health Project
HSII	Health Sector II (USAID/Honduras-funded project)
IEC	Information, education, and communication
MEP	Ministry of Public Education
MOH	Ministry of Health
NGO	nongovernmental agency
PAHO	Pan American Health Organization
PND	<i>Programa Nacional del Dengue</i> (National Dengue Program)
PNM	<i>Programa Nacional de la Malaria</i> (National Malaria Program)
PNT	<i>Programa Nacional de Control de la Tuberculosis</i> (National Tuberculosis Program)
Proyecto CID	<i>Proyecto Control Integral del Dengue</i> (Integrated Dengue Control Project of the Ministry of Health)
RSM	<i>Región Metropolitana Sanitaria</i> (Metropolitan Sanitary Region)
TAES	<i>Tratamiento Acortado Estrictamente Supervisado</i> (Directly observed therapy, short-course)
TSA	<i>Técnico de Salud Ambiental</i> (Environmental Health Technician)
UCI-DETV	<i>Unidad de Coordinación Institucional</i> (Institutional Coordination Unit-DETV)
USAID	United States Agency for International Development
WHO	World Health Organization

MAP OF HONDURAS, SANITARY REGIONS



EXECUTIVE SUMMARY

Background

In October/November 1999, the Environmental Health Project was asked by the USAID Mission to Honduras to undertake a review of progress in a project the Mission had been funding with the Honduras Ministry of Health (MOH). Two consultants were asked to review progress made by the MOH in accomplishing the goals and objectives specified in the Health Sector II (HSII) project for malaria, dengue, and tuberculosis control, and to assess implementation of a new training program for environmental health technicians. After the devastation caused by Hurricane Mitch in November 1998, routine program activities for malaria and dengue, in particular, were suspended while emergency disease control measures were implemented. The emergency period ended in mid-1999, with malaria, dengue, and tuberculosis control programs returning to pre-hurricane routine.

Prior to this evaluation visit, the two EHP consultants had conducted separate external reviews of specific components of the HSII priority areas (Lloyd, a review of malaria and dengue control activities in late 1998, described in EHP Activity Report No. 56, and Kalson, a review of environmental health technician training in early 1999, described in EHP Activity Report No. 66). With HSII funding coming to an end in December 2000, the two consultants were asked to assess the ability of the MOH to achieve the goals and objectives set out in HSII, in light of the impact of the hurricane on program implementation.

While malaria and dengue did not appear to increase in 1999 as a result of Hurricane Mitch, the number of cases was similar to that seen in pre-Hurricane Mitch in 1998. From January to October 1999, there were almost 22,000 confirmed cases of malaria; in addition, under-reporting of cases continues to be a significant problem. Approximately 13,000 cases of dengue were reported in that period, with 46 confirmed cases of dengue hemorrhagic fever (DHF) and several deaths. Tuberculosis cases continued to be under-reported and under-diagnosed, with only 2,000 of the 4,200 reported cases confirmed by bacilloscopy.

General Observations

IEC plans: The need for development of integrated communication plans for dengue and malaria was described in the EHP report produced following the October 1998 consultancy (Lloyd 1999). Neither the malaria nor the dengue annual national plan delineates specific steps by which information, education, and communication (IEC) activities will be undertaken. Although weaknesses in the national plans have been identified, the means to address those weaknesses have not been described in MOH planning documents beyond general strategies, such as retraining of staff. In their evaluation performed in October 1999, the consultants found few changes in the use of communication channels to disseminate prevention and control messages for malaria and dengue. Most changes that were seen related to the design and

production of messages for dengue, although even those materials had not been developed as part of an integrated communication plan for dengue/DHF control.

Malaria: The national malaria program continues to suffer from lack of appropriate materials, both for training and general public education, and there is little indication that communication strategies will be integrated into the national plan. Although the head of the national malaria program requested an external evaluation of the program in November 1998, no such request has yet been made to the USAID Mission. The malaria program continues to rely on existing staff and outdated materials to implement new strategies.

Tuberculosis: The tuberculosis program, on the other hand, has made very good progress over the past year, implementing a comprehensive approach to improve the treatment and control of tuberculosis. This approach includes staff training to improve diagnostic capacity at the area and regional levels and training for health personnel in directly observed treatment, short-course regimen (TAES). Because much of the first year's focus was on training, the head of the national tuberculosis program identified a set of appropriate WHO training materials and adapted them to the Honduran setting, identified consultants to conduct specialized training sessions, and then launched retraining activities at the area and regional levels.

TSA Training: While the environmental health technician (*técnico en salud ambiental* or TSA) training program appeared to enjoy a high level of commitment by the Ministry of Health prior to Hurricane Mitch, it has come to a near standstill, and none of the recommendations described in the USAID/EHP review performed in March 1999 have been implemented. The TSAs are a key component of the MOH strategy to strengthen basic prevention services at the local level. However, to date, only 60 of the needed 700 TSAs have completed the 12-week training course.

The loss of momentum and progress in TSA training is due primarily to the lack of focused, committed leadership within the MOH. Although there is anecdotal evidence that the TSAs who completed the course in Sanitary Region II are beginning to fulfill their "polyvalent" roles, there is still a lack of support for the TSA concept at the senior levels of the Ministry. The TSA program may yet meet its objectives, but that will require proper oversight, coordination, and commitment from within the MOH.

Priority Recommendations

Ministry of Health

- C Appropriate officials in the MOH should review recommendations listed in EHP Activity Report Nos. 56 and 66. (See Appendix D and E.)

- C The MOH should implement the integrated communications plan developed by Martínez and Lloyd in October 1998 (Lloyd 1999).

- C The DETV and the UCI-DETV should identify and contract with a qualified full time technical advisor to provide support for all information, education, and communication activities of the unit. This individual should also provide technical support for USAID-funded IEC activities conducted by the tuberculosis program, under the direction of the Head of the UCI-DETV.
- C MOH should identify one department or division to be responsible for all aspects of the TSA training program administration, implementation and supervision. The responsible department/division should appoint one individual as TSA Coordinator with the authority to manage all aspects of the program.

USAID/Honduras

- C USAID should contract with a long-term technical advisor to work with USAID and the MOH in the following areas:
 1. Coordinate and oversee the Environmental Health Training Program in cooperation with the MOH TSA Coordinator.
 2. Provide follow-up and oversight services for USAID-funded elements of the malaria, dengue, and tuberculosis programs in Honduras.
- C USAID should initiate the organization of a Central American regional meeting on IEC for dengue, malaria and tuberculosis. The consultants suggest that EHP coordinate this meeting, since it is already active in USAID projects in El Salvador and Nicaragua.
- C USAID should require that all computers provided to the MOH through USAID funds include a routine maintenance contract and installation of anti-virus software updated on a regular basis (at minimum, three times a year).
- C USAID should continue to find ways to facilitate prompt payment of funds within USAID and MOH guidelines.
- C All training programs funded by USAID should require that a copy of the training schedule as well as all didactic materials be submitted to USAID as part of the reporting requirements.
- C USAID/Honduras should encourage the DETV to hire a consultant to provide the Head of the UCI-DETV and the Head of the National TB Program with technical assistance in IEC activities. This individual should work in the UCI-DETV office, under the direction of the Head of the UCI-DETV.

Program-Specific Recommendations

1. National Malaria Program

Ministry of Health

Given the lack of concrete results following earlier consultant visits, a comprehensive external evaluation of the malaria program is strongly recommended. For an evaluation of community participation and training of Volunteer Collaborator elements of the program, the consultants recommend Lcda. Lourdes Rivas Gutiérrez, Mérida, Yucatán, Mexico. For field technical elements of malaria control, PAHO/EHP recommend Dr. Roberto Barrera, Venezuela, and Dr. Gustavo Bretas, Brazil. All are well founded in community-based strategies and malaria control programs. Consultants hired should assist the MOH in further development of all aspects of the program including diagnosis, treatment, surveillance, training, and prevention.

- C The Head of the DETV should ensure that all IEC and training materials are reviewed and validated by the UCI-DETV prior to printing. No IEC materials should be released without such review.
- C Program plans for strengthening malaria information and reporting systems should be implemented at the earliest possible date. Given the lack of implementation of recommendations made in the last program evaluation (Lloyd 1999), external assistance may be needed in this area.
- C Although training is urgently needed at all levels, no additional training activities should be initiated until completion of the external program evaluation. An outside review may reveal additional training needs not addressed in current plans.

USAID/Honduras

- C USAID should put together an external consultant team, as described above, to assist in a comprehensive evaluation of the national malaria program.
- C As it has done under HSII, USAID should continue to finance recommended equipment, training, and IEC activities pursuant to guidelines established by the external evaluation team in concert with the MOH.

2. National Dengue/DHF Program

Ministry of Health

- C The MOH should review and implement relevant recommendations in the external program evaluation conducted by PAHO in 1995.
- C The Head of the DETV should ensure that all IEC and training materials are reviewed and validated by the UCI-DETV prior to printing.

- C MOH should improve clinical diagnostic capabilities at the local health area level through ongoing training of health personnel.
- C Appropriate protocols and materials for entomological surveillance training should be developed for use by field technicians—both TSAs and other vector control staff.

USAID/Honduras

- C Immediate release of funds to fully equip and furnish the National Dengue Laboratory.
- C Provide additional funds for the purchase of a back-up generator for the National Dengue Laboratory.

3. National Tuberculosis Program

Ministry of Health

- C Given the increasing dual diagnosis of TB and HIV, the PNT should maintain its linkage with the HIV/STD Control Program and also strengthen routine TB prevention and control activities for the general population.
- C MOH should provide institutional support for continued implementation of the five strategic elements of the national plan: policy and administration, laboratory network, adequate supply of drugs, information systems, and directly observed therapy for case management.
- C Procedures should be established for the review and validation of all IEC materials. The Head of the UCI-DETV can provide assistance in this area.

USAID/Honduras

- C USAID should continue technical and financial support of the newly re-established TB program to ensure full integration of up-to-date TB control and treatment strategies.
- C USAID should review additional equipment needs, e.g., microscopes, with the Head of the PNT.

4. Environmental Health Technician (TSA) Training Program

Ministry of Health

- C The Minister of Health should decide whether to continue with plans for the development of TSAs as described in the *New Agenda for Health, 1998-2002*. Should the Minister decide that the TSA training program does not meet Honduras' current needs, he should inform USAID of this decision so that funds can be re-directed.

- C It is essential that the MOH initiate the Civil Service process for creating the TSA job classification. That step would remove a major obstacle to full integration of TSAs at the local level.
- C MOH should establish procedures to ensure compliance with TSA selection criteria and develop recruitment criteria for those regions with insufficient numbers of qualified candidates.
- C MOH should analyze and disseminate to all regional directors and other key personnel the results and lessons learned from the TSA training and implementation processes conducted to date.
- C The TSA Coordinator, once designated within MOH, should be responsible for collecting all didactic materials to be used by each docent. With appropriate external assistance from USAID, the Coordinator should review each module in light of its objectives, the detailed curriculum recommendations found in EHP Activity Report No. 66 (Kalson and Ault 1999), and feedback from trained and experienced TSAs in Region II.
- C Given the time remaining under the current health sector funding cycle, it is realistic to expect that TSA training courses could be completed in two regions. Training for TSAs in the remaining regions would be deferred to the next health sector funding cycle (HSIII). After discussing this recommendation with USAID and others, the consultants feel that the wisest course is to fully train TSAs in the two regions (rather than to train just a few in all regions.)

USAID/Honduras

- C USAID should inform and assist the Minister in the decision-making process regarding continuation of the TSA training program.
- C If a positive decision is made, USAID should encourage the Minister to accelerate the steps required for job classification to implement the TSA program.
- C USAID should allocate funds for the purchase of a basic TSA field equipment package and a set of standard reference materials for each health area.

Recommendations for Health Sector III

- USAID should include in Health Sector III those malaria control activities identified as necessary through the detailed external review recommended above, since it is unlikely that all activities to strengthen the program under HSII will be completed by December 2000.

- USAID should also include continued support of integrated dengue control given positive progress in the development of IEC materials and the increasing endemicity of dengue hemorrhagic fever.
- USAID should give high priority to continued funding for the PNT as long as it conforms with WHO standards.
- USAID should provide funds through HSIII for ongoing support and follow-up training for TSAs as regions complete the initial training of field staff.

1. INTRODUCTION

1.1 Background

Prior to the ravages and chaos caused by Hurricane Mitch in late October 1998, the Honduran Ministry of Health (MOH) had made substantial progress toward modernizing its approach to the control of infectious disease. *The New Agenda for Health, 1998-2002*, adopted by the MOH prior to the disaster, promised to strengthen community participation in public health programs; improve information, education, and communication (IEC) efforts; and place greater emphasis on prevention in the delivery of public health services. The new agenda also set policy for building MOH capacity at all levels of the organization.

The MOH agenda coincided with the goals of the United States Agency for International Development (USAID), which had determined that infectious disease had become a problem of sufficient magnitude to merit high priority in its programs. In the face of a growing number of cases of dengue/dengue hemorrhagic fever (DHF) and malaria and the re-emergence of tuberculosis, the USAID Mission in Honduras provided support to the MOH through its Health Sector II (HSII) funding to target those three diseases (USAID, n.d.). Similar to the MOH priorities, HSII strategies focused on improved IEC, capacity building, and environmental health prevention activities at the local level.

Hurricane Mitch (which blew in October 29, 1998) changed the picture. As the country shifted its attention to the flood disaster and its aftermath, progress in bringing about systemic change in the way the MOH addresses basic public health issues was generally slowed down, and in some areas, completely halted. In particular, efforts to build local capacity were side-lined.

By the end of 1999, a year after the hurricane, the Ministry of Health was again focusing on the priorities it had set in *The New Agenda for Health* and resumed the work it had started to modernize its services. USAID funding for the HSII project (and its activities) is scheduled to end on December 31, 2000. Given the delay caused by Hurricane Mitch, there is some question as to whether goals outlined by the HSII project to strengthen the MOH can be met. With less than a year remaining in HSII, USAID/Honduras is initiating plans for a new Health Sector project and is carefully examining current activities to determine which ones merit continuation and support.

1.2 Disease Profiles: Malaria, Dengue, and Tuberculosis

Disease reporting in Honduras generally originates at the local level, usually through one of more than 700 rural health centers. The health center sends the data to one of the 41

corresponding Health Area offices, which then sends the information to one of nine Sanitary Regional Centers. (See map.) In turn, the Sanitary Region, which do not conform to geopolitical subdivisions in Honduras, tabulates the data for that region and submits the information to the central offices of the Ministry of Health. Because of weak infrastructure and communication difficulties in some Sanitary Regions, the reporting system is uneven and plagued with delays.

Data on malaria, dengue/DHF, and tuberculosis indicate that although disease incidence did not significantly increase as a result of the disaster, the number of cases has not changed since 1998. It also appears that malaria continues to be underreported in some regions, particularly Sanitary Region VI. At the time of the consultant team visit (October 23-November 5, 1999), there were a total of 21,906 confirmed cases of malaria (DETV, October 1999b). Between 1998 and 1999, there was a decrease of 3% in the number of blood smears taken, which suggests that there is significant underreporting in some areas of the country.

Approximately 13,000 cases of dengue/DHF were reported in 1999 through mid-October, with 46 confirmed cases of DHF and several deaths (DETV, August 1999; interviews with DETV staff). The number of cases is similar to the 1998 figure prior to Hurricane Mitch in late October 1998.

And, finally, of the 4,500 reported cases of tuberculosis, only 2,000 cases were confirmed with bacilloscopy (interview with Dr. Paz, Head of the NTP). The total number of tuberculosis cases is also considered to be an underestimate. The National Tuberculosis Program (PNT), however, expects to register 6,000 new cases in the year 2000 due to improved diagnostic capability at the health centers.

1.3 Scope of Work

The EHP consultant activity was undertaken, at the request of USAID/Honduras, to examine several aspects of the MOH program:

- Review progress by the MOH regarding the goals established by the HSII project in malaria, dengue, and tuberculosis control
- Review progress in the environmental health technician (in Spanish, *técnico de salud ambiental* or TSA) training program
- Assess the potential of MOH offices at all levels to achieve the Ministry's stated goals within the time constraints of HSII.

This activity followed up previous visits by the consultants for the Environmental Health Project. In October 1998, Linda Lloyd provided an assessment of health education materials for the

control of dengue and malaria in Honduras (summarized in EHP Activity Report No. 56). In March 1999, Dennis Kalson and Steven Ault reviewed the MOH training program for environmental health technicians (summarized in EHP Activity Report No. 66).

The consultant review presented in this report was undertaken from September 25 to November 5, 1999. The scope of work included the following tasks:

- C Review documentation describing the current USAID-funded Infectious Disease program with the Honduran Ministry of Health.
- C Meet with USAID and MOH personnel and, if necessary, make in-country field trips to various sites to get a clear sense of the status of the project.
- C Assess MOH capability to complete activities programmed under HSII by the end of the funding cycle (December 2000).
- C Gauge the impact the programs are likely to have on the prevention and control of malaria, dengue, and tuberculosis.
- C Make recommendations about infectious disease control activities to include in HSIII, a follow-on project to HSII. Any recommended activities should include estimated costs and results that could be expected if the suggestions are adopted.
- C Prepare a draft report in English before leaving Honduras.

A list of persons consulted, itinerary, and references (Appendices A, B and C, respectively) summarize the interviews and documents used as data sources for this report. Recommendations from previous EHP consultant visits are presented in Appendices D and E.

2. OBJECTIVES AND INTENDED RESULTS OF HEALTH SECTOR II

2.1 General Background

An active partnership between USAID and the government of Honduras has developed to address the threat of infectious diseases. The partnership reinforces USAID's goals for improvement of family health in Honduras, as well as those of the Ministry of Health to build an effective, modern system of disease prevention. The latter goal is being addressed specifically through the Ministry's program entitled *The New Agenda for Health, 1998-2002*.

In working with the Ministry, USAID/Honduras has selected three major diseases, malaria, dengue, and tuberculosis (TB), as the targets for strengthening infectious disease control and prevention systems under its new program, *Initiative in the Prevention and Control of Infectious Diseases*. The Infectious Disease (ID) initiative seeks to foster a comprehensive and coordinated nationwide approach toward improving family health in Honduras. Its focus is prevention, and its overall goal is to assist the MOH in building the capacity to provide high quality prevention and control services for the three diseases. The initiative strives for the following results:

- C Improvement in knowledge, attitudes, and practices among Ministry of Health personnel and the general public.
- C Improvement in MOH diagnostic and case identification capacities.
- C Increased use of sustainable preventive interventions through the development of environmental health technicians, community groups, and municipal governments.

The results of the initiative are dependent on active involvement of the Ministry of Health in three strategic areas: (1) information, education, and communication activities; (2) provision of training and adequate equipment at all levels of the case detection, confirmation, and disease surveillance systems; and (3) training and implementation of local-level environmental health activities to address the environmental sources of disease.

2.2 Information, Education, and Communication Strategies

Information, education, and communication (IEC) strategies to reduce malaria transmission include development of plans for coordinated public information campaigns. The purpose of these IEC programs is to raise awareness in the general public, especially in highly endemic areas, of the symptoms of malaria. They also stress the importance and availability of a short-course treatment regimen and the need to eliminate *Anopheles* mosquito breeding sites.

To reduce the incidence of dengue/DHF, IEC activities stress the importance of community-wide, collective efforts for prevention of the disease. The principle messages focus on simple but essential methods of eliminating habitats for the *Aedes aegypti* mosquito, symptoms of the disease and its treatment, and where to obtain medical attention for DHF.

In confronting tuberculosis (TB), public awareness efforts target the public at large, with special attention given to geographic areas of greater TB incidence. The TB education activities focus on the responsibility of the individual in successful treatment of the disease. A variety of IEC materials seeks to deliver four recurring messages:

- C A person with a persistent cough (lasting 15 days or more) may have TB.
- C Tuberculosis is an illness that can be cured.
- C Treatment can be obtained at local MOH posts (UPS).
- C TB patients must take the full treatment course faithfully to cure the disease completely.

Tuberculosis IEC strategies also enlist the help of local governments by incorporating TB prevention and information elements into municipal action plans.

2.3 Case Detection, Diagnosis, and Confirmation Systems

The second area of the Infectious Disease initiative is improvement of case detection and diagnostic capacity within the health system. Strategies listed in the HSII funding proposal are designed to improve laboratory capacity by providing needed equipment, reagents, and training to MOH personnel at the area and local levels. Funds are included in the initiative to equip the new National Dengue Laboratory in Tegucigalpa to improve the national capacity for dengue case confirmation. The TB program would also establish reference laboratory centers in Tegucigalpa and San Pedro Sula, as well as strengthen laboratory capacity at several sites within each of the nine sanitary regions.

2.4 Local-level Prevention Strategies

The third area of the initiative includes interventions to build a sustainable system of prevention. These activities are aimed at development of local capacity to prioritize and carry out activities geared toward prevention of infectious diseases. A critical element in this third area involves interdisciplinary training of environmental health technicians (TSAs). The intent is that TSAs will serve as the primary point of community contact in disease prevention efforts. They will fulfill a variety of monitoring and surveillance activities and will assist local authorities in the identification and prioritization of environmental health problems, and in mobilizing local community resources to resolve those problems. In addition to polyvalent training for the new

technicians, the intervention includes the provision of equipment and materials necessary for them to meet their field responsibilities.

The Infectious Disease initiative's local-level strategy also seeks to strengthen the system of community Volunteer Collaborators (CoVols) in the control and treatment of malaria. The initiative proposes that renewed training would be provided for all CoVols. The trainers would be newly formed TSAs who would use didactic materials developed by the MOH, with support from supervisory/technical personnel from the area and regional levels. Upon completion of the training, the CoVols should then have a working knowledge of environmental management and surveillance of illnesses related to vectors, water, food, garbage, and the environment.

A final strategic element in strengthening the system of prevention involves local government. The initiative proposes that municipalities incorporate malaria, dengue, and tuberculosis control elements into their operational plans. TB control activities are already a required part of municipal plans, and municipalities have been doing a decent job of planning in this area. With assistance from the nine regional offices of the MOH, TSAs will guide local governments in the development of malaria and dengue control plans.

Goals listed in the USAID Infectious Disease initiative, simply stated, are as follows:

- C Development of an effective ongoing campaign of information, education, and communication activities using radio spots, television spots, posters, and flyers.
- C Improved malaria case detection/diagnostic capacity in MOH laboratories in Sanitary Regions I, II, III, IV, and VI (malaria-endemic areas of the country).
- C Improved laboratory services for diagnosis and control of tuberculosis.
- C Training of 344 environmental health technicians working in the Departments of Francisco Morazán, Comayagua, Intibuca, La Paz, Cortés, Choluteca, Valle, Atlántida, Colón, Yoro and San Pedro Sula.
- C The incorporation of malaria and dengue prevention activities into local government plans in ten municipalities.

3. SUMMARY OF ACTIVITIES

3.1 Emergency Program Activities for Malaria and Dengue

Emergency measures were introduced following Hurricane Mitch. From December 1998 through mid-1999, activities under both the malaria and dengue programs included increased use of chemicals, distributed to the Sanitary Regions, for mosquito control. The National Malaria Program (PNM) focused its emergency control measures on spraying, use of *Bacillus spaericus*, and drainage of potential *Anopheles* breeding sites. There was increased use of the larvicide Abate7 in large water-holding containers, such as large cement laundry basins or *pilas*. Given the circumstances, the Institutional Coordination Unit (UCI) of the Department of Vector-Borne Diseases (DETV) revised materials that had been designed for routine dengue prevention activities. For example, a flyer which proclaimed “*Attention: Don't touch!*” (urging people to leave the little bag of Abate in the basin) was revised. It now delivers a more informative and less threatening message: “*Be careful! This little bag (of Abate) will keep this (basin) free of mosquitoes!*” The revised flyer was printed in color and distributed during household visits.

In response to the devastating effects of the hurricane, the MOH established an Emergency Health Education Team. The team consisted of six health educators from diverse departments within the MOH, including the Division of Health Education (DES) and the UCI-DETV. Five health/social areas were identified by the team as targets for action: malaria, dengue, cholera, violence, and waste disposal.

The team developed a series of materials using the same characters for each health issue; some previously developed materials were revised to reflect emergency measures where appropriate. Materials included five story booklets, a variety of posters, five 3-minute short story@radio spots, a variety of shorter radio spots, TV spots, the Untadita@sticker (pictures showing a sequence of steps for cleaning home wash units or *pilas*), and flyers. Production of these materials was financed by emergency funds from USAID, PAHO, the World Bank, and UNICEF, among others. (Health Sector II funds are being used to initiate programmed activities that were postponed because of Hurricane Mitch.)

The consultants reviewed the emergency-related materials with the Head of the UCI-DETV and found that improvements had been made in previously existing dengue posters. For example, photographs of prevention actions were used rather than drawings, and prevention actions were included on the poster related to the use of acetaminophen for dengue produced by SmithKline Beecham. (See EHP Activity Report No. 56 for a detailed description of malaria and dengue health education materials.) The new or revised materials were of good quality, with clear drawings in the booklets, and more visual information on the posters and flyers.

Although Abate⁷ was widely distributed to prevent mosquito breeding in water-holding containers under the emergency program, the AUntadita@cleaning technique and application of salt or lime in abandoned tires continue to be key control measures for two important *Aedes aegypti* breeding sites found in domestic settings. Plans within the DETV suggest that routine program activities will refocus attention on those control measures, with a reduction in the use of chemical control.

3.2 Malaria

The emergency period ended in mid-1999, with most programs returning to routine activities by the time of the consultant visit in late 1999. In reviewing progress toward meeting goals of HSII, the consultants interviewed Dr. Laura Julia Salgado, Head of the National Malaria Program; Dr. Henry Andrade, current Head of DETV and Head of the National Chagas and Leishmaniasis Programs; and Lcda. Mercedes Martínez, Head of the UCI-DETV. Dr. Salgado accompanied the EHP team on a site visit to Danlí, located in Health Area 1 of Sanitary Region I. The team interviewed the Epidemiology Supervisor for Health Area 1 and two volunteer collaborators (CoIVols). Both individuals actively participate in the program, one woman having been a CoIVol for almost 15 years, and the second, three years. (Note: The consultants recognize that interviews with two CoIVols do not give a sample of the whole group. This specific Health Area was selected by the Head of the PNM because the CoIVols there had recently received training, and the system was reportedly functioning fairly well.)

Systemic weaknesses in the PNM were described in the original materials for Health Sector II (USAID n.d.), DETV program documents (DETV September 1999; DETV 1999), the *Report on the Status of Malaria Programs in the Americas* (PAHO August 1999); and EHP Activity Report No. 56 (Lloyd 1999). The national program continues to suffer from the lack of an integrated approach to prevention and control of malaria. One year after the visit by one of the consultants (Lloyd), program strategies continue to be implemented without validation of their effectiveness.

Despite the recommendations of earlier consultant reviews, training for CoIVols and local Health Area malaria program evaluators and supervisors has been conducted without an external review of the program or development of appropriate training materials for each category of personnel. The consultant team suggests that, at a minimum, the Head of the UCI-DETV should be involved in the design and review of training materials, especially those targeting the CoIVols. The consultant team understands that training sessions are being conducted by malaria program staff without an assessment of the training skills of those individuals or the provision of didactic materials. It is worth noting that the principal recommendation for the malaria program in EHP Activity Report No. 56 (Lloyd 1999) was that an external review of the effectiveness of current program strategies be undertaken prior to the start of any training activities supported by USAID Health Sector II funds.

3.2.1 Training Activities

Most of the training activities that have been initiated were to retrain ColVols. An estimated 7,000 ColVols need to be retrained. According to a spokesman from MOH, all 300 ColVols in Region I have received some training since mid-1999. However, the consultants were told in a field visit to Danlí (mentioned above) that the most recent training for the ColVols was September 1998 (interviews with G. Orellano, Area 1 Supervisor for Epidemiology, and two ColVols). Despite this discrepancy in numbers retrained since mid-1999 in Region I, the remaining 6,700 ColVols have evidently received no retraining.

It also appears that many or most of these individuals who have undergone retraining have not received either the original (1992) or revised (1999) version of the *Manual for Volunteer Collaborators* (PNM, DETV). Its companion manual, *Manual for Training of Volunteer Collaborators*, as noted in EHP Activity Report No. 56, is more useful as a reference document than a training manual. Previous reviews suggested that both manuals need significant revisions and pretesting before further use. According to interviews with DETV staff, a “few small” changes were made to the *Manual for Volunteer Collaborators*, and both manuals have been sent to the printer for reprinting without prerequisite field testing. The Head of the PNM stated that the manuals did not need to be field tested since that had been done in 1992. She was unable to describe the process used for validation of the materials, however.

It is critical that expectations and responsibilities for personnel at each level of the program be clearly defined and explained at every training session. As an example of the lack of clarity, PNM staff stated that ColVols are responsible for both diagnostic and preventive malaria measures in their community, yet neither of the two ColVols interviewed was able to identify *Anopheles* mosquito breeding sites in their community, in spite of a relatively high level of malaria transmission in the area. When asked what their responsibilities were, both women replied, “Case detection, taking blood smears, and providing directly observed therapy to ensure completion of the 5-day short course treatment regimen.”

3.2.2 Information, Education, and Communication Activities

The malaria program still lacks an integrated IEC component. In spite of materials developed during the post-Hurricane Mitch emergency phase by the Head of the UCI-DETV, the consultant team found that the Head of the PNM had not put them to use.

Three new (and much improved) print materials were developed by the Head of the UCI-DETV—a malaria pamphlet and two new posters of excellent quality. They were to be printed by mid-November 1999. The posters use culturally oriented photographs, rather than drawings, and rely on a minimum of text for the message. Each poster addresses one of the two key messages for community members: where to obtain treatment (from a ColVol or the health center) and appropriate measures to control mosquito breeding sites. Unfortunately, the Head of

the PNM has not encouraged the incorporation of these new materials in program plans, although there continues to be a dearth of educational materials for use by the ColVol. The consultant team has encouraged the Head of the PNM to utilize these and other materials as part of the national plan.

The two ColVols interviewed in Region I indicated that educational materials would be useful. In particular, a chart with the recommended dosage for each medication would be helpful when providing treatment. The *Manual for the Volunteer Collaborator* includes a text chart with the amounts written in; given that the average number of years of education for Honduras was 4.5 in 1995 (Programa Nacional de Control de la Tuberculosis, 1998), a pictorial chart would be easier to use and might result in more accurate treatment. A pictorial table for malaria treatment developed in Nicaragua was shown to the EHP consultant team by the Head of the UCI-DETV and by the Epidemiology Supervisor of Health Area 1, Region I. The Head of the UCI-DETV plans to revise it for use in Honduras as well as to update the malaria flipchart in the next round of materials to be produced.

3.2.3 Evaluation of Laboratory Diagnostic Capacity

Under Health Sector II, a program to strengthen laboratory diagnostic capacity for malaria was initiated in 1999. According to the Head of DETV, approximately 30% of slides usually result as false negatives due to inadequate reading by laboratory staff and the poor quality of the microscopes in some Health Areas. Region VI had a particularly high rate of false negatives. Two approaches are being used to address the problem: the purchase of new microscopes for health areas and in-service training sessions for laboratory staff, malaria program supervisors, and evaluators.

A DETV evaluation of malaria diagnostic capabilities of the laboratories in each Sanitary Region and Health Area is underway. The assessment has been completed for 14 laboratories located in Regions I, II, III, IV, VI, and VII. Laboratories in the Metropolitan Sanitary Region (RSM) and were to be reviewed in November 1999, and Regions V and VIII, in early 2000. Training sessions will be held with malaria program supervisors and laboratory personnel to improve the quality of the slides taken in the field and the reading of the slides once delivered to the health center. Two such sessions, for a total of 26 people, have already been held in Region VI, the region with the greatest number of malaria cases.

3.2.4 Malaria Reporting System

The Head of the PNM indicated that malaria case reporting is very slow, with some regions taking up to 12 weeks to send in reports. How best to address this problem has not been determined; assistance from a qualified information systems consultant was requested.

3.3 Dengue

The consultants met with Dr. Arturo Maradiaga, Head of the National Dengue Program (PND); Dr. Eduardo Fernández, Head of the DETV through August 1999; Dr. Henry Andrade, current Head of the DETV and Head of the National Chagas and Leishmaniasis Programs; and Lcda. Mercedes Martínez, Head of the UCI-DETV. As with the malaria program, community-based strategies have not yet been fully integrated into the national dengue program (DETV October 1999a). An external review conducted in 1995 by a team of four technical advisors to PAHO identified various program weaknesses and provided recommendations for strengthening those areas (PAHO 1995); most recommendations from their report have not been implemented.

3.3.1 Training Activities

The only training activities conducted to date for the national dengue program (or PND) have been IEC sessions organized by the Head of the UCI-DETV.

a. General IEC training

Training sessions have been held through integrated activities of the Division of Health Education (DES) and the UCI-DETV. For example, local Health Areas in Region VII requested training in IEC because of increases in dengue cases. The Head of the UCI-DETV participated in a training session for health personnel in Region VII organized by the DES. Nine local health units developed IEC plans for the prevention and control of dengue, including goals and objectives, timelines, and budgets. Unfortunately, there has not been any follow-up with these health units from either the DES or the DETV due to lack of support from department heads.

b. School module

A series of workshops have been held in Regions III (San Pedro Sula) and VI (La Ceiba) on the use of the school module, *Domestic Hygiene and Environmental Health*. The module was developed by Proyecto CID, a five-year community-based dengue control program of the Ministry of Health, financed by the Rockefeller Foundation. (The workshops also covered the correct use of other dengue educational materials as well.) The principal trainer has been Lcda. America Rajo, one of the key Proyecto CID staff members responsible for developing the school curriculum. She has worked in coordination with Ministry of Public Education (MEP) staff, teachers at local elementary schools in El Progreso, and Ministry of Health staff.

According to the Head of the UCI-DETV, there is great demand for the school module by teachers—more than the agency can keep up with. Feedback from teachers indicates that the module is easy to use and the exercises can be integrated into other required topics. The municipality of El Progreso, where the module was developed, has printed and distributed it to all schools in its area; the municipality of San Pedro Sula is considering incorporating the module into its school curriculum.

The Head of the UCI-DETV has also received requests for training in use of the module from other regions. (Training sessions in Regions I and III have been planned but not yet implemented.) There is, however, some resistance in the DETV to using program funds to print the module and to train teachers in its use, although the PND has a history of school-based activities carried out through periodic lectures in schools given by local DETV staff. Training teachers in how to use the school module, in fact, meets two of the three specific objectives of the *1999-2000 Strategic Plan for Operationalization of the National Dengue Program* (DETV, Oct. 1999a): *Train institutional ... human resources in undertaking the [dengue] problem* and *Accomplish an integrated approach to dengue with broad participation from local government and the community.* In addition, placing dengue control within a broader environmental health framework as a long-term prevention strategy conforms with the MOH's *New Agenda for Health, 1998-2002*.

A second point of discussion relating to the school module is crediting the team members who developed and field tested it. Some individuals have suggested that the list of names be removed, with only the Ministry of Health remaining on the cover. The EHP consultant team recommends listing the individuals from the Ministry of Health and the Ministry of Public Education to demonstrate the validity of the process used to develop the materials. This module is one of the very few examples of a school health program developed by staff from both ministries.

3.3.2 Information, Education, and Communication Activities

IEC activities for routine dengue prevention and control have resumed. During the emergency period following the hurricane, many of the materials were revised based upon suggestions given in EHP Activity Report 56 (Lloyd 1998). As of this writing, the dengue flipchart is the only key item which still needs to be updated and reprinted.

The annual national mobilization for *AD Week* (*ASemana D* or *ADengue Week*) was held at the end of September 1999. A number of goals and targets were achieved, including the following:

- delivery of materials to the regions,
- providing training sessions in some regions,
- purchase of air time and production of a radio spot to support *AD Week* community activities and
- production of two additional radio spots to run for two months after *AD Week* to reinforce the control activities highlighted during the mobilization.

The full implementation of national mobilization activities was hindered by logistical obstacles, shortage of personnel in the UCI-DETV, and lack of participation of MOH regional personnel in some areas. The activities listed above need to be incorporated into routine program planning and continually evaluated for effectiveness in achieving stated objectives.

3.3.3 National Dengue Laboratory

The EHP consultants visited the building which will be the future home of the National Dengue Laboratory. The Pan American Health Organization (PAHO) provided oversight to ensure that Phase 1 of the construction work (renovation of the roof, interior walls and floor, installation of water and electricity, and installation of air conditioning and exhaust vents) was completed. The contract was accepted as completed by PAHO in early October 1999. Dr. María de los Angeles Mendoza, recently hired by PAHO as a consultant for the Vaccine Program, has been tasked by Dr. Luis Gerardo Castellanos, PAHO Advisor in Communicable Diseases, with oversight of Phase 1 and all other activities associated with getting the laboratory up and running.

The building appears ready for the start of Phase 2, which includes installing air conditioning, some special wiring for heavy equipment, purchase and installation of work benches, shelving, desks, etc., and purchase and installation of laboratory equipment. Dr. Mendoza is working with the Ministry of Health building engineer on the final building plans. Once that is completed, bids will be obtained for the air conditioning units. When air conditioning and hoods have been installed, new ceiling tiles must be purchased and installed. (The old ones need replacement due to water damage.)

Dr. Ida Berenice Molina, Head of the National Center for Diagnostics, spoke with one of the EHP consultants (Dr. Lloyd) and Dr. Mendoza about Phase 2 and laboratory equipment purchases. According to Dr. Molina, the contract for the work to be conducted during Phase 2 will be let for a three-month period. If funds are released by USAID for Phase 2 before the end of November 1999, the laboratory is expected to be ready by the end of February 2000. Drs. Mendoza and Molina will continue to provide the necessary oversight during the Phase 2 contract to ensure that the work is completed to the standards and timeline specified in the contract.

A major item not included in the original cost estimates was purchase of a back-up generator. According to Dr. Molina, it was originally anticipated that the building would be linked to the National Center for Diagnostics generator. However, this will not be feasible, given the size of the building and the laboratory equipment which will run off the generator. Dr. Molina estimates that a new generator will cost around \$60,000.

3.4 Tuberculosis

To gather information on the state of tuberculosis (TB) activities, the EHP consultants interviewed Dr. Nohemy Paz, Head of the National Tuberculosis Program (PNT). In 1997, the program moved from the Department of Epidemiology to the Department of Sexually Transmitted Diseases/AIDS (STD/AIDS). Given the increasing link between TB and HIV infection, the move was appropriate. According to the Head of the PNT, there is a 3% prevalence of TB/HIV dual diagnosis with an incidence rate of over 20% for 1998. Health Sector

II funds were used to restart the program in 1998; limited funding from the Ministry of Health over the past years had resulted in a program with little infrastructure, low TB confirmation rates, and no IEC materials for community and patient education.

In 1998, the PNT developed national guidelines for the control of tuberculosis which were approved by the World Health Organization (WHO) (PNT 1998a, 1998b). The National Tuberculosis Program has identified the following five strategic elements for the national plan:

- policy and administration,
- strengthening of the laboratory network,
- an adequate supply of drugs for TB treatment,
- an information system, and
- directly observed therapy (Tratamiento Acortado Estrictamente Supervisado - TAES) for TB case management.

Program goals and objectives have measurable outcomes which are in line with WHO standards (Paz, September 1999).

3.4.1 Training Activities

Most of the 1998 and 1999 scheduled training sessions on the new TB program guidelines and the TAES protocol for Ministry of Health personnel have been held (Paz, July 1999; Paz, November 1999). The PNT adapted a set of five WHO training modules for tuberculosis control to use for the sessions. Each module has a didactic section followed by exercises and questions. The five modules are, in order of use: *Detection and Diagnosis of TB*; *Pharmacological Treatment of Tuberculosis*; *Directly Observed Therapy*; *Supervision, Training, and Health Promotion*; and *Information Systems*. A *Facilitator's Manual* is also included.

In 1998 and 1999, training sessions were provided for laboratory staff in regional and area laboratories to increase the rate of confirmation with bacilloscopy. In addition, laboratories are now capable of cultivating the bacillus.

The Head of the PNT brought Dr. José Caminero, a specialist with the International Union for the Fight against Tuberculosis and Respiratory Diseases, to conduct an educational session on compliance with norms for TB control. This session, developed specifically for pulmonary and infectious disease specialists in private practice, was seen as particularly successful given attendance by all but 3 of the 30 specialists in Honduras.

The PNT also contracted with Dr. David Nelson to provide direction on improved management of directly observed therapy and case management of TB patients at the local level. The Head of the PNT listed a number of practical suggestions which resulted from Dr. Nelson's visit and which will be integrated into ongoing training sessions. One suggestion, which enables TB patients to obtain medications at any health center, was the development of a pocket-sized TB

medication card that patients can carry with them. The card can be filled in by health center staff wherever the patient receives medicines.

3.4.2 Information, Education, and Communication Activities

One area of substantial progress has been the production of information, education, and communication materials for the tuberculosis program. Widespread distribution of and training in the 1998 revised national norms has been a focus of the program during 1998. In addition, five good-quality posters have been printed and distributed: two for use in health centers (one describing the five key elements to successful program implementation and one with a schematic of the diagnosis of tuberculosis), two for community-level use (one focused on TAES and one encouraging community support for TB patients), and one celebrating World AStop Tuberculosis Day.” Some suggestions were made by the EHP consultant team and the Head of the UCI-DETV to clarify points in one of the community-directed posters before it is reprinted.

Other materials which have been produced are a pamphlet, four radio spots (which the consultants did not hear), and one 15-minute video for use in health centers. The video was produced in Japan for Latin America, and USAID funds were used to translate it into Spanish and to add a section that addresses common myths about TB at the end of the video. The video is appropriate for training health center personnel, for students in grades 4 and above, and for personnel working in other departments of the MOH.

Another advance in expanding the target audience has been the development of a curriculum for inclusion as part of medical and nursing school training. This academic year will be the first year of its implementation. The local consultant who developed the curriculum with the schools of medicine and nursing will develop a curriculum for use in public schools, including sections for pre-school, primary, and secondary levels.

3.4.3 Laboratory Network

A total of 12 microscopes were purchased for distribution to the regions and one for the Central Tuberculosis Laboratory. As noted above, training sessions have been held to increase confirmation rates by bacilloscopy. They reached 70% by December 2000.

3.5 Environmental Health Technician Training Program

The proposal to broaden and strengthen the skills of local-level environmental health technicians (TSAs) was first made by USAID and the MOH in 1992. The goals under that early proposal were to stimulate development of a curriculum and training program for Apolyvalent@ field technicians capable of performing environmental health functions in multiple programs.

To meet the original TSA training objective, in 1995 the Minister of Health appointed an ad hoc commission of central-level specialists and department managers which met regularly to organize a 12-week training course, and develop occupational profiles, selection criteria, and course curricula. The training course developed by the ad hoc commission included 15 modular units and was taught by MOH technical specialists and program heads from the central level with collaboration from regional program managers and supervisors. According to the course outline, development of training materials was the responsibility of each instructor. Since each trainer maintains his own didactic materials, there is no single collection of all training materials available for independent review nor is there a single text or set of references used as part of the curriculum.

In September 1998, USAID developed a revised concept paper (*Iniciativa de USAID/Honduras en la Prevención y el Control de Las Enfermedades Infecciosas*) which adjusted the goals for the TSA training program. It formed the basis for an agreement with the MOH on implementing all elements of the Infectious Disease strategies. The goal established by the initiative was to train and equip 344 TSAs (nearly half of the 700 total required) under funding from Health Sector II programs prior to the end of the year 2000.

3.5.1 Training Activities

As described in EHP Activity Report No. 66 (Kalson and Ault 1999), the first group of 29 TSAs completed training in a 12-week course offered in Sanitary Region II at the training center in La Paz in 1997. A second course in Region II in 1998 produced 31 new TSAs, while a third course offered in La Ceiba (Sanitary Region VI) in October 1998 was interrupted by Hurricane Mitch. Since the latter course was never resumed, only 60 TSAs have been trained to date.

In March 1999, the external review of the TSA program (Kalson and Ault) made a number of recommendations for reinitiating the TSA training process. However, since that review, progress toward resumption of the TSA training program and incorporation of recommendations has been limited.

In the seven months since the EHP external review, the ad hoc commission has met only once, in late August 1999. Minutes from the meeting were not available to the consultant team; however, it is clear, based on interviews with members of the commission, that the group did not reach consensus on steps necessary to resume, or even whether to resume, the training process. Some members of the commission expressed the need for clear direction from higher levels within the MOH. Others felt that the MOH should establish a permanent position with the assignment to lead the commission as well as to coordinate, facilitate, and organize the TSA training program.

At present, coordination of the TSA training program rests officially with the General Director of Regulation and Development, who has only recently assigned the task of re-initiating the program to the Human Resources Development Division of the Health Promotion Department. In interviews with most of the departments and divisions involved with the TSA program, the

EHP consultants (and most of the respondents) could not identify anyone within the MOH clearly charged with the task of coordinating, leading, or implementing the recommendations of the ad hoc committee. Coordination is especially important in the process of TSA program development because several divisions across more than nine different MOH departments are involved in the process. All will rely on the TSAs for implementation of their programs in the field.

In spite of this lack of coordination and progress at the central level, graduates of the first two training courses have been fully deployed under direction of the Regional Director of Sanitary Region II.

3.5.2 Implementation Activities

In Sanitary Region II, the integration of those newly trained technicians is well under way, and the process of TSA professional development continues. During a meeting with a representative group of 14 TSAs, two regional supervisors, and the Regional Director, the consultants received the following pertinent responses:

- C Of the 60 graduates from the first two training courses, 58 have assumed TSA responsibilities in multiple program areas in field offices.
- C All of the TSAs responding expressed enthusiasm for their broadened responsibilities.
- C Many of the TSAs do not yet feel completely competent in all areas of their work. To build competency there is a substantial reliance on peer training and team effort within local health posts.
- C None of the TSAs has received the basic equipment package or reference material proposed by the USAID initiative and recommended by the external review (Kalson and Ault 1999).
- C TSAs in several municipalities reported a high degree of collaboration with local municipal governments. One municipality has hired a TSA trained under the MOH program to work as an environmental health liaison/coordinator.
- C Regional supervisors reported a greater capacity at the area and local levels to carry out specific targeted activities. As an example, they cited increased efficiency within Region II to promptly complete a recent flexi-pump installation program.
- C There is a need for professional development programs and in-service training for TSAs.
- C A method of systematically quantifying activities, successes, and shortcomings under the new TSA organizational structure is needed. Indicators other than traditional indexes of

disease and vector levels could provide additional insight into the performance and effectiveness of TSAs.

So far, field accomplishments of the new TSAs have not been listed or quantified, but anecdotal information from local offices in the first five months of implementation suggests that field TSA teams are achieving improved coverage and operating more efficiently than under the old system. The Regional Director has proposed that a system be designed to quantify the service units of the new TSAs to measure of their performance. Service units could be delineated as specific staff activities in programmatic areas. Thus, inspection of a *pila* in a backyard during a dengue habitat survey might be defined as a service unit. Similarly, inspection of a restaurant might be considered a service unit, toward the reduction of disease via poor food handling or identification of unclean cooking conditions. If water quality is a yardstick of program success, then the number of water samples taken could be used as service units in program evaluation.

Since the third training course in La Ceiba was discontinued under emergency conditions, no TSAs in Region VI have completed training, hence none have assumed an integrated role in the field.

3.6 Other Activities

Activities completed under Health Sector II funding for malaria and dengue include the purchase and distribution of new computers to the nine regional MOH offices. The UCI-DETV was provided with a new computer, which arrived just a few days before this consultancy. Unfortunately, the DETV did not configure the computer for the UCI-DETV as specified in EHP Activity Report No. 56 (e.g., WordPerfect, software for desktop publishing, e-mail and internet communication abilities). The DETV has not purchased maintenance contracts for the computers, nor has anti-virus software been installed. With the loss of documents and databases due to extensive virus infestation of all the computers in the department, this oversight may result in a continued loss of departmental documents.

4. ASSESSMENT

4.1 Accomplishments to Date

In comparing project achievements with stated goals, it is important to remember that the plans and objectives in Health Sector II could not anticipate the impact of a devastating hurricane on the ability of the MOH to implement significant program changes. It is not surprising that the recovery efforts delayed implementation of the MOH's *New Agenda for Health, 1998-2002* goals. However, routine program activities were resumed in July 1999, and a renewed effort to implement HSII goals and objectives should be evident as of the end of 1999.

4.1.1 Malaria

There is very little evidence of progress. Training microscopists and malaria field supervisors to improve blood smear taking and reading of the slides is the only positive accomplishment. There has been little progress in development and use of IEC activities, as recommended in EHP Activity Report No. 56. Without a comprehensive external evaluation of the program, program strengthening will not be based upon effective community-level strategies.

4.1.2 Dengue

There has been good progress in development of IEC materials. However, implementation of a one-year, ongoing communication plan as described in EHP Activity Report No. 56 has not yet occurred, and given the overall direction of the program as described in the *1999-2000 Strategic Plan for Operationalization of the National Dengue Program* (DETV, October 1999a), may not be included as a core component of the program.

4.1.3 Tuberculosis

There has been good progress. Implementation of the five strategies for TB control is occurring and much has been accomplished by a small team of three people in just one year.

4.1.4 Environmental Health Technician Training Program

The training and formation program of polyvalent environmental health technicians has fallen far short of the stated objectives. Under goals originally envisioned by the USAID/MOH initiative, nearly 220 TSAs should have completed the basic training course by this time. Administrative

obstacles such as the creation of an appropriate job classification and local organizational adjustments should have been cleared through the ad hoc commission process by now. All training course graduates should have received basic field equipment and reference materials. Evaluation of TSA field performance and follow-up training plans for TSAs should have been well under way.

In the year since Hurricane Mitch there has been almost no progress in removing obstacles to re-starting the program. While the shortfall in number of trained TSAs is due in part to the diversion of priorities caused by the natural disaster, the program has also clearly suffered from the lack of committed, focused leadership in reorganizing, retasking, and coordinating the activities of the ad hoc commission.

4.2 Capacity to Meet Objectives of Health Sector II

The EHP consultants estimate the likelihood of the various programs' meeting their objectives under HSII as follows:

- **Malaria:** unless there is close oversight by USAID/Honduras, the malaria program is unlikely to meet its objectives given the current lack of program progress.
- **Dengue:** with oversight and continued support of IEC activities, there is a very good chance that progress will be made.
- **Tuberculosis:** the program is making good progress in realizing its goals and objectives. With assistance in field testing of IEC materials this program should be on target by the end of the funding period.
- **Environmental health technician training program:** unless there is close oversight by USAID/Honduras, appointment by MOH of a full-time TSA Coordinator, and regularly scheduled meetings of the ad hoc committee, it is unlikely that the stated goals of the program will be met.

5. RECOMMENDATIONS

5.1 Priority Recommendations

Ministry of Health

- C Appropriate officials in the MOH should review recommendations listed in EHP Activity Report Nos. 56 and 66. (See Appendix D and E.)
- C The MOH should implement the integrated communications plan developed by Martínez and Lloyd in October 1998 (Lloyd 1999).
- C The DETV and the UCI-DETV should identify and contract with a qualified full-time technical advisor to provide support for all information, education, and communication activities of the unit. This individual should also provide technical support for USAID-funded IEC activities conducted by the tuberculosis program, under the direction of the Head of the UCI-DETV.
- C MOH should identify one department or division to be responsible for all aspects of the TSA training program administration, implementation and supervision. The responsible department/division should appoint one individual as TSA Coordinator with the authority to manage all aspects of the program.

USAID/Honduras

- C USAID should contract with a long-term technical advisor to work with USAID and the MOH in the following areas:
 - * Coordinate and oversee the environmental health technician training program in cooperation with the MOH TSA Coordinator.
 - * Provide follow-up and oversight services for USAID-funded elements of the malaria, dengue, and tuberculosis programs in Honduras.
- C USAID should initiate the organization of a Central American regional meeting on IEC for dengue, malaria, and tuberculosis. The consultants suggest that EHP coordinate this meeting, since it is already active in USAID projects in El Salvador and Nicaragua.
- C USAID should require that all computers provided to the MOH through USAID funds include a routine maintenance contract and installation of anti-virus software updated on a regular basis (at minimum, three times a year).
- C USAID should continue to find ways to facilitate prompt payment of funds within USAID and MOH guidelines.

- C All training programs funded by USAID should require that a copy of the training schedule as well as all didactic materials be submitted to USAID as part of the reporting requirements.
- C USAID/Honduras should encourage the DETV to hire a consultant to provide the Head of the UCI-DETV and the Head of the National TB Program with technical assistance in IEC activities. This individual should work in the UCI-DETV office, under the direction of the Head of the UCI-DETV.

5.2 Program-specific Recommendations

5.2.1 National Malaria Program

Ministry of Health

- C Given the lack of concrete results following earlier consultant visits, a comprehensive external evaluation of the malaria program is strongly recommended. For an evaluation of community participation and training of Volunteer Collaborator elements of the program, the consultants recommend Lcda. Lourdes Rivas Gutiérrez, Mérida, Yucatán, Mexico. For field technical elements of malaria control, PAHO/EHP recommend Dr. Roberto Barrera, Venezuela, and Dr. Gustavo Bretas, Brazil. All are well founded in community-based strategies and malaria control programs. Consultants hired should assist the MOH in further development of all aspects of the program including diagnosis, treatment, surveillance, training, and prevention.
- C The Head of the DETV should ensure that all IEC and training materials are reviewed and validated by the UCI-DETV prior to printing. No IEC materials should be released without such review.
- C Program plans for strengthening malaria information and reporting systems should be implemented at the earliest possible date. Given the lack of implementation of recommendations made in the last program evaluation (Lloyd 1999), external assistance may be needed in this area.
- C Although training is urgently needed at all levels, no additional training activities should be initiated until completion of the external program evaluation. An outside review may reveal additional training needs not addressed in current plans.

USAID/Honduras

- C USAID should put together an external consultant team, as described above, to assist in a comprehensive evaluation of the national malaria program.

- C As it has done under HSII, USAID should continue to finance recommended equipment, training, and IEC activities pursuant to guidelines established by the external evaluation team in concert with the MOH.

5.2.2 National Dengue/DHF Program

Ministry of Health

- C The MOH should review and implement relevant recommendations in the external program evaluation conducted by PAHO in 1995.
- C The Head of the DETV should ensure that all IEC and training materials are reviewed and validated by the UCI-DETV prior to printing.
- C MOH should improve clinical diagnostic capabilities at the local health area level through ongoing training of health personnel.
- C Appropriate protocols and materials for entomological surveillance training should be developed for use by field technicians—both TSAs and other vector control staff.

USAID/Honduras

- C USAID should release funds immediately to fully equip and furnish the National Dengue Laboratory.
- C USAID should also provide additional funds for the purchase of a back-up generator for the laboratory.

5.2.3 National Tuberculosis Program

Ministry of Health

- C Given the increasing dual diagnosis of TB and HIV, the PNT should maintain its linkage with the HIV/STD Control Program and also strengthen routine TB prevention and control activities for the general population.
- C MOH should provide institutional support for continued implementation of the five strategic elements of the national plan: policy and administration, laboratory network, adequate supply of drugs, information systems, and directly observed therapy for case management.
- Procedures should be established for the review and validation of all IEC materials. The Head of the UCI-DETV can provide assistance in this area.

USAID/Honduras

- C USAID should continue technical and financial support of the newly re-established TB program to ensure full integration of up-to-date TB control and treatment strategies.
- C USAID should review additional equipment needs, e.g., microscopes, with the Head of the PNT.

5.2.4 Environmental Health Technician Training Program

Ministry of Health

- C The Minister of Health should decide whether to continue with plans for the development of TSAs as described in the *New Agenda for Health, 1998-2002*. Should the Minister decide that the TSA training program does not meet Honduras' current needs, he should inform USAID of this decision so that funds can be re-directed.
- C It is essential that the MOH initiate the Civil Service process for creating the TSA job classification. That step would remove a major obstacle to full integration of TSAs at the local level.
- C MOH should establish procedures to ensure compliance with TSA selection criteria and develop recruitment criteria for those regions with insufficient numbers of qualified candidates.
- C MOH should analyze and disseminate to all regional directors and other key personnel the results and lessons learned from the TSA training and implementation processes conducted to date.
- C The TSA Coordinator, once designated within MOH, should be responsible for collecting all didactic materials to be used by each docent. With appropriate external assistance from USAID, the Coordinator should review each module in light of its objectives, the detailed curriculum recommendations found in EHP Activity Report No. 66 (Kalson and Ault 1999), and feedback from trained and experienced TSAs in Region II.
- C Given the time remaining under the current health sector funding cycle, it is realistic to expect that TSA training courses could be completed in two regions. Training for TSAs in the remaining regions would be deferred to the next health sector funding cycle (HSIII). After discussing this recommendation with USAID and others, the consultants feel that the wisest course is to fully train TSAs in the two regions (rather than to train just a few in all regions.)

USAID/Honduras

- C USAID should inform and assist the Minister in the decision-making process regarding continuation of the TSA training program.
- C If a positive decision is made, USAID should encourage the Minister to accelerate the steps required for job classification to implement the TSA program.
- C USAID should allocate funds for the purchase of a basic TSA field equipment package and a set of standard reference materials for each health area.

5.3 Recommendations for Health Sector III

- USAID should include in Health Sector III those malaria control activities identified as necessary through the detailed external review recommended above, since it is unlikely that all activities to strengthen the program under HSII will be completed by December 2000.
- USAID should also include continued support of integrated dengue control given positive progress in the development of IEC materials and the increasing endemicity of dengue hemorrhagic fever.
- USAID should give high priority to continued funding for the PNT as long as it conforms with WHO standards.
- USAID should provide funds through HSIII for ongoing support and follow-up training for TSAs. In those areas not completing TSA training under HSII, sanitary regions should formulate such plans. Sanitary regions which were able to provide training under HSII should draw up plans for continuing education for TSAs.

Appendix A: List of Contacts

MINISTRY OF PUBLIC HEALTH

Sub-secretariat of Population Risks

Dr. Elliethé Girón, Vice Minister

Dr. Carlos Villalobos, Technical Assistant to the Vice Minister

Department of Vector-borne Diseases

Dr. Henry Andrade, Department Head, Vector-borne Diseases

Dr. Laura Julia Salgado, Head, National Malaria Program

Dr. Arturo Maradiaga, Head, National Dengue Program

Lcda. Mercedes Martínez, Head, Institutional Coordination Unit

Biol. Catalina Sherman, Vector Biologist

National Center for Diagnostics

Dr. Ida Berenice Molina, Head

Department of Health Emergencies

Dr. Godofredo Andino, Department Head

Department of STD/HIV/TB Control

Dr. Ramon Soto, Department Head

Dr. Nohemy Paz, Head, National Tuberculosis Program

Lcda. Tomasa Sierra, Tuberculosis Control Technician

Sub-secretariat of Development and Regulation

Ing. José Ruben Gómez, Director General

Lcda. Suyapa Agüero, Assistant to the Director General

Department of Health Promotion

Dr. Mario Rivera Vásquez, Department Head

Lcda. Dora Rubi, Health Educator

Division of Human Resources Development

Dr. Jorge Medina, Department Head

Lcda. Suyapa Barahona, Technical Assistant

Sub-secretariat of Health Services Network

Dr. Gustavo Flores, Director General

Ministry of Health, Sanitary Region I

Gabriel Orellano, Area 1 Supervisor for Epidemiology
Daisy Albarenga, Area 1 Health Educator

Malaria Control Volunteer Collaborators, Area 1, Region I

Xiomara Moncada, ColVol, Sartenejas
Juana Concepción Andino, ColVol, Sartenejas

Ministry of Health, Region II

Dr. Alejandro Melara, Regional Director
Technical Program Supervisors (2)
Environmental Health Technicians (14)

PAN AMERICAN HEALTH ORGANIZATION

Dr. Francisco Pinhiero, PAHO Washington, D.C.
Dr. Luis Gerardo Castellanos, Communicable Disease Advisor, PAHO Honduras
Dr. María de los Angeles Mendoza, Consultant, PAHO Honduras

USAID/HONDURAS

Ing. Herb Caudill, Water and Sanitation Advisor
Dr. John Rogosh, Director, Human Resources Department

Appendix B: Itinerary

Thursday, October 21	Travel California to Arlington
Friday, October 22	Team Planning meeting, EHP, Arlington. Discussion with Dr. Francisco Pinhiero, PAHO Washington, D.C.
Saturday, October 23	Travel Washington, D.C. to Tegucigalpa, Honduras.
Sunday, October 24	Document review, arrival confirmation.
Monday October 25	Meeting at USAID with Herb Caudill at 8:30 am. Meeting Dr. Laura Salgado, DETV. Meeting with Ing. José Ruben Gómez Review malaria program documents. Itinerary planning.
Tuesday, October 26	Meeting at DETV with Mercedes Martinez, and Dora Rubi. Discussion with Suyapa Agüero. Interview with Dr. Godofredo Andino, Head, Disaster Management Program. Visit to print shop to review and edit Dengue/Malaria posters in production.
Wednesday, October 27	Field visit to Area 1 Health Center in Danlí, Sanitary Region I. Discussion with malaria program field staff. Travel to Sartenejas for discussions with two Volunteer Collaborators.
Thursday, October 28	Phone Conversation, Herb Caudill, USAID. Discussion with Dr. Eduardo Fernández, former Head of DETV. Follow up meeting with Dr. Laura Julia Salgado. Discussion with Catalina Sherman, Vector Biologist, DETV. Discussion with Dr. Luis Castellanos, PAHO. Follow-up discussion with Mercedes Martínez
Friday, October 29	Discussion with Dr. Arturo Maradiaga, Head, National Dengue Program. File review, USAID offices.
Saturday, October 30	Field visit to Sanitary Region II, Comayagua. Discussion with 14 environmental health technicians, 2 program supervisors and Dr. Alejandro Melara, Sanitary Region II Director.

Sunday, October 31	Halloween. Report development.
Monday, November 1	Meeting with Dr. Henry Andrade, Head, Department of Vector-borne Diseases. Follow-up meeting with Mercedes Martínez. Meeting with Drs. Gustavo Flores and Jorge Medina. Short briefing with Dr. Villalobos, assistant to the Vice Minister of Population Risks. Visit to National Dengue Laboratory with Dr. María de los Angeles Mendoza, PAHO.
Tuesday, November 2	Follow-up meeting with Dr. Jorge Medina, Head, Human Resource Development. Visit to the AIDS/STD/TB Department, and interviews with Drs. Nohemy Paz and Ramon Soto, Department Head. Briefing with Herb Caudill, USAID.
Wednesday, November 3	Report development. Follow-up meeting with Dr. Ruben Gomez (cancelled). Follow-up meeting with Dr. Villalobos.
Thursday, November 4	Report development. Meeting with Dr. Ellette Giron, Vice Minister for Population Risks, Dr. Villalobos and several representatives of departments involved in TSA training courses. Meeting with Dr. Mario Rivera, Head, Department of Health Promotion. Exit interview at USAID with John Rogosh and Herb Caudill. Report development.
Friday, November 5	Good-byes. Left draft report with USAID. Travel to California.
Note on the weather:	Cool, windy, several days of sun and a day of rain, but no hurricanes, gracias a Dios!

Appendix C: References

Arata, A., and Clark, G. April 1998. *Infectious Disease Strategy for USAID/Honduras*. Arlington, Virginia: Environmental Health Project.

Departamento de Enfermedades de Transmisión Vectorial (DETV). August 1999. *Situación epidemiológica del dengue: primer semestre 1995 - 1999*. Tegucigalpa, Honduras: Ministry of Health.

_____. September 1999. *Propuesta técnica normativa para el abordaje de la problemática de malaria: Programas de prevención y control de la malaria*. Tegucigalpa, Honduras: Ministry of Health.

_____. October 1999 (a). *Plan estratégico para el abordaje del problema del dengue a nivel operativo, Año 1999 - 2000*. Tegucigalpa, Honduras: Ministry of Health.

_____. October 1999 (b). *Muestras examinadas y positivos de malaria por regiones y áreas de salud. Comparativo de 1998 - 1999" de la semana #1 a la #39*. Tegucigalpa, Honduras: Ministry of Health.

_____. 1999. *Proyecto enfermedades infecciosas, DETV-USAID (Malaria)*. Tegucigalpa, Honduras: Ministry of Health.

Dirección General De Regulación y Desarrollo Institucional. February/June 1997. *Curso Integral en Salud Ambiental, Compendio de Cartas Descriptivas-Unidades*. Tegucigalpa, Honduras: Secretaría de Estado en el Despacho de la Salud.

_____. July 1998. *Modificaciones a Cartas Tematicas al Curso Integral en Sanamiento Ambiental*. Tegucigalpa, Honduras: Secretaría de Estado en el Despacho de Salud.

Dirección de Planificación Departamento de Estadística. 1998. *Boletín de Información Estadística de Atención Ambulatoria, 1997*. Tegucigalpa, Honduras: Secretaría de Salud.

_____. July 1998. *Boletín de Información Estadística de Atención Hospitalitaria, 1997*. Tegucigalpa, Honduras: Secretaría de Salud.

Kalson, D.J., and Ault, S.K. May 1999. *Activity Report No. 66, Evaluation of a Training Program for Environmental Health Technicians in Honduras*. Arlington, Virginia: Environmental Health Project.

Lloyd, L.S. February 1999. *Activity Report No. 56, An Assessment of Health Education Materials for Control of Dengue and Malaria in Honduras*. Arlington, Virginia: Environmental Health Project.

Pan American Health Organization. April 1995. *Report on an external evaluation of the dengue/dengue hemorrhagic fever control program in Honduras*. Washington, D.C.

Pan American Health Organization. May 1998. *State of implementation and execution of the continental plan for the amplification and intensification of the combat against Aedes aegypti in Central America, Mexico, and the Dominican Republic*. Workshop held in Managua, Nicaragua. Washington, D.C.

Pan American Health Organization. August 1999. *Report on the Status of Malaria Programs in the Americas*. Washington, D.C.

Paz, Nohemy. July 1999. *Monitoría de Metas - Primer Semestre, 1999. Proyecto USAID*. Tegucigalpa, Honduras: Programa Nacional para el Control de la Tuberculosis, Departamento de ETS/SIDA/TB, Ministry of Health.

_____. September 1999. *Plan de Acción: Programa Nacional para el Control de la Tuberculosis Año 2,000. Fondos de donación USAID*. Tegucigalpa, Honduras: Programa Nacional para el Control de la Tuberculosis, Departamento de ETS/SIDA/TB, Ministry of Health.

_____. November 1999. *Resultados Preliminares en la Estrategia TAES, Octubre 1998 a Septiembre 1999*. Presentation given at a regional meeting for STD/AIDS control programs in Central American countries. Tegucigalpa, Honduras: Programa Nacional para el Control de la Tuberculosis, Departamento de ETS/SIDA/TB, Ministry of Health.

Programa Nacional de Control de la Tuberculosis. 1998a. *Proyecto Fortalecimiento del Programa Nacional de Control de la Tuberculosis*. Tegucigalpa, Honduras: Ministry of Health.

_____. 1998b. *Manual de Normas de Control de Tuberculosis*. Tegucigalpa, Honduras: Ministry of Health.

Torres, O., Saenz de Tejada, S., Hurtado, E., de Flores, R., & Matute, J. December 1998. *Enfoque en la Mobilización Social en la Prevención de Dengue en Guatemala*. Arlington, Virginia: Environmental Health Project.

United States Agency for International Development. n.d. *USAID/Honduras initiative in the prevention and control of infectious diseases*. Tegucigalpa, Honduras: United States Embassy.

United States Agency for International Development. n.d. *Proceedings Report: Technical Consultation on USAID's Infectious Diseases Strategy*. Washington, D.C.

Appendix D: Recommendations from EHP Activity Report No. 56 (Lloyd, 1999)

RECOMMENDATIONS

General recommendations

1. Due to the limited staffing of the Institutional Coordination Unit (one person, the Head, and an assistant who started in August, 1998) and the key role this unit plays in the development, production, and implementation of all IEC activities for the four DETV diseases, it is recommended that short-term technical assistance be obtained for the Head of the UCI-DETV for at least the first six months of this project given the intensity of work to be accomplished to start-up the project. The individual contracted for this short-term consultancy must be a Honduran national, have a bachelor's degree in either social work or pedagogy and have experience working in health.
2. Due to the number of activities to be implemented simultaneously as part of the integrated communications plan, it is recommended that a consultant be provided for a one-month period during the second trimester of the work plan, if at all possible, to assist the UCI-DETV in systematizing information collection, organizing materials production, development of radio and TV spots, and staging of communications events. Given the multiple tasks expected of this consultant, USAID or EHP should consult with either the EHP consultant or the Head of the UCI-DETV regarding the identification of such consultant. The consultant should be from Latin America with experience in managing all aspects of a community-based dengue control program.
3. Due to the inadequate capabilities of the UCI-DETV computer, it is recommended that one of the computers to be purchased through the USAID/Honduras Infectious Disease initiative be directed to the UCI-DETV. This computer should contain updated versions of standard software programs, such as WordPerfect, a recent anti-virus program, and a database/statistical analysis program such as EpiInfo (produced by CDC, in both English and Spanish). The computer equipment should also come with an uninterrupted power supply given long-term problems with the electrical supply.
4. Given the investment of funds through this project in the purchase of computers (7) and the current infestation of all computers at the DETV offices with viruses because the anti-virus program is over one year old, USAID should require that the DETV provide routine maintenance to the computers and update anti-virus programs on a regular, at least semiannual, basis. This will prevent the loss of information and documents, which has already occurred on at least two occasions.

5. Due to the lack of personnel with sufficient computer skills, it is recommended that a person with database design and data entry skills be hired for short periods of time to help the UCI-DETV set up databases, train staff, and enter data as necessary.
6. Due to the inadequate space in the UCI-DETV office because of size and the fact that water leaks into the office when it rains, a secure and accessible space for storage of educational materials and equipment needs to be identified by the DETV and the UCI-DETV before any materials are produced.
7. It is recommended that USAID continue to facilitate interchange of ideas, information, and experiences between Central American countries with similar levels of dengue and malaria. This type of interchange stimulates creativity, provides a source of professional support, and saves time and energy if there are ideas which can be tested in other countries.

Specific recommendations by area

1. Due to the apparent decision to consolidate the production of radio and TV spots at the central Office of Publicity, radio spots have been produced for dengue without the participation of either the DETV or the UCI-DETV. This is particularly worrisome given the lack of technical expertise in the areas of dengue and malaria in that office and in the companies contracted to design and produce the spots. Additionally, all dengue and malaria messages, whether they be visual or verbal, should be produced within an integrated framework so that coherence between all communication channels and messages can be ensured.

It is recommended that a meeting be held between the DETV, UCI-DETV, PNM, the Office of Publicity, and USAID to discuss with the central office what the goals and objectives of the integrated communications plan are and how coordination of activities will benefit the different departments involved.

2. Given the serious lack of information on many aspects of the national malaria program and the interest of the Head of the PNM in a program evaluation prior to the start of training activities to be conducted through the USAID Infectious Disease initiative, it is recommended that a consultant or team of two consultants be contracted with to conduct an in-depth evaluation of the malaria program, with a special emphasis on the CoIVol component.

Appendix E: Recommendations from EHP Activity Report No. 66 (Kalson & Ault, 1999)

General Recommendations to the Honduras Ministry of Health

- The MoH should complete as soon as possible the Civil Service process for creating the job classification of Environmental Health Technician (TSA).
- The MoH, in close coordination with Sanitary Region 6 should re-start as soon as possible, the TSA training course in La Ceiba.
- Consideration should be given to development an organizational structure placing all Environmental Health functions within a single branch of the MOH at each level. This branch should be elevated to the level of Subsecretariat in the MOH to ensure a clear, undivided focus from the Minister of Health.

Principle Recommendations to the USAID Mission

- Present the TSA program to the new Minister promptly, to obtain his enrollment and support. As a component of the New Health Agenda 1998-2002, the program can legitimately be presented as a key health reform strategy.
- The TSA program clearly warrants continued USAID technical and financial support as an innovative Central American model to modernize Environmental Health services delivery.
- USAID should fund the basic field equipment package outlined in this report.
- USAID should select, fund and directly distribute a set of basic educational and technical materials, manuals and references.

Additional recommendations relative to five areas evaluated:

The selection process

- The Ad-hoc Commission should initiate an effort to recruit a small percentage of TSAs as new employees. Priority should be given to recruiting women to promote equity, and to take advantage of skills and experiences as shaped by gender and culture.

Organizational structure/support

- Programmatic areas of responsibility of the proposed Environmental Health branch (and of the TSAs) should be limited to those areas which legitimately fall within the scope of Environmental Health.
- The list of tasks under each environmental health program in the TSA occupational profile is not prioritized, but should be. The TSA needs to know what are priority areas of focus.
- Consideration should be given to transferring responsibility for nutrition programs to Family Health or Health Education departments (if resources are available).

- Environmental contamination responsibilities of the TSA should be reviewed in concert with CESSCO to ensure that TSAs are authorized under the law to carry out tasks listed in the occupational profile.
- Occupational Health responsibilities should be evaluated the same as Environmental Contamination themes (above). The tasks of the TSA should probably be limited to three: Hazard identification, exposure pathway assessment, and referral of violations to appropriate agencies.
- Mental Health responsibilities should be transferred away from the TSA profile, and assigned to public health nurses, social services or health education departments.

Motives/incentives

- Central and Regional planning should include an incentives program (both monetary and non-monetary) in the refinement of job classifications for TSA.
- Long term planning should include an opportunity for advancement,
- USAID and PAHO should promote opportunities for professional interaction with affiliate EH organizations.
- A system of prompt payment/reimbursement of per diem and travel costs should be implemented for all training course participants.

Physical support

- The formation of TSAs should include a basic set of equipment and tools to successfully complete the work of monitoring, surveillance and enforcement of environmental health regulation.
- Reference materials should be purchased as an adjunct to the training program and maintained at the Area level accessible for use by field staff.

Training

- The Ad-hoc Commission should develop a plan for on-going professional development and continuing education and on-the-job training.
- Given that training 700 TSAs, several years will be required to fully integrate the TSA program. A permanent course coordinator should be appointed at the central level to ensure course continuity.
- Long term plans should include a university level 2-year course for Environmental Health Specialists, who could eventually assume supervisory roles at the local, area and regional activity levels.
- The MOH should review all technical content curriculum to incorporate the risk assessment model: hazard identification (including surveillance, monitoring and etc.), exposure pathway evaluation, risk assessment (health outcomes), and risk communication.
- Department of Vector Control should revise the curriculum in vector control to emphasize prevention and control strategies with environmental management, social communication, and community participation as THE basis for the program, complemented by chemical and other control measures.

- Incorporate a communications plan for prevention of Vector-borne diseases into the TSA curriculum.
- The TSA curriculum should maximize the use of case studies as a powerful, practical teaching tool.
- Practical, hands-on exercises (in the field, if possible) should be included as part of all lesson plans.
- The Ad-hoc Commission should stress the need for more involvement in the training course by Regional personnel and tutors. Tutors and docents should participate in joint planning activities prior to beginning each module. Teaching responsibilities, especially in the practical realm, can be shared by tutors with expertise in specific areas.