

ENVIRONMENTAL HEALTH PROJECT

Report for the File No. 426

Work Plan for Year 4 Task Order 1

February 2003

Prepared for the U.S. Agency for International Development
under EHP Project No. 26568/ WORKPLAN.Y4.

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
BUREAU FOR GLOBAL HEALTH
OFFICE OF HEALTH,
INFECTIOUS DISEASES AND NUTRITION
WASHINGTON, DC 20523-1817



ENVIRONMENTAL HEALTH PROJECT
1611 N. KENT ST., SUITE 300
ARLINGTON, VA 22209
PHONE (703) 247-8730
FAX (703) 243-9004
www.ehproject.org



ENVIRONMENTAL HEALTH PROJECT

Work Plan for Year 4

Task Order 1



U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
BUREAU FOR GLOBAL HEALTH
OFFICE OF HEALTH, INFECTIOUS DISEASES AND
NUTRITION
WASHINGTON, D.C. 20523-1817

ENVIRONMENTAL HEALTH PROJECT
1611 N. KENT ST., SUITE 300
ARLINGTON, VA 22209
PHONE (703) 247-8730
FAX (703) 243-9004
WWW.EHPROJECT.ORG

Contents

Tab 1.	Introduction and Work Plan Development—Task 1	1
Tab 2.	Lessons Learned and Policy—Task 2	3
Tab 3.	Community-Based Environmental Sanitation and Hygiene (CESH)—Task 3	22
Tab 4.	Environmental Change and Health Outcomes Cross-Sectoral Surveillance (ECHO/XS)—Task 4A	41
Tab 5.	Environmental Change and Health Outcomes Integrated Programs (ECHO/IP)— Task 4B	74
Tab 6.	Information Center—Task 6	77
Tab 7.	Urban Health—Task 7	85
Tab 8.	General Office Support	93
Tab 9.	Financial Summary	94

Abbreviations

AFRIMS	U.S. Armed Forces Research Institute of Medical Sciences, Thailand
AFRO-NETS	African Networks for Health and Development
AIDS	acquired immunodeficiency syndrome
AM	activity manager
ANE	Asia and the Near East
ANVR	African Network for Vector Resistance
APHA	American Public Health Association
ARI	acute respiratory infection
BASICS	Basic Support for Institutionalizing Child Survival
BBIN	Bangladesh, Bhutan, India, and Nepal
BCC	behavior change communication
BPKIHS	B. P. Koirala Institute of Health Sciences
Bs	<i>Bacillus sphaericus</i>
Bti	<i>Bacillus thuringiensis</i> subsp. <i>israelensis</i>
CA	cooperating agency
CBO	community-based organization
CDC	Centers for Disease Control and Prevention
CDM	Camp Dresser & McKee International Inc.
CECI	Canadian Center for International Studies and Cooperation
CESH	Community-Based Environmental Sanitation and Hygiene
CGIAR	Consultative Group on International Agricultural Research
CSGP	Child Survival Grants Program
C/IMCI	community-based IMCI

CIMEP Program	Community Involvement in Managing Environmental Pollution Program
CORE Group	Child Survival Collaborations and Resources Group
CS	child survival
CSTS Project	Child Survival Technical Support Project
CTO	cognizant technical officer
DAP	detailed activity plan
DBL	Danish Bilharziasis Laboratory
DEC	Development Experience Clearinghouse, USAID
DFID	Department for International Development, United Kingdom
DHS	Demographic and Health Survey
DHS+	MEASURE DHS
DIGESA	General Directorate of Environmental Health (Dirección General de Salud Ambiental), Peru
DIP	detailed implementation plan
ECHO	Environmental Change and Health Outcomes
ECHO/IP	ECHO Integrated Programs
ECHO/IVM	ECHO Integrated Vector Management
ECHO/XS	ECHO Cross-Sectoral Surveillance
EDCD	Epidemiology and Disease Control Division, Department of Health, Nepal
EH	environmental health
EHP	Environmental Health Project
EIR	entomological inoculation rate
ELISA	enzyme-linked immunosorbent assay
EOP	end of project

EWARS	Early Warning and Response System
F&A	finance and accounting
FCHV	female community health volunteer
FY	fiscal year
GARNET	Global Applied Research Network
GDA	Global Development Alliance, USAID
GIS	geographic information system(s)
HH/C-IMCI	household- and community-based IMCI
HIF	Hygiene Improvement Framework
HIV	human immunodeficiency virus
HPE	health, population, and environment
HPI	Heifer Project International
ICDDR,B	International Center for Diarrhoeal Disease Research, Bangladesh
IC	Information Center
IIN	International Institute for Nutrition
IMCI	integrated management of childhood illnesses
INAPA	National Water Supply and Sewerage Institute (Instituto Nacional de Aguas Potables y Alcantarillados), Dominican Republic
IQC	indefinite-quantity contract
IR	intermediate result
IRC	International Water and Sanitation Center
IRD	Development Research Institute (Institut de recherche pour le Développement)
ISTI	International Science and Technology Institute, Inc.
IVM	integrated vector management
JE	Japanese encephalitis

JHU	Johns Hopkins University
JHU/CCP	JHU Center for Communication Programs
JMP	WHO-UNICEF Joint Monitoring Program
KA	kala-azar
KPC 2000	Knowledge, Practices, and Coverage Survey 2000
LAC	Latin America and the Caribbean
LLP	Lessons Learned and Policy (Task 2)
LSHTM	London School of Tropical Medicine and Hygiene
M&E	monitoring and evaluation
MEASURE	Monitoring and Evaluation to Assess and Use Results
MICET	Madagascar Institute for the Conservation of Tropical Ecosystems (Madagascar Institute pour la Conservation des Ecosystèmes Tropicaux)
MICS	Multiple Indicator Cluster Survey
MIM	Multilateral Initiative on Malaria
MOH	ministry of health
MOU	memorandum of understanding
MPA	Methodology for Participatory Assessments, Water and Sanitation Program
NGO	nongovernmental organization
NMCP	national malaria control program
NPHL	National Public Health Laboratory, Nepal
ODC	other direct cost
ORT	oral rehydration therapy
PAHO	Pan American Health Organization
PDF	Adobe Portable Document Format

PHAST Program	Participatory Hygiene and Sanitation Program, WHO
PHN	population, health, and nutrition
PHT	public health technician
PMT	Project Management Team
PPP	public-private partnership
PSSMC	Partnership for Social Sciences in Malaria Control
PVO	private voluntary organization
PY	project year
RBM Initiative	Roll Back Malaria Initiative, WHO
RBM Secretariat	Roll Back Malaria Secretariat, WHO
REDSO	Regional Economic Development Support Office, USAID
RUDO	Regional Urban Development Office, USAID
SAF	Department for Development, Church of Jesus Christ, Madagascar
SAFE	Sanitation and Family Education Project, Bangladesh
SAMC Program	Southern Africa Malaria Control Program, WHO
SANICON	Sanitation Connection
SANRU III	Rural Health Program (Programme de Santé Rurale) III
SESPAS	Ministry of Public Health and Social Assistance (Secretaría de Estado de Salud Pública y Asistencia Social), Dominican Republic
SIMA	System-Wide Initiative on Malaria and Agriculture
SO	strategic objective
SOTA	state of the art
SOW	statement of work
STA	senior technical adviser
STI	Swiss Tropical Institute
TA	technical assistance

TDY	temporary duty
TO1	Task Order 1
TSA	environmental health technician
TWG	technical working group
UNDP	UN Development Program
UNEP	UN Environment Program
UNICEF	UN Children's Fund
USAID	U.S. Agency for International Development
USAID/AFR/SD	Office of Sustainable Development, Africa Bureau, USAID
USAID/ANE	USAID Asia and Near East Bureau
USAID/BGH/HIDN	Office of Health, Infectious Diseases and Nutrition, Bureau for Global Health, USAID
USAID/BHR/PVC	Office of Private and Voluntary Cooperation, Bureau for Humanitarian Response, USAID
USAID/DCHA/PVC	Office of Private and Voluntary Cooperation, Bureau for Democracy, Conflict, and Humanitarian Assistance, USAID
USAID/EGAT/ENV/UP	Office of Environment and Urban Programs, Office of Environment, Bureau for Economic Growth, Agriculture, and Trade, USAID
USAID/GH	Bureau for Global Health, USAID
USAID/GH/HN	Office of Health and Nutrition, USAID/GH
USAID/GH/POP	Office of Population, USAID/GH
USAID/Global	USAID Bureau for Global Programs
USAID/LAC	USAID Bureau for Latin America and the Caribbean
USAID/REDSO/ESA	USAID Regional Development Services Office for East and Southern Africa
VBD	vector-borne disease
VBDRTC	Vector Borne Disease Research and Training Center, Nepal

VCNA	vector control needs assessment
VDC	village development committee
WASH	Water and Sanitation for Health Project
WELL	Water and Environmental Health at London and Loughborough
WG	working group
WHO	World Health Organization
WHO/AFRO	Regional Office for Africa, WHO
WHO/SEARO	South East Asia Regional Office, WHO
WS&S	water supply and sanitation
WSH	water, sanitation, and hygiene
WSP	Water and Sanitation Program
WSSCC	Water Supply and Sanitation Collaborative Council
XS	cross-sectoral surveillance

Preface

As the second phase of the Environmental Health Project (EHP II) concludes its third year, EHP seeks both to articulate its accomplishments to date and to refine its strategy for the remaining two years. For each of the two intermediate results (IRs), EHP has identified a niche where we believe we can best make specific contributions to broader agendas based on our comparative advantages.

In the case of diarrheal disease, we have a great deal of experience, especially working within and in collaboration with the water and sanitation sector; moreover, elaboration of the Hygiene Improvement Framework (HIF)¹ has significantly contributed to framing not only our own work but also that of important partners, notably the UN Children's Fund (UNICEF). The challenge for EHP II has been to translate its success into the context of the health sector, especially child survival programming. EHP's Community-Based Environmental Sanitation and Hygiene (CESH) activities for Year 4 therefore seek to develop further and realize the mainstreaming of effective diarrhea prevention activities into integrated child health programming within both USAID and partner organizations, notably with the Pan American Health Organization (PAHO) in Nicaragua and Peru.

With respect to malaria, for which international donor interest and funds continue to expand, EHP has identified a niche among the various players and activities that are already working to lower malaria morbidity and mortality. EHP is helping the malaria control programs in Eritrea to make more effective use of vector control interventions, by improving tools for collecting and using information for program decisions, developing practical environmental management interventions to reduce vector breeding, and assisting malaria control programs in using these tools and otherwise strengthening their capacities. In Nepal, EHP is helping strengthen program capacities for surveillance and diagnosis and prevention for malaria, Japanese encephalitis, and kala-azar. By better defining the circumstances in which vector control methods are most effective and the best means for their implementation, EHP makes a contribution to malaria control programs that is unique among USAID technical assistance projects.

Urban health has been formally signaled (through an amendment to Task Order 1 [TO1]) as a core task this year. It is clearly emerging as a potential arena for expanding EHP's niche. As in other areas, it is an example where we are being asked to build on previous success. In this case, EHP's successful track record in urban environmental health activities, especially related to water and sanitation services for the poor, led USAID to look to EHP both to help assess the potential and to support expanded urban programming in Asia (including India and Egypt) and Africa (e.g., Ghana and Uganda).

We also will continue to explore other promising avenues for future environmental health. During Year 4, EHP expects to develop policy reports on the role of hygiene improvement in

¹ Masee Bateman and Chris McGahey. "A Framework for Action: Child Diarrhea Prevention." *Global HealthLink* no. 111, pp 9–16 (September 9, 2001). Global Health Council.

food security and nutrition programs and on the role of hygiene improvement in the care of people living with HIV/AIDS.

EHP continues its strong legacy of responsiveness to field requests. For example, we responded to a series of requests from USAID/Peru to provide technical and procurement assistance to the mission's Urban Environmental Health and Behavior Change activity. Key activities expected during Year 4 will include the development of a national environmental health surveillance system and assistance with the development of national policies for addressing the environmental health needs of the urban poor. EHP has continued its responsiveness to USAID/West Bank & Gaza through the provision of technical assistance for the mission's Village Water Supply and Sanitation Program, with much of EHP's assistance shifting to emergency repair and replacement of existing water supply and sanitation (WS&S) infrastructure. For the USAID Latin America and the Caribbean (LAC) Bureau, we have helped to develop approaches to deal with sanitation in small towns.

Over the course of the project's design and first three years of implementation, EHP has relied on some important strategies that characterize our efforts in environmental health across both diarrhea and malaria prevention activities. In looking toward Year 4, we want to signal the most important of these, which, together with growing subject matter experience, provide a basis for lessons learned and exploration of promising avenues for environmental health actions beyond our current agenda.

1. **Work in partnership.** To contribute significantly to improved child health, EHP works in partnership with other USAID projects, UN and international agencies, research institutions, private voluntary and nongovernmental organizations, and private, for-profit corporations. EHP II, building on the legacy of its predecessors, EHP I and the Water and Sanitation for Health Project (WASH), has a solid history of partnership with organizations primarily concerned with improving the environment, serving as an effective voice for including health concerns (and associated program decisions) in environmental programs. The partnership strategy under EHP II has sought to maintain these relationships while placing greater emphasis on partnering with those primarily concerned with improving child health, with the goal of more effectively integrating environment-related prevention measures into child health programs. While clearly recognizing the value of partnering as a means, not an end in itself, we understand that effective partnerships, through leveraging resources, political or programmatic influence, etc., are central to success in achieving EHP's results and completion of individual activities.
2. **Focus on Implementation.** Like other centrally funded USAID projects, EHP focuses on both technical leadership and field support. Advancing the state of the art through the development of effective tools and methods is integral to EHP's objectives, and we seek to implement this agenda in the context of providing high-quality technical support to USAID missions and field activities. We will ultimately judge our success by how well we are able to assist local and national implementing partners in using what we know to take programming to scale. Field activities have provided opportunities to advance assessment, monitoring, and evaluation methods and tools during the initial three years of the project. Field-level activities during Years 4 and 5 will reap the benefits of the

work to date. In choosing where to support field implementation, we balance the importance of being systematic (seeking out situations that best fit criteria for fulfilling technical agenda) with being opportunistic (responding to missions' requests and other promising situations as they appear). We will also promote synergies where possible in our support of field implementation by integrating work at multiple levels, from community-based activities to policy improvement.

3. **Build on legacy of strengths in field activities.** In addition to the above and based on an extensive track record of responsive technical support, EHP's field effectiveness is based on the following elements:
 - a. Community-based approaches that focus efforts and results at level of households and communities
 - b. Incorporation of capacity building for national and local organizations
 - c. Reliance, where possible, on use of locally available resources
 - d. Identification and involvement of multiple stakeholder perspectives and interests
 - e. Use of an interdisciplinary lens (including epidemiology, behavioral science, engineering, finance, economics, and institutional development) for situation analysis and implementation
4. **Expand effective outreach.** EHP begins Year 4 having made strides to reach both traditional and new audiences more effectively, and it is targeting resources toward specific key products and groups to ensure effective contributions to the state of the art. Channels for this targeting of resources include selected journal articles and practical support for field-level implementers (e.g., field manuals and other guidance tools).

As of the end of Year 3, we continue to focus on country-level implementation across both the CESH and the Environmental Change and Health Outcomes (ECHO) agendas. This means that some activities that have been identified as conceptually separate under Task 2, Lessons Learned and Policy (LLP), in previous work plans (e.g., under indicator development and partnerships) are increasingly integrated into CESH or ECHO in this year's plan.

Along with the needs of TO1's technical agenda, EHP's emphasis on field-level work is driven by continued strong demand from USAID missions and other USAID clients for the effective, responsive technical services that are the legacy of EHP I and WASH; fully 75% of project funding to date, including half of the funds programmed under TO1, is from sources other than the "core" provided by the Office of Health, Infectious Diseases and Nutrition of the USAID Bureau for Global Health (USAID/BGH/HIDN). In Year 4, EHP continues its efforts to integrate these responsive activities with its "core" technical agenda under TO1.

In addition to building on past success, EHP's field presence is evolving toward increased emphasis on longer-term involvements, including the presence of in-country EHP staff, both

local and expatriate; the number of countries with a long-term EHP presence has grown to five (Nepal, Eritrea, Madagascar, India, and the West Bank).

Efforts during Year 3 to accelerate field-based implementation faced some significant challenges, and our progress was not as great as our optimistic expectations. The aftermath of the attack of September 11 meant some significant delays for many field activities (e.g., start-up for the work in community-based integrated management of childhood illnesses [C/IMCI] with PAHO in the LAC region). Specific internal conflicts (e.g., in India, Nepal, and Madagascar) likewise exacted a toll on the progress of field activities in those countries.

Nonetheless, some important trends are consolidating and opportunities are emerging that will receive continued support and analysis in the coming year. Urban health, for example, clearly is an area where we have an opportunity for leadership. Similarly, EHP is prepared to support a significant emerging initiative for hygiene improvement in West Africa under USAID's Global Development Alliance during Year 4, based on our solid reputation and past performance with anticipated key partners, including UNICEF and World Vision. The malaria-centered work to date in vector control has led to requests for EHP to expand its activities to address other vector-borne threats, including dengue in LAC, kala-azar and Japanese encephalitis in South Asia, and possibly filariasis.

Overall as we look toward Year 4, we believe we are well positioned to achieve the results articulated for TO1 and to help chart a course for future initiatives in environmental health.

Introduction

This work plan describes activities under Task Order 1 (TO1) only and covers the period from July 1, 2002, to June 30, 2003. The sections below correspond to the seven tasks under TO1. In addition, there is a section on general office support and a financial summary.

Expected Project Results

The U.S. Agency for International Development (USAID) established the second phase of the Environmental Health Project (EHP II) to achieve two objectives:

1. Reduce mortality and morbidity in children under five years old, as well as mortality and morbidity associated with infectious diseases of major public health importance, by improving environmental conditions or reducing exposure to disease agents
2. Provide a mechanism to respond to diverse interests within USAID in environmental health

Consistent with these objectives, USAID designed EHP II as an indefinite-quantity contract (IQC) with two main parts. TO1, which was awarded at the same time as the umbrella IQC, is focused on achieving the first objective above. The IQC also provides for other task orders, which gives USAID missions and other parts of the agency a mechanism for requesting assistance specifically tailored to their needs, allowing EHP to respond in a manner that achieves the second objective.

TO1 aims to improve child health through reducing children's exposure to life threatening illnesses, particularly diarrhea and malaria. EHP addresses environmental determinants of these diseases, including behaviors, and provides global leadership in the development, implementation, and promotion of new and improved, cost-effective, and scaled-up environmental health interventions. TO1 is specifically designed to accomplish two of USAID's intermediate results (IRs):

- IR 1—Community-based Environmental Sanitation and Hygiene (CESH): Improved environmental health interventions will be implemented at the community and household levels, as well as taken to scale at the national level, using innovative methods proven to be effective in reducing childhood mortality and morbidity due to diarrheal disease, acute respiratory infections (ARI), and malaria as well as other vector-borne diseases.
- IR 2—Environmental Change and Health Outcomes (ECHO): Surveillance systems and interventions which support and exploit improved understanding of the connections between environmental factors and health outcomes at the local, national, and regional levels will be developed and implemented. Consistent with the overall objective of EHP, this result is focused on reducing childhood mortality and morbidity, as well as preventing and controlling infectious diseases of major public health importance. In part, this result will also elucidate the health implications of increased stress placed upon

natural resources at the local, regional, and global scales, including water in its fundamental role in supporting good health.

EHP will contribute to these two IRs through 18 subtasks, organized under 6 tasks (*see Statement of Work from TO1 and corresponding work plan sections below*).

Task 1: Work Plan Development (WORKPLAN.Y5)

1.1. Introduction

Task 1 in Task Order 1 provides for development of annual work plans. This section describes the process and schedule to be followed to complete the Work Plan for Project Year (PY) 5 of EHP (from July 1, 2003, through June 30, 2004).

1.2. Overview

EHP's contract with USAID, Section F, "Deliveries or Performance," calls for the submission of yearly work plans or annual milestone plans. The PY5 Work Plan will be our fifth submission to USAID. This section describes the development and steps that will be followed for the Work Plan for PY5.

EHP will follow the same series of steps in producing each year's work plan. These steps include the following:

1. Review progress to date and gather information.
2. Develop an outline and reach preliminary agreement on content with USAID.
3. Prepare a draft for review by USAID.
4. Make necessary revisions and produce final copies.
5. Submit the annual work plan to USAID.

1.3. Expected Results

EHP is expected to produce work plans for each of the five years of the project. To date, EHP has produced three annual work plans.

1.4. Progress to Date

EHP prepared the *Work Plan for Year One (FY 2000) and Five-Year Overview* in the fall of 1999 and submitted it to USAID on January 10, 2000. EHP also submitted the *Work Plan for Year Two* in October 2000, submitted the *Work Plan for Year 3: Task Order 1* in July 2001, and will submit the work plan for PY4 in July 2002.

1.5. Plans for Year 4

1.5.1. Principal Activities

The following steps and schedule are proposed for development of the Work Plan for PY5:

1. Preplanning and information gathering (April 1, 2003–May 1, 2003)

The initial planning process for the PY5 Work Plan will begin with a review of progress to date, all available existing information, and requests for EHP services that have been received since the end of June 2002. This process will also include discussions with USAID staff regarding the Community-Based Environmental Sanitation and Hygiene (CESH) and Environmental Change and Health Outcomes (ECHO) field and core-funded activities.

2. Developing an outline and reaching agreement on content (May 1–15, 2003)

Based on the information gathered and budget guidance from its Cognizant Technical Officer (CTO), EHP will prepare an outline for the Work Plan, which will be reviewed and discussed with USAID and the EHP subcontractors.

3. Preparing a draft Work Plan (May 16–June 10, 2003)

The EHP staff will prepare drafts of various sections of the plan, review them internally, and make revisions.

4. Submitting the draft for USAID review and revising it as necessary (June 11–25, 2003)

EHP will submit a draft to USAID. Upon receiving USAID's comments, EHP staff will make any necessary revisions.

5. Finalizing the Work Plan and submitting it to USAID (June 29, 2003)

Once the revisions are made, EHP will complete the final Work Plan, submit it to USAID, and distribute it.

Budget: \$120,000

Task 2: Lessons Learned and Policy

2.1. Introduction

Task 2, Lessons Learned and Policy, includes a range of activities. Taken as a whole, these activities describe work that EHP will undertake under Task Order 1 at the project and global levels to influence policy, develop partnerships, provide quality management for all of EHP, and capture and disseminate lessons learned.

Section 2.2, “Performance Monitoring,” includes several key elements of the EHP quality management system, including quarterly reports and monitoring and evaluation plans. Specific policy activities are described under Section 2.3, “Improved Targets, Indicators, Monitoring, and Evaluation for Water Supply, Sanitation, and Hygiene,” and Section 2.4, “Policy Meetings and Reports.” Section 2.5, “Building Partnerships,” describes the collaborative activities that we have been doing and plan to do this coming year with a wide variety of partners, including USAID cooperating agencies, the United Nations and other international agencies, and various international and national nongovernmental organizations (NGOs) and private voluntary organizations (PVOs). Finally, Section 2.6, “Lessons Learned and Progress Update,” describes how EHP will capture lessons learned and keep USAID updated on its progress and activities.

2.2. Performance Monitoring (LLP.ME.Y4.PERF)

2.2.1. Overview

Performance monitoring is essential for EHP’s ability to monitor progress and achievements of activities under its core tasks. It addresses management and dissemination needs internal to the project and of USAID. This activity ensures that monitoring and evaluation (M&E) plans are developed for EHP as a whole as well as for CESH, ECHO, and field programs; that systems and procedures are in place to track activities from planning through implementation to evaluation; and that a quality management process of reviews and progress monitoring is implemented.

2.2.2. Expected Results

The Performance Monitoring activity contributes to the EHP’s life-of-project result: “EHP will have implemented a monitoring and evaluation plan for CESH and ECHO including M&E plans for field programs for country programs.”

This activity covers the development and implementation of the EHP-wide M&E plan and tracking systems as well as the level of effort necessary to ensure overall planning and monitoring of task (ECHO, CESH and other)– and activity-specific M&E plans. The development and implementation of task (ECHO, CESH and other)– and activity-specific M&E plans is programmed and budgeted under each task and activity.

Most performance indicators and M&E activities will focus on EHP processes and products. However, when appropriate, they will include indicators of effectiveness and impact of environmental health interventions, using methods described under the Improved Targets, Indicators, Monitoring, and Evaluation for Water Supply, Sanitation, and Hygiene activity. The M&E plan is accompanied by a quality management process, which ensures that activities and products meet technical standards.

2.2.3. Progress to Date

- EHP performance indicators have been monitored quarterly through quarterly reports completed through December 31, 2002.
- The detailed activity plan (DAP), statement of work (SOW), and report review process was strengthened.
- Technical reviews and activity monitoring focused on CESH, ECHO Cross-Sectoral Surveillance (ECHO/XS), ECHO Integrated Vector Management (ECHO/IVM), ECHO Integrated Programs (ECHO/IP), indicators, Benin, Eritrea, Madagascar, Nepal, and the Democratic Republic of Congo.
- An EHP-wide M&E Plan with project-level and task-specific indicators was finalized and implemented.

The EHP-wide M&E Plan consists of several components, which ensure that all the CESH and ECHO tasks, activities, subactivities, as appropriate, and field programs are monitored:

1. EHP Achievement Matrix (cumulative, life of project)

The EHP Achievement Matrix constitutes the project's highest level of monitoring results. Achievements are reported for the four core tasks (CESH, ECHO/XS, ECHO/IVM, and ECHO/IP) and consist mostly of brief qualitative descriptions supplemented with quantitative data as appropriate. Achievements are grouped into the following three categories:

- *Coverage and Health Impact*
- *Innovation*
- *Partnerships and Leverage*

2. Result/activity performance indicators (cumulative, life of project)

3. EHP Product Plan (annual, life of project)

4. Work plan milestones (annual)

5. Funding identifiers (life of activity)

2.2.4. Plans for Year 4

2.2.4.1. Principal Activities

- Reporting of EHP-wide performance indicators quarterly
- Annual Performance and Milestone Report for 2002 July 2002
- Coordinate development of M&E plans for India (actual development and implementation programmed and budgeted under field programs) 2002/2003
- Technical review of critical EHP products (highest priority) continuous
- Day-to-day support of activities continuous

2.2.5. Milestones

- Annual Performance and Milestone Report (summary of achievements and performance indicators): Aug 2002.

Budget: \$90,000

2.2.6. Implications for Year 5

Efforts in Year 5 will focus on five actions:

1. Report EHP life-of-project achievements against M&E Plan indicators.
2. Conduct technical review of critical EHP products.
3. Track achievements and indicators quarterly.
4. Produce quarterly and annual reports (Information Center responsibility).
5. Provide day-to-day support of activities as agreed upon with activity managers (AMs) and coordinators.

2.3. Improved Targets, Indicators, Monitoring, and Evaluation for Water Supply, Sanitation, and Hygiene (LLP.ME.Y4.INDICATORS)

2.3.1. Overview

The purpose of the Improved Targets, Indicators, Monitoring and Evaluation for Water Supply, Sanitation, and Hygiene Activity is to improve the validity and reliability of existing

water, sanitation, and hygiene (hygiene improvement) indicators and data collection methods and the development of new indicators and methods where necessary. This activity is implemented at three levels:

1. Improving local monitoring to assist programmatic decision making
2. Increasing community participation in planning and monitoring
3. International consensus-building for key hygiene improvement indicators and data collection methods

Indicators and instruments have been developed and field-tested as precursors for final products. EHP has established a close collaboration with the several international organizations and PVOs to implement this activity. Key partners include the World Health Organization (WHO), the UN Children’s Fund (UNICEF), the UN Development Program (UNDP), Water and Environmental Health at London and Loughborough (WELL), Macro International Inc., the World Bank, NGOs, and PVOs.

2.3.2. Expected Results

At the end of EHP II, “EHP will have developed and tested indicators for water, sanitation, and hygiene that go beyond the currently used coverage/access indicators in collaboration with other organizations.” This supports directly EHP’s two main goals: (1) to focus on health results of environmental health interventions and (2) to mainstream prevention in child survival programs. Under this activity, EHP will achieve four results of improving hygiene improvement indicators and data collection instruments at various levels, together with international partners:

1. At the program level, the ability to monitor systematically the effectiveness of interventions and the existence of minimum standards for hygiene improvement will be improved.

This result addresses the different monitoring needs of the following:

- a. Water and sanitation programs
- b. Health and child survival programs

It focuses on the coordination of the development of methods for collecting data at national and local levels, because existing indicators and data collection instruments, such as the Demographic and Health Survey (DHS) and the Multiple Indicator Cluster Survey (MICS) (UNICEF), are mostly appropriate for international comparisons. This includes the development and testing of indicators and instruments to measure various aspects of hygiene improvement, for example, the Knowledge, Practices, and Coverage Survey 2000 (KPC 2000) (Child Survival Collaborations and Resources [CORE] Group) or Vision 21 targets (Water Supply and Sanitation Collaborative Council [WSSCC]). Indicators and instruments to measure hygiene improvement are programmed under CESH.

2. Communities will improve their abilities to identify problems, to participate in planning and implement solutions, and to monitor progress through an appropriate community monitoring tool.

This result covers the coordination of the development of methods. The actual development of a community monitoring tool is programmed under CESH.

3. At an international level, strengthened hygiene improvement indicators will be collected through large-scale surveys, such as DHS and MICS.

EHP will improve existing indicators that measure water supply and sanitation coverage or hygiene behaviors and that do not have acceptable levels of validity, sensitivity, and specificity. EHP will also develop indicators where useful indicators (e.g., water quality) are not measured routinely or new indicators to measure links between hygiene improvement and health outcomes, human development and poverty reduction where they do not exist.

4. The strengths and weaknesses of hygiene improvement and other indicators and data collection instruments will be documented based on experience from testing and implementing indicators and instruments by EHP and partner organizations, gaps and remaining needs for improvement will be identified, and a strategy for addressing these in future will be recommended.

2.3.3. Progress to Date

2.3.3.1. Result 1: Improve Program-Level Hygiene Improvement Monitoring (Water/Sanitation, Health/Child Survival)

- Developed and tested a fully annotated environmental health assessment with implementation guidelines (product) in the West Bank to serve as a model for the Hygiene Improvement Framework (HIF)–based assessment tool (see Task 3, Community-Based Environmental Sanitation and Hygiene).
- Coordinated and developed a catalog of WSH survey instruments (product) used by EHP to lead to an HIF-based assessment and planning tool (see Task 3 for the actual product).
- Proposed indicators for hygiene family behaviors for WHO household- and community-based integrated management of childhood illnesses (HH/C-IMCI) (product) and shared these for external review.
- Prepared technical brief on monitoring rural water supply projects for an evaluation planned by the World Bank.
- Collaborated with the CORE Group to revise hygiene improvement indicators of the KPC 2000 instrument.

- Produced a hygiene improvement module for a rapid health facility assessment for the CORE Group (product).
- *Secretariat for the WSSCC Monitoring Task Force*: Prepared planning documents and organized two meetings, in December 2001 and June 2002.
- Developed consensus indicators and a survey instrument (product) for monitoring core hygiene improvement interventions (Vision 21) for WSSCC in collaboration with the London School of Tropical Medicine and Hygiene (LSHTM) and the International Water and Sanitation Center (IRC).
- Planned testing of Vision 21 indicators and data collection instruments in several countries between July and December 2002 (at least one country EHP funded).

2.3.3.2. Result 2: Improve Community Monitoring

- Collected available community monitoring tools under EHP I and WASH and used by other organizations.

2.3.3.3. Result 3: Strengthen Hygiene Improvement Monitoring at an International Level

- Collaborated with Monitoring and Evaluation to Assess and Use Results (MEASURE) DHS (DHS+), CORE Group, and the WHO-UNICEF Joint Monitoring Program (JMP)
- Provided input into a hygiene improvement module developed by the Johns Hopkins University Center for Communication Programs (JHU/CCP) (2001 Nicaragua DHS).
- Developed a methodology for analyzing socioeconomic differences in health, nutrition, and population indicators (product) (see reports under Section 4B.1, “Madagascar: ECHO/IP,” and Section 7.2, “India: Improving the Health of the Urban Poor Living in Slums”).
- Managed the Sanitation Connection (SANICON) M&E topic (posted and updated documents).

2.3.3.4. Result 4: Document the Strengths and Weaknesses of Indicators, Instruments, and Systems

- Made a presentation on sentinel surveillance.

2.3.4. Plans for Year 4

2.3.4.1. Principal Activities

2.3.4.1.1. Result 1: Improve Program-Level Hygiene Improvement Monitoring (Water/Sanitation, Health/Child Survival)

- Coordinate the development and testing of HIF-based assessment tools for water and sanitation programs and health and child survival programs (see Task 3 for activities and products).
- Test indicators and survey instrument and review field test reports (product) for monitoring Vision 21 (WSSCC).
- Continue collaboration with the CORE Group to revise hygiene improvement indicators in KPC 2000 (product).
- Participate in various collaborations related to hygiene improvement indicators and monitoring where only a minor level of effort is anticipated:
 - Input to a child health evaluation handbook (MEASURE)
 - HH/C-IMCI hygiene practice (collaborate as appropriate)
 - Hygiene improvement module for rapid health facility assessment (CORE Group)
 - Literature review on hygiene improvement and intestinal parasites (WHO/Pan American Health Organization [PAHO])

2.3.4.1.2. Result 2: Improve Community Monitoring

- Share experiences in community monitoring with other organizations (see Task 3 for more activities).

2.3.4.1.3. Result 3: Strengthen Hygiene Improvement Monitoring at an International Level

- Collaborate with MEASURE DHS+ to revise hygiene improvement indicators in the DHS and explore possibilities to develop a hygiene improvement module (product).
- Participate in JMP meetings as appropriate (WHO, UNICEF).

2.3.4.1.4. Result 4: Document the Strengths and Weaknesses of Indicators, Instruments, and Systems

- Prepare and give presentations on M&E experience (product).

2.3.5. Milestones

Milestone 1: Host WSSCC M&E Task Force meeting by June 2003.

Milestone 2: Organize one technical meeting to review Vision 21 monitoring tests, January–February 2003 (before the Third World Water Forum in Kyoto, Japan).

Budget: \$110,000

2.3.6. Implications for Year 5

In the long-run, there should be evidence that an increasing number of organizations use improved hygiene improvement indicators and data collection instruments for planning, managing, and evaluating programs in the water and sanitation sector and the health sector. EHP will assist in revising guidelines and promoting the systematic use of hygiene improvement indicators and methods to evaluate the impact of water supply and sanitation (WS&S) programs in USAID-supported countries.

- *Result 1a:* Improved indicators and measurement instruments for hygiene improvement programs (one key product by EHP and partners).
- *Result 1b:* Improved hygiene improvement indicators and measurement instruments for health and child survival (CS) programs (one key product by EHP and partners).
- *Result 2:* Improved community monitoring method for hygiene improvement (one key product by EHP and partners).
- *Result 3:* Improved hygiene improvement indicators in DHS and KPC survey instruments (one key product by EHP and partners).
- *Result 4:* Documented and disseminated lessons learned from testing various indicators and data collection instruments (key product by EHP and partners).

2.4. Policy Meetings and Reports

2.4.1. Policy Meetings (LLP.MEET.Y4)

2.4.1.1. Overview

EHP is tasked with promoting environmental health as a component of other, broader tools used for policy formulation. Participation in international meetings is an effective approach for this purpose. International meetings are good forums for highlighting particular environmental health issues, raising awareness of CESH and ECHO activities, and disseminating EHP's lessons learned at the policy level.

2.4.1.2. Expected Results

Over the course of the five-year contract, EHP will actively participate in at least six major international environmental health meetings, conferences, or workshops and will play a major role, with partners, in organizing two of these meetings.

2.4.1.3. Progress to Date

To date, EHP has organized or has played a role in organizing the following meetings:

- The Global Consultation on the Health Impacts of Indoor Air Pollution in 2000.
- The December 2001 policy meeting on monitoring and evaluation of water, sanitation, and hygiene behaviors was held in Delft, the Netherlands. EHP played a role in organizing this meeting, which included the participation of approximately 15 professionals from WHO, UNICEF, WELL, LSHTM, IRC, and EHP. Consensus was reached on the establishment of a monitoring network to pursue agreed-upon objectives for advancing the state of the art in monitoring. The Monitoring Task Force under the Improved Targets, Indicators, Monitoring, and Evaluation for Water Supply, Sanitation, and Hygiene Activity (see Section 2.3) will pursue a list of next steps. (Total of two meetings organized by EHP—end-of-project [EOP] target met.)
- E-Forum on Hygiene Promotion. A monthlong e-conference on the HIF was led, and an accompanying report was completed.

EHP has participated in the following meetings:

- A respiratory diseases and environment conference in Lucknow, India.
- The WSSCC Iguaçu, Brazil, meeting in November 2000.
- The annual American Public Health Association (APHA) meeting in November 2001.
- The Global Health Council Annual Conference in May 2002 (total of four meetings, active participation with presentations on environmental health topics).

2.4.1.4. Plans for Project Year 4

In PY4, at least one meeting will be planned and implemented with partners. The topic for the Global Health Council Annual Conference in 2003 will be health and the environment. EHP will organize one plenary session for this conference and submit abstracts for panel, poster, and roundtable presentations.

EHP will provide support in preparation for and in follow-up to the World Summit on Sustainable Development, September 2002, in Johannesburg, South Africa.

EHP will actively participate in at least one international meeting on environmental health. Through collaboration with the WSSCC—specifically, in the Task Force on Monitoring

Vision 21 Targets—EHP may provide input to session at the Third World Water Forum in Kyoto, Japan, in March 2003. A close partner is LSHTM. EHP will need to explore opportunities for direct participation at the forum.

2.4.1.5. Milestones

- Support to the WSSD meeting, September 2002.
- Support to Kyoto meeting, March 2003.
- Abstracts submitted for Global Health Council Conference by December 2002; Active participation in Global Health Council Annual Meeting in June 2003.

Budget: \$75,000.

2.4.1.5. Implications for Year 5

EHP will continue to participate in international meetings and assist with the organization of meetings when opportunities present themselves. Meetings related to CESH and ECHO activities that advance the environmental health agenda are also pursued within those specific components.

2.4.2. Policy Reports (LLP.REPORTS.Y4)

2.4.2.1. Overview

Historically, environmental improvements have constituted the basis for the most marked improvements in public health in all nations. Basic environmental improvements have not been fully realized in many developing-country settings, and the need for them is acute in most places where USAID works. External assistance agencies and public health professionals have not focused on basic public health technologies, such as handwashing and simple means to prevent diarrhea. Under the Policy Reports Activity, EHP will work with partners to identify specific policy opportunities to advocate for the effective application of resources in environmental health by promoting debate and understanding of its role in public health.

These reports may discuss results of activities undertaken by the EHP in these areas, or they may discuss policy issues and the current state of knowledge. The purpose of these reports will be to influence current policy and create a demand for specific CESH and ECHO activities to advance knowledge in these topic areas. EHP, through the policy reports, will promote cutting-edge environmental solutions to the promotion of public health. We expect that these reports will be developed in partnership with multilateral institutions and other partners, as possible and appropriate.

2.4.2.2. Expected Results

By the end of the five-year project, under this task we expect that major policy issues of global importance in CESH and ECHO will be identified and that five reports will be produced that should influence their discussion. These reports should be broadly supportive of CESH and ECHO results and complementary to reports that may be developed as a part of CESH and ECHO activities.

For planning purposes (and based on the experience from the public-private partnership [PPP] documentation from the Central American Handwashing Initiative), it should be kept in mind that working in partnership collaboratively on a policy document requires a long time frame. In addition, a dissemination strategy should be developed and implemented with each report that would lead to a policy-influencing outcome.

2.4.2.3. Progress to Date

- In PY2, EHP began documentation of the Basic Support for Institutionalizing Child Survival (BASICS)–EHP experience in Central America with public-private partnerships to improve handwashing behaviors. This documentation activity was the basis for a collaborative effort that included EHP, BASICS, the World Bank, and UNICEF. EHP’s role was in overall activity management and production of the documents. The product of this effort was a 70-page detailed document, describing the experience and general approach, and a shorter advocacy document—both completed and published in PY3. During PY3 additional funds were added to the budget to produce the CD-ROM containing the print documents and handwashing communication and research materials. The documents are primarily available in English, and a smaller set of documents has been translated into Spanish and French. They will be disseminated to USAID missions and other international partners.
- Topics proposed for reports 2, 3, and 4:
 - *Report 2:* The role of water and sanitation in nutrition and food security programs (links to the core CESH result of promotion of the application of the HIF at the community level).
 - *Report 3:* Access to safe water and sanitation in high-risk households (particularly of people living with human immunodeficiency virus [HIV] and acquired immunodeficiency syndrome [AIDS]) (links to same core CESH result as above).
 - *Report 4:* Analysis of funding by the U.S. Government of water and sanitation programs in the foreign aid program. The USAID Bureau for Global Programs (USAID/Global) requested an analysis of funding, by source and year, of water and sanitation programs. This will be presented in a policy report to be initiated in Year 3 and completed in Year 4.

- EHP contacted experts in food security, nutrition, and HIV to explore interest in these topics based on two initial abstracts and to propose a brainstorming session in June 2002.
- Draft outlines of reports 2 and 4 were completed in Year 3.

2.4.2.4. Plans for Project Year 4

- EHP will publish policy reports 2, 3, and 4 and prepare and implement dissemination plans.
- EHP will also explore additional topics as they emerge and as they may become relevant programming opportunities for USAID’s support of environmental health issues. For example, ecosystem alterations (especially, changes in land use practices) have been linked to health outcomes. EHP’s work in integrated vector management and community-centered health, population, and environment integration could provide a basis for policy recommendations.

2.4.2.5. Milestones

- Three policy documents either published or in draft by December 2002.

Budget: \$75,000.

2.4.2.6. Implications for Project Year 5

EHP will build on the product of the first phase of USAID Asia and Near East Bureau (USAID/ANE)–supported urban health activity, where existing information will be compiled, reviewed, and synthesized to identify the specific policy issues to address and add core funds under this task to produce a policy report (proposed report 5).

2.5. Building Partnerships

2.5.1. Partnerships (LLP.PART.Y4)

2.5.1.1. Introduction

Under the Partnerships Subactivity, EHP will develop and implement a partnership strategy with the aim of developing specific collaborative activities with USAID cooperating agencies, UN and other international agencies, PVOs, NGOs, and the CORE Group (a consortium of U.S. PVOs). Once the organizations are identified, specific collaborative activities will be carried out under other tasks and subtasks as appropriate to their objectives. Additional collaboration of a general nature that does not readily fit under other tasks and subtasks may also be supported under this subactivity—in particular, an activity with the CORE Group that was funded through a buy-in from the former Child Survival Grants Program (CSGP) of the Office of Private and Voluntary Cooperation, formerly within the Bureau for Humanitarian Response (USAID/BHR/PVC). The program is now located in the

Bureau for Global Health, Office of Health, Infectious Diseases and Nutrition, and in this document will be referred to as CSGP.

2.5.1.2. Overview

Partnerships are central to the EHP strategy and to the successful completion of each individual activity. EHP may work with a partner for several reasons, often depending on the type of partner. EHP partners include USAID missions, international organizations, other USAID cooperating agencies, and USAID-funded PVOs and national NGOs.

EHP works with partners for purposes of leveraging funds, for improving and evaluating the ability of an activity to meet disease prevention objectives, to influence environmental and child health policy (internationally and nationally), to increase and support consistent approaches, and to create demand for EHP services.

The Partnerships Subactivity will establish and maintain communication with various partner organizations and identify specific opportunities for collaboration. It is aimed at the development of partnerships at the more institutional or general level; it also seeks to develop a consistent approach to building partnerships that may be monitored within the framework of a partnership strategy.

The partnership strategy, finalized in PY3, provides an operational framework for consistently approaching, sharing, and tracking contacts and partnership activities. The strategy establishes a process and coordinating mechanism for maintaining communication with various partner organizations and identifies specific opportunities for collaboration with EHP.

Specific objectives of this subactivity are as follows:

- Develop a partnership strategy for EHP that will provide a framework for consistently approaching, sharing, and tracking contacts and partnership activities.
- Maintain liaison with EHP partners: WHO, UNICEF, the World Bank, and, as appropriate, other UN and international agencies, U.S. PVOs, NGOs, the CORE Group, and USAID cooperating agencies and projects.
- Identify and target key organizations and institutions and potential activities and spheres of collaboration to pursue with targeted partners.
- Identify a system for establishing and tracking contacts and partnership linkages and for maintaining relationships with existing partners.

2.5.1.3. Expected Results

The end-of-project results of this activity will be as follows:

- Identification of specific areas of collaboration with EHP partners consistent with the main objectives and tasks of EHP.

- Development of a model and implementation of a partnership strategy that is documented, transparent, and consistent and that can be monitored.
- Identification of a system for tracking and coordinating contacts and partnership opportunities.
- Establish and implement an MOU with CSGP to work with a CORE working group—a collaborative activity that advances the CESH agenda in the community-based IMCI (C/IMCI) context.

2.5.1.4. Progress to Date

- A Partnership Coordinator was identified and hired, and a partnership strategy was developed through a consultative process within EHP.
- An MOU was developed with CSGP based on input from the CORE IMCI working group, and plans were initiated in PY3 to provide support in the development and implementation of a regional workshop in Latin America and the Caribbean (LAC) for USAID and PVO staff on C/IMCI.
- EHP annually provided input to PVOs during the review of child survival detailed implementation plans (DIPs). This is an opportunity to review control-of-diarrheal-disease activities in particular and to provide technical guidance on hygiene promotion (monitoring and design of activities) and to put greater emphasis on an integrated approach to diarrheal disease prevention.
- EHP had a joint consultation with three CORE working groups—IMCI, M&E, and malaria—on collaborative activities being carried out under CESH, ECHO, and Lessons Learned and Policy (LLP).
- EHP participated in the Inter-Agency Technical Working Group on IMCI (sponsored by WHO).
- EHP maintained ongoing liaison with UNICEF, WHO, the Water and Sanitation Program, and other organizations; continued participation in the Public-Private Partnership for Handwashing Steering Committee with UNICEF, LSHTM, and the World Bank; and organized facilitation and participated in one-day workshop in November 2001 for the development of objectives and the work plan of the steering committee.
- EHP regularly participated in the CORE Group annual meetings and consulted with individual working groups. These activities and contacts led to the following:
 - PVO input into the CESH operations research agenda
 - Inclusion of hygiene promotion and diarrhea prevention in the C/IMCI framework that the CORE Group is disseminating

- Continued involvement in the work plan preparation and implementation of the CORE working groups (M&E, malaria, IMCI)
- Significant involvement, including financial support from the CSGP, in the development of the agenda and implementation of CORE Fresh Air malaria workshop in November 2001 in Kenya (see Section 4A.4, “ECHO/IVM Core Program”)

2.5.1.5. Plans for Project Year 4

Partnerships will shift in Year 4 from initiation and development of activities with EHP’s partners to a more direct pursuit of specific collaborative activities under CESH and ECHO. This will involve prioritizing and targeting our efforts to address partnerships that follow themes and organizations that are within EHP’s strategic focus:

- Organizations:
 - PAHO
 - WHO Regional Office for Africa (WHO/AFRO)
 - UNICEF
 - CORE Group
- Themes:
 - Contributing to the environmental health (EH) agenda
 - Urban health and urban EH
 - Mainstreaming EH into the broader child health agenda and the infectious disease–malaria agenda

EHP will continue its efforts to maintain its “place at the table” in various forums. New areas, such as children’s environmental health, may be pursued, but with a focus on establishing relationships for the postproject environmental health agenda.

Specific activities are as follows:

- Maintain regular contact with the main partners, develop agendas for general meetings, and refer specific follow-up actions to the responsibility of other tasks or task orders, as appropriate. Attend meetings and conferences as required to develop and maintain key partnerships.
- Continue work with the CORE IMCI working group on the adaptation of a diarrheal disease prevention module for C/IMCI training. EHP will participate in the dissemination of this module at national and regional meetings organized by CORE.

- Coordinate partnerships initiated through Global Development Alliance Initiative for activities in Mali and Ghana. Partnership support will be needed to formulate work plans and establish and maintain relationships with various implementing partners. Technical assistance will be provided through CESH funds.
- Continue participation in detailed implementation plan reviews of child survival grants to PVOs, and provide input to technical reference materials for child survival applicants at all opportunities—pursue opportunities to provide input to the USAID-funded Child Survival Technical Support (CSTS) Project as it prepares technical guidance for PVOs.
- Assist CESH with liaison and coordination with key PVO partners for tools development.
- Review and assist the Information Center in the development of informational material to inform partners about EHP and key activities.

2.5.1.6. Milestones for Year 4

- Develop an agenda and implement a C/IMCI workshop for LAC with BASICS and the CORE IMCI working group (October 2002).
- Participate in a USAID request for a mission partnership activity for scaling up of C/IMCI, with a concrete EHP role established in at least one country (December 2002).
- Compile and document successful EHP partnerships in a short advocacy brief. (March 2003)

Budget: \$100,000.

2.6. Lessons Learned and Progress Update (LLP.PROG.Y4)

2.6.1. Introduction

The purpose of the Lessons Learned and Progress Update Subtask is to capture the lessons learned from EHP's experience and to keep USAID updated on the project's progress. This work will cover time spent in technical and management meetings held by EHP staff internally and externally with USAID, the cost of initiating and maintaining electronic systems for project information (e.g., eRooms), and the cost of reading and responding to non-activity-specific e-mails.

2.6.2. Overview

In the EHP Fiscal Year (FY) 2000 Work Plan under "Policies and Lessons Learned," Subtask 4, it is stated that EHP staff will, over the course of the five-year contract, participate in various technical meetings and prepare appropriate reports and other briefing documents as necessary to keep USAID project management informed of project progress. The EHP

staff will hold regular meetings to share information, discuss issues, and reach consensus, resolve problems, and make decisions about project activities and policies and procedures. In addition, EHP technical and management staff will regularly meet with the USAID Cognizant Technical Officer (CTO) and his technical advisers' staff to share information, discuss project activities, resolve problems, and plan upcoming events and meetings. EHP has also initiated eRoom software that enables electronic information sharing among staff, subcontractors, and the client (USAID). eRooms are created for a variety of project needs, from sharing information on project management and documents to communicating with USAID and receiving electronic approval for various actions and requests.

2.6.3. Progress to Date

During PY2 and PY3, EHP technical staff met regularly on Wednesday mornings with the CTO and his technical advisers and on Tuesday mornings as a technical staff. In addition, the senior management of the project met most Monday mornings to discuss project management issues. EHP has established various eRooms for sharing project management and activity information, with varying degrees of participation. Numerous non-activity-specific e-mail messages were read and shared, and they often required responses.

2.6.4. Plans for Year 4

The types of meetings (and their proposed frequency) covered under this activity during PY4 are as follows:

- EHP senior management team: The Project Director, the Project Manager, and the Senior Technical Director will meet weekly.
- The EHP Project Management Team and the USAID Office of Health staff will meet two or three times per month. (One meeting, the second Wednesday of the month, will be for the Project Director, the Project Manager, and USAID's CTO).
- The EHP Project Management Team will meet weekly (usually on Tuesdays).
- The entire EHP staff (the Project Management Team, the activity managers, the assistant activity managers, the Information Center, Finance and Accounting [F&A], and Contracts and Administration) will meet monthly. (*Note:* The cost for the F&A and Contracts and Administration staffs' time for these meetings is covered under the General Office Support Activity.)
- EHP staff members will also be requested to hold a variety of ad hoc (not related to CESH or ECHO) meetings with USAID staff.
- EHP technical staff will provide information to and receive information from the various e-mail messages and eRooms. The time that staff spend in this day-to-day business that is not directly attributable to the management of another activity will be covered under this activity.

2.6.5. Deliverables

Summary notes that capture the major discussion points and actions from most of the meetings will be produced and shared with the appropriate participants and placed in the eRoom.

Budget: \$400,000.

Level of effort: 360 person-days.

Table 1. Lessons Learned and Policy—Project Year 4, Task 2

Activity	Total Cost
2.1. Monitoring and Evaluation	
2.1.1. LLP.ME.Y4.PERF	\$90,000
2.1.2. LLP.ME.Y4.INDICATORS	\$110,000
2.2. Policy Meetings and Reports	
2.2.1. LLP.MEET.Y4	\$75,000
2.2.2. LLP.REPORTS.Y4	\$75,000
2.3. Partnerships	
2.3.1. LLP.PART.Y4	\$100,000
2.4. LLP.PROG.Y4	\$400,000
Lessons Learned and Policy TOTAL	\$850,000

Task 3: Community-Based Environmental Sanitation and Hygiene

3.1. Introduction

This section describes, the Community-Based Environmental Sanitation and Hygiene (CESH) component of EHP and characterizes the plan of action for its implementation. The section begins with an overview of the strategic focus of the component, particularly the Hygiene Improvement Framework (HIF) and its use as a conceptual model for program planning. Following the overview, the contractual results for the component are presented. Subsequently, the progress made to date in advancing toward achieving those results is listed. The plans for Project Year 4 follow, with a brief description of each proposed activity for which a charge code will be opened during the year. Finally, a brief presentation of the implications for Project Year 5 of the results and the Project Year 4 activities is given.

3.2. Overview

The CESH component of EHP focuses on hygiene improvement. Hygiene improvement, as addressed by EHP, is an integrated approach to preventing diarrheal diseases by expanding access to hardware, conducting hygiene promotion, and creating enabling environments. EHP has integrated these three components and the programming options that can be considered in each into the HIF as shown in Figure 1. This framework is currently serving as an organizing, conceptualizing, and programming model for all activities being undertaken as part of CESH.

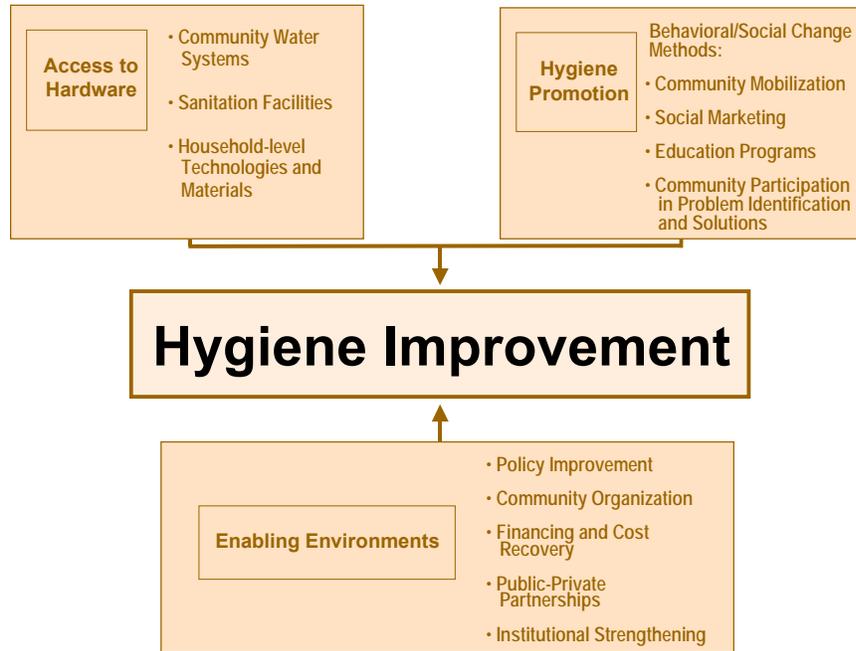


Figure 1. Hygiene Improvement Framework

The CESH component contains four subtasks, related to (1) operations research, (2) sanitation policy, (3) tool development, and (4) supporting field programs. The operations research subtask is intended to identify programmatic innovations that have the potential to reduce diarrheal disease in young children. The sanitation policy subtask aims to improve national-level support for policies that decrease diarrheal disease. Activities under the tool development subtask will contribute to answering the frequently expressed questions regarding how nongovernmental organization (NGO) and governmental program managers quantify impacts, analyze conditions, monitor improvements, change behaviors, and integrate hygiene improvement into the health sector in order to reduce diarrheal disease. The field programs then apply the tools to realize positive health impacts. Each component supports the others to achieve the contractual results presented in the following section, and they result in an integrated activity that will reduce the burden of diarrheal disease on young children.

3.3. Expected Results

In the Statement of Work for EHP, the CESH component was defined as containing four subtasks. The following are the four subtasks and the end-of-project results that were agreed to during the preparation of the EHP Project Year 4 Work Plan:

- *Subtask 1:* Develop and implement an operations research plan that addresses key questions related to environmental interventions for diarrheal disease prevention in community-based environmental sanitation and hygiene programs.
 - *EHP End-of-Project Result CESH 1:* At least two operations research questions related to diarrheal disease prevention in community-based environmental sanitation and hygiene programs field-tested and documented.

- *Subtask 2:* In conjunction with other major international organizations working in the sector (e.g., WHO [World Health Organization], PAHO [Pan American Health Organization], UNICEF [UN Children’s Fund], and WSSCC [Water Supply and Sanitation Collaborative Council]), develop tools to assist in the promotion of safe disposal of excreta as national policy and apply these tools in three USAID-assisted countries in which there is a population-health-nutrition (PHN)–sector program. Such tools could include, but are not limited to, presentations, guidelines, policy workshops, or some combination of these in an overall process that leads to sanitation policy improvements.
 - *EHP End-of-Project Result CESH 2:* One or more of the tools developed under this subtask to promote disposal of excreta as national policy applied in three USAID-assisted countries in which there is a PHN-sector program as part of a cooperative process with the goal of policy change.

- *Subtask 3:* Build upon existing community-based approaches to diarrheal disease reduction in order to develop tools which help NGO and government program managers and communities (1) identify local priority environmental health conditions related to diarrheal disease prevention, (2) select interventions which are consistent with the Hygiene Improvement Framework and address the priority conditions, (3) implement, monitor, and improve those interventions, and (4) evaluate the selected interventions’ impacts on behaviors related to diarrheal disease in children under the age of 5. (“Tools” are expected to include but not be limited to guidelines, survey methodologies, training courses, etc.)
 - *End-of-Project Result:* Tools developed, applied, and documented which help NGO and government program managers and communities (1) identify local priority environmental conditions and behaviors related to diarrheal disease prevention, (2) design interventions which are consistent with the Hygiene Improvement Framework and address the priority conditions, (3) implement, monitor, and improve these interventions by using data for decision-making, and (4) evaluate the selected

interventions' impacts on behaviors related to diarrheal diseases in children under the age of 5.

- *Subtask 4:* Activities which apply the tools developed under Subtask #3 and which are designed to improve community-level environmental sanitation and hygiene behaviors will be implemented in at least three USAID-assisted countries in which there is a PHN sector program. It is anticipated that these field activities will include both urban and rural settings. The intent of these activities is not to generate or implement pilot efforts, but rather to support initiatives led by others to enable them to achieve impact at municipal, regional or national levels and be sustained over time. In the design of field activities, emphasis will be placed on leveraging other resources to support, for example, scale-up or infrastructure investment. These resources are expected to be leveraged from partnership with, for example, USAID missions, "other" EHP task orders, NGOs, or other donor agencies.
 - *EHP End-of-Project Result CESH 4:* Activities which apply the tools developed under Subtask #3 and are designed consistent with the Hygiene Improvement Framework at the community level are supported at the municipal, regional or national level in at least three USAID-assisted countries in which there is a PHN sector program.

Work toward achieving each contractual end-of-project result, with the exception of the diarrheal disease part of Subtask 1, began during Project Year 1 and continued through Project Years 2 and 3. Activities began under the diarrheal disease part of Subtask 1 during Project Year 3, and activities under each of the subtasks will continue for the life of the project.

In addition to these contractual results, CESH has set out to accomplish one additional unwritten, but frequently mentioned result: contributing to mainstreaming environmental health in the USAID health sector. The program is accomplishing this in many ways. Among these are active participation in community-based integrated management of childhood illnesses (C/IMCI), partnership in the Democratic Republic of Congo with a broadly focused comprehensive primary health care project, participation in the development and launching of a far-reaching urban health program in slums in India, and active engagement with the membership of the Child Survival Collaborations and Resources (CORE) Group in the preparation and review of the members' detailed implementation plans (DIPs) for support under USAID child survival grants. Through these various mechanisms, EHP has begun to show that diarrheal disease reduction through integrated hygiene improvement is an important and practical element of child health programs.

3.4. Progress to Date

The principal accomplishments to date under CESH that directly impact the EHP Project Year 4 Work Plan are listed below. Detailed reporting on progress and accomplishments under each of these topics and all other CESH activities during Project Years 1, 2, and 3 are contained in EHP's quarterly reports.

3.4.1. Subtask 1: Operations Research on Diarrheal Disease

Project Year 1

- The portions of the description of Subtask 1 in the original EHP Statement of Work related to malaria and acute respiratory infection were moved administratively out of the CESH arena.

Project Year 2

- The decision was made to link the CESH operations research agenda explicitly to field activities under Subtask 4.
- Disposal of children's excreta was identified as one topic for operations research.

Project Year 3

- An e-conference was hosted on the first proposed operations research topic: "Safe Disposal of Excreta of Children Under the Age of 5."
- A literature review was initiated on the first proposed research topic.
- A drafted but unfunded proposal by the Peruvian research organization International Institute for Nutrition (IIN) for operations research on safe disposal of excreta from children under the age of five was identified and reviewed.
- A potential research partnership with the Johns Hopkins University (JHU) Bloomberg School of Public Health on effectiveness of interventions on diarrheal disease reduction was pursued.

3.4.2. Subtask 2: Promotion of Sanitation Policy

Project Year 1

- A scope of work was developed for Subtask 2, but no progress was made toward its implementation.

Project Year 2

- State-of-the-art knowledge on sanitation issues was acquired by establishing a network of global leaders and compiling relevant materials.
- EHP's engagement with international environmental health partners was strengthened.
- Consensus was reached with partners regarding the gaping void in national sanitation policies and the need for action.

- Discussions were initiated with international partners regarding joint development and application of tools.
- The first tool to be developed under the subtask was proposed as sanitation policy assessment guidelines to understand adequacy of national sanitation policy and obstacles to or factors supportive of implementation of those policies.

Project Year 3

- The final draft of the sanitation policy assessment guidelines was prepared, with significant partner input.
- Significant interest of partners in the subtask and EHP's ability to capture that interest was an unexpected development.
- The implementation team organized a working meeting with international partners to obtain their input to and concurrence with the draft guidelines and the next steps in their application.

3.4.3. Subtask 3: Development of Hygiene Improvement Tools

Project Year 1

- Financial and technical support was provided to a field activity in Benin that united community members, district-level government, local NGOs, and provincial-level governments to train stakeholders to recognize local risk factors for diarrheal disease, identify available means to reduce disease transmission, build environmental health infrastructure, and promote behavior change.

3.4.3.1. General CESH Advocacy and Promotion

Project Year 2

- Consensus was reached that the development and documentation of tools will be done in coordination with field activities.

Project Year 3

- *Sanitation and Family Education Project (SAFE) document: A reprint of Prevention of Diarrhea Through Hygiene Behaviors: The Sanitation and Family Education (SAFE) Pilot Project Experience* was prepared for publication as a joint product of EHP, CARE/Bangladesh, and the International Center for Diarrhoeal Disease Research, Bangladesh (ICDDR,B).
- The HIF and presentation were created and disseminated.

- An article describing the HIF was published in the Global Health Council periodical *Global HealthLink*.
- An advocacy document promoting the HIF was drafted.
- A monthlong e-conference on the HIF was led, and an accompanying report was completed.

3.4.3.2. Quantitative Assessment Tool

Project Year 2

- Use of a draft baseline assessment tool was piloted in the Democratic Republic of Congo.
- Use of four draft indicators of health impact was initiated in the Democratic Republic of Congo.
- Use of a draft impact assessment tool was piloted in the Democratic Republic of Congo.

Project Year 3

- The EHP quantitative assessment tool for hygiene improvement activities was drafted.
- The EHP quantitative assessment tool and guidelines were field-tested as part of the EHP Gaza–West Bank water and health program.

3.4.3.3. Community-Based Monitoring Tool

Project Year 3

- A review of the state of the art of community-based monitoring tools in the health sector was drafted.

3.4.3.4. Programming Guide for Behavior Change for Diarrheal Disease Reduction

Project Year 2

- A hygiene behavior change training course was developed in the Dominican Republic and documented.

Project Year 3

- A full set of program design materials and products for behavior change communication, including a training course, on diarrhea prevention developed in the Dominican Republic were translated from Spanish to English and compiled into a usable document.
- A partnership was established with PAHO on developing a C/IMCI module on diarrheal disease prevention.

3.4.3.4. Situation Analysis Tool

Project Year 2

- A situation analysis tool was piloted in Benin.
- A diarrheal disease training course presented in Benin was documented.

Project Year 3

- No significant progress was made on this tool during Project Year 3.

3.4.4. Subtask 4: Support to Hygiene Improvement Field Activities

Project Year 1

- Field activities relevant to CESH were initiated in Nicaragua, the Dominican Republic, Peru, and the Democratic Republic of Congo and were continued in Benin.

Project Year 2

Field activities relevant to CESH were supported with EHP core funds in Benin, the Democratic Republic of Congo, and the Dominican Republic. Other EHP field activities that were relevant to CESH but supported by mission funds were carried out in India and Nicaragua.

- Benin
 - Latrine use increased for children under the age of five.
 - Stakeholders were trained in transmission and prevention of diarrheal disease.
 - Structures linking communities and government to address priority environmental health issues were institutionalized.
- Democratic Republic of Congo
 - Core funds were dedicated to initiate EHP engagement in urban activities.
 - Three urban hygiene improvement activities were supported through technical assistance.
- Dominican Republic
 - Core funds were dedicated to provide technical assistance to achieve and document hygiene behavior change.

- India
 - A strategy for improving urban child health was developed with local partners and USAID/India.
- Nicaragua
 - Water supply and sanitation coverage were each increased.
 - Changes in hygiene behaviors to reduce diarrheal diseases were achieved.
 - Capacity of implementing NGOs was strengthened.
- Key target countries were identified for likely continued input: Peru, India, and the Democratic Republic of Congo.
- Secondary target countries were identified for likely continued input: Nicaragua, the Dominican Republic, and Benin.

Project Year 3

Field activities relevant to CESH were supported with EHP core funds in Benin, the Democratic Republic of Congo, the Dominican Republic, Nicaragua, and Peru. Other EHP field activities that were relevant to CESH but supported by mission or other USAID funds were carried out in India.

- Benin
 - After a consultancy, core funds were applied toward the drafting of a lessons-learned document for the EHP activity.
- Democratic Republic of Congo
 - Final reports for each of the three urban environmental health projects supported by USAID/Democratic Republic of Congo and the USAID Regional Urban Development Office (RUDO) in South Africa were submitted to EHP.
 - A long-term partnership with the Rural Health Program III (SANRU III), a comprehensive national primary health care initiative, was established and supported, using core project funds.
- Nicaragua
 - Supported by core funds, a partnership with PAHO was finalized for work related to C/IMCI in Nicaragua and Peru.
 - Core-funded support was provided to a hygiene behavior specialist who continued working with partner NGOs after completion of the emergency relief project.

- Peru
 - Supported by core funds, a partnership with PAHO was finalized for work related to C/IMCI in Nicaragua and Peru.
- India
 - An urban health strategy paper was completed to guide EHP activities in the country.
 - An urban health action plan was completed for implementation of EHP activities in the country.
 - An integrated diarrheal disease platform, which addresses both prevention and treatment, was incorporated into the urban health program action plan, with the support of local partners.
- Potential was identified for CESH involvement in Ghana or Mali or both countries as part of the USAID Global Development Alliance (GDA).

3.5. Plans for Year 4

EHP proposes the activities described below for Project Year 4. The activities presented should be viewed as the critical path for CESH to follow to achieve the end-of-project results presented above. The following sections present each subtask discussed above, followed by the key activities that will be undertaken in Project Year 4, a brief discussion of the substance of each activity, a milestone for that activity, and the proposed budget for the activity.

3.5.1. Subtask 1: Operations Research on Diarrheal Disease

- *Activity:* Design and initiate operations research in support of field programs (CESH.OPR.TOPIC01).
 - This activity is anticipated to build on the state-of-the-art literature review initiated during Project Year 3. Current thinking related to operations research in the field during Year 4, is to support the Peru-based IIN in evaluating the efficacy and health impact of increased potty use by children under the age of five and proper potty management by their caretakers. During Year 4, analysis of the proposal is expected to be completed and, if deemed appropriate, field study would be substantively advanced. In addition, EHP will pursue multiple avenues to identify alternative topics research and the advantages and disadvantages of each. At the time of submission of this work plan, two alternative operations research topics are under consideration. Each relates to documenting the health impact of an important water supply and hygiene activity that currently has a significant presence in the sector, but neither of which has demonstrated its positive impact on health in a community-based field setting. The first of these activities is the household water chlorination Safe Water System developed and promoted by the Centers for Disease Control and Prevention (CDC). The second is the public-private partnership for handwashing promotion that

is led by the World Bank. Documentation of the impacts of either of these would significantly advance the sector in establishing the efficacy or lack thereof of each of these potentially beneficial interventions.

- *Milestone:* Dedication of core funds to support a field-based operations research project in partnership with local specialists.
- *Budget:* \$90,000.

3.5.2. Subtask 2: Promotion of Sanitation Policy

- *Activity:* Apply draft assessment guidelines in at least two countries, and finalize, publish, and publicize the guidelines (CESH.POLICY.GUIDES).
 - This activity is a continuation of the successful actions taken during Project Year 3 by the team of consultants leading the implementation of Subtask 2. In Project Year 4, the team will field-test the guidelines drafted during the previous year in at least two countries that are relevant to CESH. At the time of this writing, the countries have not been selected, but a participatory process has been carried out over the year to identify candidate countries and potential partners for field-testing in each. After field-testing, the assessment guidelines will be finalized and published and publicized globally.
 - *Milestone:* Assessment guidelines published by EHP.
 - *Budget:* \$100,000.

3.5.3. Subtask 3: Development of Hygiene Improvement Tools

- *Activity:* Complete and apply a working draft of the CESH quantitative assessment tool with partners (CESH.TOOLS.01).
 - The CESH quantitative assessment tool was significantly developed during Project Year 3. The intent of this tool is to enable field practitioners to quantify baseline and postintervention conditions, with a particular focus on the four impact indicators for measuring water-and-sanitation-related program performance detailed in the *Water and Sanitation Indicators Measurement Guide* (USAID Food and Nutrition Technical Assistance Project, 1999).
 - *Milestone:* Quantitative assessment tool refined based on findings from field application.
 - *Budget:* \$20,000.
- *Activity:* Complete and test a working draft of the CESH community-based monitoring tool with partners (CESH.TOOLS.02).

- Development of the CESH community-based monitoring tool was initiated during the latter part of Project Year 3, when a comprehensive review of the literature was initiated. The objective of this effort is to develop a community-focused tool for monitoring ongoing hygiene improvement activities building on the strengths of existing materials and field experiences. Current candidate countries for testing include the Democratic Republic of Congo, as well as Nicaragua and Peru as part of the C/IMCI partnership with PAHO.
- *Milestone:* Community-based monitoring tool developed and field opportunities identified for its application and testing.
- *Budget:* \$75,000.
- *Activity:* Complete and test a working draft of the CESH programming guide for behavior change for diarrheal disease reduction (CESH.TOOLS.03).
 - The objective of this activity is to prepare a comprehensive guide for behavior-centered communications for diarrheal disease prevention, with accompanying materials. This guide will be a tool for systematically incorporating a diarrheal disease prevention communications component in programs that address environmental health issues. The guide will cover elements of design, development, testing, and evaluation, and it will be generic enough to be adapted for use in different areas of the world.
 - *Milestone:* Working draft of the programming guide completed.
 - *Budget:* \$80,000.
- *Activity:* Complete a draft of the CESH situation analysis tool (CESH.TOOLS.04).
 - The situation analysis tool is intended to help project agencies and communities achieve more equitable and sustainable services by qualitatively understanding community conditions before program development. Its application will involve all major stakeholders and will analyze the community situation to assess the possible direction and sustainability of hygiene improvement activities. Development of the tool should build on and make extensive use of other tools, including, at a minimum, EHP's Community Involvement in Managing Environmental Pollution (CIMEP) Program, WHO's Participatory Hygiene and Sanitation Transformation (PHAST) Program, and the Water and Sanitation Program's Methodology for Participatory Assessments (MPA)
 - *Milestone:* Draft of situation analysis tool complete.
 - *Budget:* \$20,000.

3.5.4. Subtask 4: Support to Hygiene Improvement Field Activities

- *Activity:* Provide CESH oversight, advocacy, and partnering (CESH.TEAM.Y4).
 - The stakeholders and activity managers involved in CESH will continue to regularly meet during Project Year 4 to provide programmatic guidance and technical insight into each CESH activity.
 - *Milestone:* Minutes of meetings produced and widely distributed.
 - *Budget:* \$30,000.
- *Activity:* Provide unprogrammed commitment to the Global Development Alliance (GDA) (CESH.GDA).
 - USAID’s GDA aims to promote synergistic impact by bringing together philanthropic, private-sector, and NGO partners with USAID to support mutual goals. During Project Year 3, intensive negotiations were held among multiple partners around supporting hygiene improvement in some combination of Ghana, Mali, and Niger. During Project Year 4, this partnership should materialize and EHP should participate through the provision of core funds and expertise to support diarrheal disease reduction activities on the ground in one or more of these countries.
 - *Milestone:* Dedication of core CESH funds to facilitate hygiene improvement in one or more targeted countries as part of a GDA partnership.
 - *Budget:* \$200,000.
- *Activity:* Provide technical support to USAID/Democratic Republic of Congo and SANRU III (CESH.SANRU.Y4).
 - Based on the findings of a consultancy in July 2002, CESH will develop a two-year action plan to provide technical assistance to SANRU for the development of a hygiene improvement component and its integration into a C/IMCI or similar child health program.
 - *Milestone:* Finalization and support of a two-year action plan to provide technical assistance to SANRU.
 - *Budget:* \$200,000.
- *Activity:* Work in partnership with PAHO and USAID missions in Peru and Nicaragua (CESH.CIMCI.PAHO).
 - During Project Year 4, EHP will continue to lead the effort to develop and field-test diarrheal disease prevention modules in partnership with PAHO and USAID for use in C/IMCI programs in Latin America.

- *Milestone:* Substantive progress made in the field, working with NGOs to develop draft diarrheal disease prevention modules.
- *Budget:* \$100,000.
- *Activity:* Provide core support to a focused effort in Nepal to assist the ongoing long-term work of sectoral partners (CESH.NEPAL.Y4).
 - EHP will explore potential contributions to Nepal’s rural water supply and sanitation sector in partnership with Asian Development Bank–funded national strategy development or other potential areas of activities identified by CESH technical backup within USAID/Washington during a scoping trip of June 2002.
 - *Milestone:* Opportunity identified and supported that is consistent with CESH results and the actions of partners in Nepal.
 - *Budget:* \$40,000.
- *Activity:* Continue support to NicaSalud and local NGOs in hygiene improvement (CESH.NICARAGUA.Y4).
 - CESH technical backup identified a number of viable ways in which EHP could continue supporting NicaSalud—an umbrella group of NGOs that has been an ongoing partner in past EHP activities in the country. All or some of the proposed ideas will be supported during Project Year 4. Options identified include the following:
 - Coordination of the plan for follow-up of ongoing hygiene improvement projects based on common objectives and indicators.
 - Building a strong health education and community mobilization component within ongoing projects, including collaboration with JHU and the Blue Bus Program.
 - Strengthening the capacity of participating NGOs in areas of special need and interest (e.g., monitoring and evaluation, methodologies for behavior change).
 - Promoting the integration of hygiene promotion within partner programs of NicaSalud (e.g. C/IMCI).
 - *Milestone:* Focused program of support to NicaSalud developed and supported.
 - *Budget:* \$70,000.

- *Activity:* Support to scale-up of previous successes in Hato Mayor, Dominican Republic (CESH.DR.Y4).
 - The objective of this activity is to strengthen the Dominican Republic’s capacity to design, implement, and evaluate an innovative behavior change component (trials of improved practice) for hygiene improvement programs. It will also help to demonstrate the impact of this type of behavior change intervention and ensure the sustainability of such activities within the ongoing work of national organizations .
 - *Milestone:* Focused program of support to local partners in the Dominican Republic developed and supported.
 - *Budget:* \$70,000.
- *Activity:* Publish documents on urban environmental health activities supported in the Democratic Republic of Congo and on Dominican Republic behavior change activities (CESH.DOCUMENTS.Y4).
 - Valuable information and significant results emerged from two sets of activities that EHP supported with core resources or technical assistance or both. In Project Year 4, these successful projects will be documented and published as EHP Activity Reports or under another title as deemed appropriate by the Information Center (IC) staff.
 - *Milestone:* Publication and dissemination of EHP reports on urban environmental health activities supported in the Democratic Republic of Congo and on Dominican Republic behavior change activities.
 - *Budget:* \$25,000.

3.6. Implications for Year 5

The Year 4 Work Plan is focused on leading to the successful achievement of the project results at the end of Project Year 5. Consequently, it is appropriate to propose briefly the current thinking in CESH regarding the activities expected to be key in the last project year. These are presented briefly below, without detailed explanation.

3.6.1. Subtask 1: Operations Research on Diarrheal Disease

- Finalize and document operations research findings on selected topic(s).

3.6.2. Subtask 2: Promotion of Sanitation Policy

- Promote and support application of the policy assessment guidelines in targeted countries where policy improvement is a viable option.

- If viable opportunities are identified, work to facilitate improved sanitation policies in targeted countries with international and local partners, and document the experience and its achievements.

3.6.3. Subtask 3: Development of Hygiene Improvement Tools

- Complete, document, and disseminate identified tools.
- Promote mainstreaming of environmental health by completing, documenting, and disseminating EHP's involvement in C/IMCI with partners.

3.6.4. Subtask 4: Support to Hygiene Improvement Field Activities

- Achieve and document health improvement through changes in behaviors proximate to diarrheal disease in multiple locations around the world.

3.7. Honduras: Development of Supervisory System for Environmental Health Technicians

3.7.1. Overview

USAID has been working with the Honduran Ministry of Health (MOH) since 1993 in the development of an integrated environmental health program. To date, the MOH has trained 270 environmental health technicians (TSAs) and is in the process of training 50 supervisory staff. More TSAs are to be trained during 2002. Given the widespread support for the TSA role in health and given that 270 individuals have been trained, the time is right for developing the TSA supervisory framework within the MOH and designing the tasks that TSAs must carry out. USAID/Honduras has requested EHP to provide an adviser in environmental health for three two-week periods to assist the MOH in developing a working model for TSA supervision, task definition, evaluation, and reporting.

3.7.2. Expected Results

- Supervisory model developed.
- Practical task guide for TSAs developed.
- Performance appraisal system for TSAs developed.
- Programmatic indicators for EH developed for MOH.

3.7.3. Progress to Date

EHP consultant Dennis Kalson carried out the first visit from April 29 to May 10, 2002, to assess the current status of the TSA program. He interviewed a wide range of people at the

national and regional levels and attended training workshops for new TSAs. The consultant made a series of recommendations and suggested specific next steps.

3.7.4. Plans for Year 4

A second trip is planned for August 2002 to review progress on the recommendations, and a third trip to complete the activity is planned for December 2002.

The total budget for this activity is \$105,000 of which \$55,000 has been programmed.

3.8. Sanitation in Small Towns in Latin America and the Caribbean

3.8.1. Overview

With funding from USAID/LAC, EHP is developing practical guidance for improving sanitation in small towns in LAC. This activity builds on previous EHP work in LAC on decentralization that focused on small towns and rural communities. For the most part, the focus by USAID and others in small towns has been on water supply, with sanitation largely neglected. The purpose of this activity is to develop a methodology that results in the development of plan for sustainable sanitation services.

3.8.2. Expected Results

- Increased awareness of the problem of sanitation in small towns in LAC.
- Development of a practical tool for addressing the problem of small-town sanitation.
- Dissemination of the tool to donors, national agencies, and NGOs in USAID-assisted countries in LAC.
- Improved capacity in specific countries to use the EHP methodology.

3.8.3. Progress to Date

- A draft document that provides an overview of the problem has been completed and reviewed by EHP partners.
- A draft methodology document has been developed and reviewed externally.
- Field tests have been completed in Ecuador, Panama, and Jamaica (field test funded by the Water Team).
- Planning has been initiated with PAHO and the Water and Sanitation Program (WSP) on two dissemination workshops: one in Peru in September 2002 and the other in Honduras in November 2002.

- An article on the methodology has been written for the July 2002 edition of Waterlines.

3.8.4. Plans for Year 4

- Workshop organized in Peru in September 2002 for approximately 50 participants from five countries, primarily in the Andean region.
- Workshop organized in Honduras in November 2002 for approximately 50 participants from five Central American countries and the Dominican Republic.
- Targeted technical assistance to countries after the dissemination workshops.
- Field test of sanitation policy guidelines developed under a separate EHP activity.

EHP expects to receive \$275,000 in FY02 funding.

Table 2. CESH Budget Projections—Project Year 4

Year 4 Line Item	SO3 Funds	Non-PHN Funds
Subtask 1		
CESH.OPR.TOPIC01 Design and initiate operations research in support of field programs	90,000	
Subtask 2		
CESH.POLICY.GUIDES Apply, finalize, publish, and publicize sanitation policy assessment guidelines	100,000	
Subtask 3		
CESH.TOOLS.01 Complete and apply a working draft of the CESH quantitative assessment tool with partners	20,000	
CESH.TOOLS.02 Complete and test a working draft of the CESH community-based monitoring tool with partners	75,000	
CESH.TOOLS.03 Complete and test a working draft of the CESH programming guide for behavior change for diarrheal disease reduction	80,000	
CESH.TOOLS.04 Complete a draft of the CESH situation analysis tool	20,000	
Subtask 4		
CESH.TEAM.Y4 CESH oversight, advocacy, and partnering	30,000	
CESH.GDA Unprogrammed commitment to the GDA	200,000	
CESH.SANRU.Y4 Apply and refine tools in support of field program in Democratic Republic of Congo	200,000	
CESH.CIMCI.PAHO Partnership with PAHO and USAID missions in Peru and Nicaragua	100,000	
CESH.NEPAL.Y4 Core support to a focused effort in Nepal to support the ongoing long-term work of sectoral partners	40,000	
CESH.NICARAGUA.Y4 Continued support to NicaSalud and local NGOs in hygiene improvement	70,000	
CESH.DR.Y4 Support to scale-up of previous successes in Hato Major	70,000	
CESH.DOCUMENTS.Y4 Publish documents on urban environmental health activities supported in the Democratic Republic of Congo and on Dominican Republic behavior change activities	25,000	
CESH.HONDURAS Develop a supervisory system for environmental health technicians		105,000
CESH.LACSAN Guidance development for improving sanitation in small towns		275,000
Year 4 total funding commitment	\$1,120,000	\$380,000

Task 4A. Environmental Change and Health Outcomes: Cross-Sectoral Surveillance and Integrated Vector Management

4A.1. Introduction

EHP provides technical assistance for surveillance, prevention, and control of vector-borne diseases (VBDs) under the programs for Cross-Sectoral Surveillance (ECHO/XS) and Integrated Vector Management (ECHO/IVM). These programs include nine distinct activities: the ECHO/XS and ECHO/IVM core-funded activities; mission-funded activities in Eritrea and Nepal; co-funded activities in Mozambique and Uganda; and regional activities in South Asia, West Africa, and Latin America funded by the USAID Asia and Near East Bureau (USAID/ANE), the USAID West Africa Regional Program office, and the USAID Bureau for Latin America and the Caribbean (USAID/LAC), respectively.

EHP implements these nine activities in a coordinated strategy, using core funds to develop tools and document lessons learned, while using mission and bureau funds to deliver technical assistance specifically tailored to the needs of particular countries and regional initiatives. The activities in Uganda and the LAC region are new and appear in EHP's Work Plan for the first time this year. Field work in the Mozambique activity has been completed, and final reports are in preparation. Although the mission intends to continue supporting the malaria control program and is discussing priorities for future work with the ministry, it has not yet requested specific assistance from EHP; therefore, the activity is not discussed further in the Year 4 Work Plan.

Section 4A.2 provides an overview of EHP's work on vector-borne diseases. Sections 4A.3 through 4A.9 present details for each of the activities, describing expected results, progress to date, plans for Year 4, and implications for Year 5. Section 4A.10 presents the summary budget for ECHO/XS and ECHO/IVM programs.

4A.2. Overview

4A.2.1. Core-Funded Activities

The core-funded program in cross-sectoral surveillance (ECHO/XS) includes three subtasks:

- *Subtask 1:* Develop and test methods for cross-sectoral surveillance: the collection and integrated analysis of environmental, demographic, epidemiological, and other information, including the use of appropriate mapping techniques.
- *Subtask 2:* Working with other major international organizations active in the health sector, develop tools to promote the use of cross-sectoral surveillance methods by national ministries of health (MOHs).

- *Subtask 3:* Promote the establishment of cross-sectoral surveillance methods as part of official MOH surveillance plans or procedures in three USAID-assisted countries with population, health, and nutrition (PHN)–sector programs.

Malaria is the main focus for EHP’s core-funded work on surveillance, but the activity may also address other infectious diseases of major public health importance. EHP is pursuing this activity in collaboration with other international organizations active in malaria prevention and control. The box below entitled “Summary of the ECHO/XS Program” includes relevant work in the country and regional activities.

The core-funded activity in integrated vector management (ECHO/IVM) also has three subtasks:

- *Subtask 4:* Determine the effectiveness of selected interventions for controlling vector populations and reducing human-vector contact, and identify the settings in which each intervention is likely to be effective.
- *Subtask 5:* Working with other major international organizations active in malaria prevention and control, develop integrated vector management approaches appropriate for malaria in urban and rural settings in Africa.
- *Subtask 6:* Working with other major international organizations active in malaria prevention and control, promote the use of integrated vector management approaches as part of official national malaria control plans and procedures.

The ECHO/IVM Activity is focused on malaria in Africa. However, activities may also address other infectious diseases of major public health importance in other geographic regions. For example, EHP is using core funds in Nepal to support modest research on vector control methods for sand flies, which are the vectors for kala-azar (visceral leishmaniasis). As is the case for ECHO/XS, EHP is pursuing work on integrated vector management (IVM) in collaboration with other international organizations (see Section 4A.2.4, “Partnerships”). The box below entitled “Summary of the ECHO/IVM Program” lists highlights of the ECHO/IVM program.

The Office of Health, Infectious Diseases and Nutrition in the USAID Bureau for Global Health (USAID/BGH/HIDN) funds the ECHO/XS and ECHO/IVM core activities from the Infectious Diseases (Strategic Objective 5 [SO5]) account.

4A.2.2. Mission and Bureau Activities

In Year 4, EHP will implement seven country and regional activities under the ECHO/XS and ECHO/IVM programs. Four of the activities are continuing; one (Mozambique) is closing out; and the other two, in Uganda and the LAC region, started at the end of Year 3 and appear for the first time in the Year 4 Work Plan.

- *Eritrea:* EHP provides technical assistance to the National Malaria Control Program in Eritrea, to strengthen its capacity for operational research and support improvements in

its surveillance and vector control systems. The USAID mission in Asmara funds the activity. It began in July 2000 and is scheduled to continue through June 2003.

- *Nepal*: EHP is one of several organizations providing technical assistance for USAID/Nepal's Program for the Prevention and Control of Selected Infectious Diseases. This activity includes work on operational research, surveillance, and interventions for malaria, Japanese encephalitis, and kala-azar (visceral leishmaniasis). It began in 1998, and it is scheduled to continue through June 2004.
- *Mozambique*: EHP has provided technical support to the MOH in Mozambique since 1998 for improving malaria surveillance, determining the distribution of malaria risk in Maputo, and developing a capacity for using geographic information systems (GIS) for disease surveillance. This work was supported with funds from USAID/BGH/HIDN, the USAID Africa Bureau's Office of Sustainable Development (USAID/AFR/SD), and the USAID mission in Maputo. EHP finished work on this activity in April 2002, and final reports are in preparation. USAID is discussing priorities for further work with the MOH and may request additional assistance from EHP in Year 4.
- *Uganda*: EHP will help the national malaria control program and local health authorities in Kampala and Jinja to prepare IVM strategies for controlling *Anopheles gambiae* in selected areas of the cities, and EHP will help them monitor implementation of the strategies to determine whether the vector control programs reduce local malaria transmission. The activity will begin in July 2002 and will have two phases: (1) data collection, analysis, and planning during EHP Year 4 and (2) implementation of local action plans in EHP Year 5. EHP is initiating the activity with core funds from USAID/BGH/HIDN, which has also requested matching funds for the first year from the Office of Environment and Urban Programs, Office of Environment, USAID Bureau for Economic Growth, Agriculture, and Trade (USAID/EGAT/ENV/UP).
- *South Asia*: EHP is supporting collaboration among institutions in Nepal, India, Bangladesh, and Bhutan for improving the surveillance and control of vector-borne diseases, with a special focus on building a regional surveillance network for monitoring resistance to antimalarial drugs. The work is part of an initiative funded by USAID/ANE. The activity began in June 2000 and will continue through at least June 2003. It is implemented by EHP's office in Kathmandu, in conjunction with EHP's activities in Nepal.
- *West Africa*: EHP is supporting the Consultative Group on International Agricultural Research (CGIAR) System-Wide Initiative on Malaria and Agriculture (SIMA) in West Africa, using funds under the managerial jurisdiction of USAID's West Africa Regional Program office in Abidjan. EHP has received and is reviewing proposals for a set of research grants that will be awarded early in Year 4. The individual research projects will examine either agricultural practices that have potential for reducing malaria transmission or other malaria control interventions (e.g., access to effective treatment, insecticide-treated bednets) targeting farming communities.

- *LAC dengue*: In response to a request from PHN officers and in recognition of the increasing threat of dengue fever in Latin America, the USAID/LAC has requested that EHP prepare a summary of best practices for the control and prevention of dengue fever. The report will review the epidemiology and transmission cycle of the disease and describe best practices for its prevention, diagnosis, treatment, and control. This work will most likely be presented at the next PHN officers meeting, tentatively scheduled for March 2003.

4A.2.3. Key Products under Development

EHP is developing six key products under the ECHO/XS and ECHO/IVM programs. Each product will represent tools developed and experience gained through a combination of field- and core-funded activities.

- *Cross-Sectoral Surveillance: Improving Information for Malaria Control Decisions*: This report will provide a general introduction to the objectives, methods, and results of the EHP initiative on cross-sectoral surveillance. (Year 4.)
- *Malaria Risk Stratification: Methods and Applications*: This report will summarize EHP's experience developing risk stratifications for malaria and other vector-borne diseases in Eritrea, Mozambique, and Nepal and will propose best practices (methods) for the preparation and use of such analyses. (Year 4.)
- *Forecasting Malaria Epidemics: Methods and Applications*: This report will summarize EHP's work to develop models for forecasting malaria epidemics and help control program officials to use such information. The report will focus on work performed in Eritrea, but it may also include lessons learned from work in other countries if EHP has such opportunities. (Year 5.)
- *Guidelines for Integrated Vector Management Programs in Africa*: EHP and the Malaria Consortium are developing this document for the WHO/AFRO, which will use it as general guidance to African MOHs on developing integrated vector biology and control programs. The guidelines are also part of the foundation for a course on IVM to be offered starting in the fall of 2002 at the International Centre for Insect Physiology and Ecology, Nairobi, Kenya. (Year 4.)
- *Field Methods for Evaluating Malaria Vector Control Interventions in Africa*: This report will describe methods that entomological field technicians should use routinely to determine whether vector control interventions (IRS, bednets, and larva controls) employed by the malaria control program are working as intended. The report is intended for use by control program field staff, and it will also provide the basis for a new course on the same topic, to be developed as part of the curriculum for the African Network for Vector Resistance and also, possibly, for the IVM training being developed by WHO/AFRO. (Year 4.)
- *Using Mosquito Larva Control to Reduce Malaria Transmission in Africa*: This report will summarize EHP's work to investigate the potential role of larva control methods for

reducing malaria transmission in selected settings in Africa. It will include data from field investigations in several countries and key recommendations developed at several international meetings. (Year 5.)

4A.2.4. Partnerships

Developing strong partnerships and working in collaboration with other institutions are core ways of doing business for EHP. EHP has established the following partnerships for advancing work under the ECHO/XS and ECHO/IVM programs:

- *WHO/AFRO*: Prepare guidelines for IVM; support formation and development of the African Network for Vector Resistance; and develop and deliver training courses on IVM and field methods for evaluating vector control interventions.
- *CGIAR SIMA*: Develop and demonstrate changes in agricultural practices that reduce malaria transmission associated with irrigation and small-scale farming, or develop other interventions that reduce transmission in agricultural communities.
- *World Bank*: Support design of the HAMSET Project in Eritrea and coordinate support to the National Malaria Control Program (NMCP); HAMSET provides financial and technical support for programs to address malaria, HIV/AIDS, tuberculosis, and sexually transmitted diseases. Also, collaborate in developing summaries of the evidence for including vector control as an element of malaria control programs in Africa and guidance for World Bank project managers on appropriate selection and use of insecticides in malaria programs.
- *International Centre for Insect Physiology and Ecology*: Provide the resident adviser and training for the Eritrea malaria program; develop guidelines and training for IVM.
- *University of Durham*: Develop evidence regarding the effectiveness of larva control methods for reducing malaria transmission in selected settings in Africa. This work will also involve collaboration with other research institutions, including the Danish Bilharziasis Laboratory (DBL), the Swiss Tropical Institute (STI), and the Development Research Institute (IRD).
- *Malaria Consortium* – prepare Guidelines for IVM, develop IVM strategies for urban areas, evaluate the effectiveness of vector control interventions, and advocate for the appropriate use of vector control interventions in other disease control programs (e.g. filariasis, dengue fever).
- *International Research Institute for Climate Prediction*: Develop models for forecasting risks of malaria epidemics and stratifying risks of malaria in Eritrea and Mozambique.
- *Valent Biosciences and BASF Corporation*: Material, technical, and financial support for field trials of larva control methods and international collaboration on research priorities and protocols.

- *Roll Back Malaria (RBM) Secretariat at WHO/Geneva:* Prepare and test a protocol for vector control needs assessments. The protocol will be used in six African countries to develop plans for reducing the use of DDT for malaria vector control, as part of a regional project being developed by WHO/AFRO for funding from the UN Environment Program.

EHP is considering several other partnerships and is in discussions with the following organizations:

- Working through the WHO Southern Africa Malaria Control Program, EHP may support internships for newly graduated medical entomologists with national malaria control programs in one or two countries.
- During Year 3, EHP provided technical and financial support to the CORE Group for its Fresh Air meeting on best practices in malaria control (Nairobi, Kenya, November 2001); discussions are under way regarding future collaboration.
- In collaboration with the USAID Regional Economic Development Services Office for East and Southern Africa (USAID/REDSO/ESA) in Nairobi, EHP may support the Regional Center for Quality Health Care at Makerere University (Kampala, Uganda) in including a unit on vector control in its training program for district medical officers.
- EHP is discussing with Clarke Mosquito Control, Inc., the possibility of developing a model program for dengue fever control in Nicaragua, in collaboration with USAID/Nicaragua and NICASALUD, a consortium of Nicaraguan NGOs active in the health sector.

Summary of the ECHO/XS Program

Definition of XS

The collection and integrated analysis of environmental, epidemiological, demographic, and other information, including the use of appropriate mapping techniques, for characterizing the spatial and temporal patterns of disease risk

Subtasks and End-of-Project Results

- *Subtask 1:* Develop and test XS methods.
- *Subtask 2:* Develop tools to promote XS methods.
- *Subtask 3:* Promote XS methods in three countries.

Key Products under Development

- XS: improving information for malaria control decisions (Year 4)
- Malaria risk stratification: methods and applications (Year 4)
- Forecasting malaria epidemics: methods and applications (Year 5)

Core Activities

- Organize Technical Working Group on Malaria Surveillance
- Develop methods for malaria risk stratification and epidemic forecasting
- Document data collection methods used in field programs
- Develop tools to support use of XS analyses by district-level control program staff

Eritrea

- Train national and zonal staff in field methods for entomological surveillance
- Support national surveys of vector distribution, vector behavior, and parasite prevalence
- Develop national- and zonal-level analyses of malaria risk stratification
- Support creation of sentinel sites for malaria surveillance and control
- Prepare epidemic forecasting models and help build an epidemic early warning system
- Strengthen capacity for planning, conducting, and applying results of operations research

Mozambique

- Analyze malaria risk stratification at the local level in Maputo
- Strengthen MOH capacity for using GIS to map disease distribution

Nepal

- Develop risk stratification analyses for malaria, Japanese encephalitis, and kala-azar
- Strengthen the Early Warning and Response System (EWARS) for the three diseases
- Initiate collaboration with neighboring countries on VBD surveillance and response

Infectious Disease in Asia and the Near East

- Support development of regional surveillance network for antimalarial drug resistance
- Support regional collaboration on surveillance for malaria, kala-azar, and Japanese encephalitis

Summary of the ECHO/IVM Program

Definition of IVM

A program for managing the selection, use, and evaluation of multiple vector control methods in integrated strategies for the prevention and control of one or more vector-borne diseases of humans

Subtasks and End-of-Project Results

- *Subtask 4:* Determine the effectiveness of selected vector control interventions and identify the settings in which each is likely to be effective
- *Subtask 5:* Develop IVM approaches appropriate for malaria in urban and rural settings in Africa
- *Subtask 6:* Promote the use of IVM approaches as part of national malaria control programs

Key Products under Development

- Guidelines for IVM programs in Africa (Year 4)
- Field methods for evaluating malaria vector control interventions in Africa (Year 4)
- Using mosquito larva control to reduce malaria transmission in Africa (Year 5)

Core Activities

- Support WHO/AFRO in developing guidelines and training for IVM
- Organize collaboration with researchers, national programs, and private partners for testing the effectiveness of larva control methods in selected settings in Africa
- Support formation and meetings of the African Network for Vector Resistance
- Provide small grants to study changes in agricultural practices that may reduce malaria transmission, through the CGIAR SIMA

Eritrea

- Operations research to evaluate larva control methods and develop program procedures
- Strengthen vector control operations at sentinel sites
- Evaluate and refine the malaria vector control program

Mozambique

- Improve vector control operations (indoor spraying) in five cities

Uganda

- Investigate local malaria transmission, identify vector breeding sites, and develop, implement, and evaluate control options in two cities

Nepal

- Operations research on vector control methods for kala-azar (sand flies)

Infectious Disease in Asia and the Near East

- Assemble information on insecticide resistance in malaria vector species in India, Nepal, Bhutan, and Bangladesh

LAC Dengue

- Document best practices for dengue prevention and control

4A.3. ECHO/XS Core Activity

4A.3.1. Expected Results

Cross-sectoral surveillance (XS) is the collection and integrated analysis of environmental, epidemiological, demographic, and other information for characterizing the spatial and temporal patterns of disease risk. XS methods include the use of remote sensing and geographic information systems, as well as more traditional methods for field data collection and statistical analysis.

The objectives of the ECHO/XS program are to develop, promote, and establish the use of methods for XS. The results expected from this program are as follows:

- *Subtask 1:* Proven methods for data collection and analysis that, if employed, will improve a disease control program's understanding of the spatial and temporal patterns of disease risk
- *Subtask 2:* Tools (reports, publications, presentations, etc.) that are useful in promoting acceptance of XS concepts and methods
- *Subtask 3:* Established use of XS methods in three USAID-assisted countries

EHP pursues these objectives through the ECHO/XS Core Activity and, when appropriate, mission- and bureau-funded field activities. The specific purpose of the core-funded activity is to provide coordination and technical direction to the ECHO/XS program, develop generic tools for use in field programs, and consolidate methods, results, and lessons generated in the field programs.

4A.3.2. Progress to Date

Progress on the ECHO/XS program has been slower than anticipated for two reasons. First, we made a strategic decision to focus on developing the ECHO/IVM program in Years 1 and 2, because the principal use of XS data and analytical products is to strengthen vector control programs. Second, despite concerted effort, we were unable to hire a Senior Technical Adviser (STA) for Malaria Programs during EHP Year 3. We had planned for the STA to lead the ECHO/IVM program and for the ECHO Program Coordinator to focus more of his attention on the ECHO/XS program.

Nonetheless, we have realized the following key achievements on ECHO/XS:

- Data collection methods have been tested in Eritrea, Mozambique, and Nepal. These include methods for entomological studies, epidemiological surveys, and (in Nepal) qualitative studies on knowledge, attitudes, and practices.
- Data analysis methods have also been tested. In Eritrea and Mozambique, EHP has developed analyses of malaria risk stratification at the national level and the local level,

respectively. In Nepal, data were analyzed to create a baseline assessment of the distribution and risk factors for kala-azar, malaria, and Japanese encephalitis.

- EHP is responding to requests to support the development of sentinel surveillance systems in Eritrea (malaria), Nepal (three VBDs), and South Asia (kala-azar, Japanese encephalitis, and resistance to antimalarial drugs). EHP may also be asked to support development of a malaria surveillance system in Mozambique. Protocols for data collection, analysis, and reporting have been completed or are being prepared for each of the field programs.
- EHP has supported the formation of the African Network for Vector Resistance (ANVR), which is developing a cadre of MOH personnel capable of using WHO's insecticide susceptibility assays. The ANVR is gathering field monitoring data on vector resistance to insecticides. EHP is providing continuing support to WHO/AFRO for annual meetings of the network.
- We have refined the concept of XS (at least as applied to malaria programs) to include risk stratification, epidemic risk forecasting, and data collection and analysis for evaluating vector control interventions.
- We have established a basis for collaboration with the International Research Institute for Climate Prediction to refine methods for risk stratification and to prepare and apply methods for epidemic risk forecasting.

4A.3.3. Plans for Year 4

4A.3.3.1. Principal Activities

- *Technical Working Group on Cross-Sectoral Surveillance (E.X4.XSTWG):*

Organize a technical working group (TWG) to review the data collection and analysis methods and applications that EHP has completed to date in Eritrea, Mozambique, and Nepal and to recommend future directions and activities to further the objectives of the ECHO/XS program. The scope of the TWG's deliberations will include work in support of risk stratification and sentinel site surveillance systems, as well as plans for work on epidemic forecasting and routine operational uses of geographic information systems and monitoring for planning and evaluating vector control interventions. The TWG's deliberations and recommendations will be documented in a report to the file.

Budget: \$25,000.

- *Evidence-Based Decision Making in Vector Control Programs (E.X4.VCDATAUSE):*

Through field research using qualitative methods, develop information on the decision-making authorities and practices of national malaria control program staff at the central, zonal, and subzonal levels in Eritrea and at analogous levels of the NMCP in one other country in which EHP is working. The focus of the study is decisions regarding the

selection, timing, location, and extent of vector control interventions. Using results from the study, determine the following:

- What information would be most useful in improving the quality of such decisions
- What means are available for developing such information
- What mechanisms are available for providing timely information to staff at various levels and locations
- How differences in the NMCP organization, ecological and epidemiological setting, and other factors affect the study's conclusions regarding the best way of improving the evidence base for vector control decisions.

Results of the study will be documented in an EHP Activity Report.

Budget: \$75,000.

- *Field Methods for Evaluating Vector Control Interventions (E.X4.VCEVALMETH):*

Most malaria control programs do not routinely monitor the implementation or evaluate the effectiveness of the vector control interventions that they employ. Improving staff skills for data collection and analysis, introducing efficient evaluation methods, and improving practices for using evaluation data as a basis for selecting and applying interventions are among the highest priorities for improving vector control programs. Under this activity, EHP will develop a training course to introduce these skills and methods, for use by WHO/AFRO in coordination with its other training activities (the African Network on Vector Resistance and its anticipated training for managers of IVM programs). EHP will commit additional funds to support delivery of the training course in consultation with WHO/AFRO.

Budget: \$40,000.

- *Lessons Learned in Malaria Risk Stratification (E.X4.MALRISK):*

Reports of the malaria risk stratification analyses performed in Eritrea, Mozambique, and Nepal will be available for examination by the XS TWG (see above) and in revised, final form by December 2002. Under the ECHO/XS core program, EHP will prepare a summary technical report entitled "Malaria Risk Stratification: Methods and Applications." This report will describe the methods used, conclusions reached, and lessons learned in the three risk stratification analyses and will document the methods that EHP recommends for use in future stratification efforts.

Budget: \$25,000.

- *Lessons Learned in Sentinel Site Surveillance for Malaria and Other Vector-Borne Diseases (E.X4.SENTSURVEIL):*

EHP is supporting development or strengthening of sentinel site surveillance systems for malaria and other vector-borne diseases in Eritrea, Nepal, and South Asia, and EHP may be asked to support similar work in Mozambique. For each system, EHP is working with counterparts to develop surveillance and reporting protocols; in some cases, EHP is also helping to develop surveillance objectives and system design. By the end of Year 4, it should be timely to review and summarize EHP's experience across these activities and to prepare a summary technical report on lessons learned.

Budget: \$25,000.

- *Information Dissemination for the ECHO/XS Program (E.X4.INFODIS):*

Prepare EHP Briefs, presentations, and other products to disseminate technical reports and information developed under other ECHO/XS activities.

Budget: \$15,000.

- *Key Concepts for XS (E.X4.XSREPORT):*

Based on EHP's work to date on XS methods and applications, together with insights from the XS TWG meeting, EHP will prepare an activity report entitled "Cross-Sectoral Surveillance: Improving Information for Malaria Control Program Decisions." The report will articulate the objectives and rationale for XS and summarize experience to date in EHP's field programs. The report will be concise, intended for use in advocating the adoption of XS approaches and concepts by control programs for malaria and other vector-borne diseases.

Budget: \$20,000.

- *Manage XS Program (E.X4.MANAGE):*

This activity provides funds for the time spent by the ECHO Coordinator and the Assistant Activity Manager to prepare scopes of work and budgets, recruit consultants, track expenditures, and perform other general management duties with regard to ECHO/XS program activities. It also provides a modest amount of time for EHP senior managers and participating activity managers to attend technical briefings on ECHO/XS activities and monthly ECHO/XS/IVM team meetings.

Budget: \$50,000.

4A.3.3.2. Milestones for Year 4

- XS TWG Meeting and Report September 2002
- XS: Improving Information for Malaria Control Decision December 2002
- Malaria Risk Stratification: Methods and Applications March 2003

4A.3.3.3. Budget

The estimated budget for all ECHO/XS core activities in Year 4 is \$275,000. The budget is supported entirely from USAID/BGH/HIDN Infectious Disease (SO5) funds designated for surveillance activities, including \$275,000 carried over from prior years and \$100,000 provided from FY02 appropriations. The \$100,000 in FY02 funds will be used to support data collection and risk stratification activities in Uganda (see Section 4A.7). The carryover funds will be used in their entirety to implement ECHO/XS core activities; no balance is anticipated for carryover to Year 5.

4A.3.4. Implications for Year 5

The report “Forecasting Malaria Epidemics: Methods and Applications” will be prepared in Year 5 based on work performed as part of the Eritrea activity during EHP Year 4. It should also be possible and timely to prepare a summary report of improvements realized in the vector-borne disease surveillance programs in Nepal, Eritrea, Mozambique, and South Asia.

4A.4. ECHO/IVM Core Program

4A.4.1. Expected Results

IVM is a program for managing the selection, use, and evaluation of multiple vector control methods in integrated strategies for the prevention and control of one or more vector-borne diseases of humans. For malaria, an IVM program would make appropriate, coordinated use of control methods targeting adult mosquitoes (insecticide-treated nets and indoor residual spraying) and mosquito larvae (physical methods to reduce or eliminate breeding sites and chemical and biological methods for killing larvae). WHO/AFRO is leading an effort to support MOHs in establishing IVM programs that work on multiple diseases so that the expertise and resources to control the many vectors of significant human diseases in Africa (mosquitoes, flies, snails, etc.) can be consolidated in an integrated program.

Three results are expected from EHP’s ECHO/IVM program:

- *Subtask 4:* Determine the effectiveness of selected vector control interventions and identify the settings in which each is likely to be effective.
- *Subtask 5:* Develop IVM approaches appropriate for malaria in urban and rural settings in Africa.

- *Subtask 6:* Promote the use of IVM approaches as part of national malaria control programs.

EHP pursues these objectives through the ECHO/IVM Core Activity and, when appropriate, mission- and bureau-funded field activities. The purpose of the core activity is to provide coordination and technical direction for the ECHO/IVM program, develop generic tools for use in field programs, and consolidate methods, results, and lessons generated in the field programs.

4A.4.2. Progress to Date

EHP has focused substantial effort on the ECHO/IVM program and has made substantial progress. The following are the most important achievements to date, presented in approximate chronological order:

- Organized a Technical Working Group on Community-Based Malaria Vector Management and published one of the background documents, *Review of Control Methods for African Malaria Vectors*.
- Contributed to the draft RBM–WHO/AFRO vector control needs assessment protocol, which will be used in preparing a UN Environment Program (UNEP)/Global Environment Facility project to support reductions in the use of DDT and transition to DDT-alternatives in six African countries.
- Supported organizational meetings for the CGIAR SIMA for East and Southern Africa and for West and Central Africa. Issued a request for grant proposals for work under SIMA in West Africa.
- Initiated field trials of biological larvicides and larva control procedures in Eritrea.
- Characterized mosquito breeding sites in Maputo, Mozambique, in preparation for field trials of larva control methods.
- Prepared a first draft of “Guidelines for Integrated Vector Management Programs.” The guidelines are being developed for use by WHO/AFRO, in collaboration with the London School of Hygiene and Tropical Medicine.
- Organized an international symposium on Larval Control for African Malaria Vectors in association with the 23rd African Health Sciences Congress in Kampala, Uganda. The symposium was very successful and well attended, and it created a foundation for continuing collaboration to test larva control methods in various ecological settings in Africa.

- Identified an opportunity to test larva control methods in two cities in Uganda, to determine their impact on local malaria transmission in an urban setting.
- Initiated a study of options for controlling phlebotomine sand flies (kala-azar vectors) in Nepal.

4A.4.3. Plans for Year 4

4A.4.3.1. Principal Activities

- *Develop Evidence on the Effectiveness of Larva Control Methods for Reducing Malaria Transmission in Africa (E.V.4.LC.DURHAM):*

EHP is helping establish an international collaborative effort involving several research institutions to investigate the potential for using larva control methods for reducing malaria transmission in selected ecological settings in Africa. EHP sponsored a symposium on the topic in April 2002 and is planning follow-up activities along three tracks:

1. Identifying opportunities for obtaining data from countries that currently use larva control methods in their national malaria control programs
2. Identifying up to five locations at which pilot larva control programs can be implemented to gather initial evidence of the impact of larva control on adult mosquito populations and entomological inoculation rates (EIR)
3. Promoting continued debate and collaboration concerning the potential role of larva control methods through additional symposia, publications, and other mechanisms

EHP is establishing a partnership with the University of Durham to help pursue this initiative. Under this activity, EHP will issue a grant to the university to provide technical leadership and support to this initiative over a two-year period: EHP Years 4 and 5. The grant will support a substantial level of effort from Dr. Steven Lindsay, the full-time commitment of a postdoctoral fellow, travel costs to review data collected by malaria control programs currently using larva control methods, funds to support the design and implementation of pilot programs, and funds to support a symposium at which results from these efforts and comparable work by other institutions will be reviewed. The terms of the grant will also identify reports and other products expected from each element of this activity.

Budget: \$200,000.

- *Organize a Session on Larva Control at the Multilateral Initiative on Malaria (MIM) Third Pan-African Conference on Malaria (E.V.4.LC.MIM):*

EHP has submitted an abstract for a two-hour session at the MIM's Third Pan-African Conference on Malaria in November 2002, and we expect that the abstract will be

accepted. The session will be used to report on results and follow-up from the symposium on Larval Control for African Malaria Vectors in Kampala. EHP will work with Dr. Lindsay, University of Durham, and colleagues at the Swiss Tropical Institute, the Danish Bilharziasis Laboratory, and the Institut de recherche pour le Développement to organize the session and, if necessary, to sponsor one or two participants to present important papers as part of the session.

Budget: \$20,000.

- *Support the SIMA Initiative in West Africa (E.V.4.SIMAW):*

EHP is supporting the CGIAR's SIMA with direct financial assistance for meetings and coordinated programming to support field activities. In West Africa, EHP is using regional funds (originally provided by USAID's Regional Economic Development Support Office [REDSO] in Abidjan, Côte d'Ivoire, and currently under the management authority of the West Africa Regional Program office in Bamako, Mali) to support up to four field research projects on malaria interventions in agricultural communities. The request for applications was issued and applications were received late in Year 3. Grants will be awarded and issued early in Year 4, for work to be conducted in Years 4 and 5.

Budget: \$125,000.

- *Support the SIMA Initiative in East and Southern Africa (E.V.4.SIMAES):*

EHP supported the organizational meeting for SIMA in East and Southern Africa in March 2001. EHP will continue to support the initiative by offering grant support to organizations that conduct field research on changes in agricultural practices that reduce either the extent of malaria vector habitat or the size of larval mosquito populations that survive to maturity. Individual research projects will be organized in collaboration with the SIMA secretariat, national institutions, and an appropriate CGIAR center.

Budget: \$75,000.

- *Vector Control Methods for Kala-azar in Nepal (E.V.4.KAVECTOR):*

A study will identify larval breeding sites of the kala-azar vectors in Nepal, *Phlebotomus argentipes* and *Ph. papatasi*, in the peridomestic environment of selected areas in Dhanusha and Mahottari Districts. Sand fly exit trapping devices will be placed over potential breeding sites (rubbish heaps, garbage dumps, livestock dung, mud-dung plastering preparation locations, dung fuel crafting sites, and soil in domestic livestock sites). Sand flies that have emerged will be collected periodically from the traps, identified, and counted. Once the most important (common, productive) types of larval breeding sites have been identified, locally available materials (e.g., lime) will be tested for their potential use as topical treatments to reduce egg laying and larva production.

Budget: \$25,000.

- *Revise and Complete Guidelines for Integrated Vector Management (E.V.4.IVMGUIDE):*

WHO/AFRO has requested that the first draft of the guidelines for IVM be substantially revised to include a part 1, focusing on program management issues. Part 2 will contain guidelines on the appropriate use of vector control methods, organized by disease; a revised version of the first draft of the guidelines, which addressed this topic for malaria, will be the first chapter of part 2. EHP is working on these guidelines in close collaboration with London School of Hygiene and Tropical Medicine.

Budget: \$75,000.

- *Revise the Vector Control Needs Assessment Protocol (E.V.4.VCNATEST):*

WHO/AFRO has recently received approval of its proposal for a project development grant from UNEP to develop a UNEP project under which it will provide technical assistance to help six African countries reduce their reliance on DDT in malaria control programs. The draft vector control needs assessment protocol, which EHP helped develop during Year 2, is intended as the principal instrument for gathering information that will help WHO/AFRO and countries participating in the project identify each country's most urgent needs for technical and material assistance to reduce reliance on DDT spraying. Under its technical assistance activity in Eritrea, EHP will work with WHO/AFRO and counterparts in Eritrea to apply the draft protocol in Eritrea and use results to recommend improvements in Eritrea's malaria vector control program. Under this activity, EHP will use lessons learned in the test application to recommend revisions to the draft vector control needs assessment (VCNA) protocol and prepare a revised version that could be used in the other five countries.

Budget: \$10,000.

- *Support ANVR (E.V.4.ANVRMTG):*

EHP will continue providing financial support for the development of ANVR, which is being organized and promoted by the Vector Biology and Control Unit, WHO/AFRO. In Year 4, this support will be used to defray some costs of the ANVR's annual meeting, tentatively scheduled for December 2002.

Budget: \$15,000.

- *Identify Infrastructure Projects with VBD Impacts in Africa (E.V.4.INFRASEARCH):*

In this activity, EHP will search World Bank records to identify major infrastructure projects in Africa (roads, dams, irrigation, water supply, etc.) that may increase the risk or distribution of vector borne diseases. EHP will share its findings with USAID missions in countries where such projects are planned, to provide information on the future potential for increased public health burden associated with such projects.

Budget: \$10,000.

- *Malaria Control Program Internships in Southern Africa (E.V.4.SAMC):*

WHO's Southern Africa Malaria Control (SAMC) Program has requested assistance from EHP in sponsoring internships with its member malaria control programs for recently graduated medical entomologists as a way of supporting growth in the cadre of trained and experienced experts working in direct support of vector control programs. EHP plans to support two positions, each for approximately two years. The level of funding committed should be sufficient to cover approximately half of the anticipated cost; EHP and USAID/BGH/HIDN are exploring potential sources of matching funds to cover the other half. Although details remain to be worked out, EHP will propose that interns be recruited, selected, and supervised by the SAMC director, Dr. Shiva Murugasampillay, in coordination with officials of the MOHs into which they will be placed. The agreement between EHP and SAMC will likely specify, among other things, the following:

- That the funds be used to cover the salaries, housing, relocation, and transport expenses of the interns
- That to apply for an intern, an MOH must prepare a work plan describing the work it will assign to the intern and the products expected from such work
- That the work plan must commit at least 50% of the intern's time to supporting a pilot program for evaluating larval control methods in appropriate settings, to evaluating the effectiveness of other malaria vector control interventions currently in use, or to developing an IVM program that employs two or more vector control methods in a coordinated strategy
- That the balance of the intern's time be committed to another clearly defined activity that is a high priority for the MOH, which may support the control program for a vector-borne disease other than malaria.

Budget: \$50,000.

- *Information Dissemination for the ECHO/IVM Program (E.V.4.INFODIS):*

Prepare EHP Briefs, presentations, and other products to disseminate technical reports and information developed under other IVM activities.

Budget: \$15,000.

- *Manage the IVM Program (E.V.4.MANAGE):*

This activity provides funds for the time spent by the ECHO Coordinator and the Assistant Activity Manager to prepare scopes of work and budgets, recruit consultants, track expenditures, and perform other general management duties with regard to IVM program activities. It also provides a modest amount of time for EHP senior managers and participating activity managers to attend technical briefings on IVM activities and monthly XS/IVM team meetings.

Budget: \$50,000.

4A.4.3.2. Milestones

- Draft guidelines for IVM September 2002
- Session on larva control at the Third Pan-African Conference on Malaria November 2002
- Field test of the vector control needs assessment protocol February 2003

4A.4.3.3. Budget

The estimated budget for ECHO/IVM core activities in Year 4 is \$545,000. The budget is supported entirely with funds from USAID/BGH/HIDN Infectious Disease (SO5), including \$100,000 carried over from Year 3 and \$500,000 provided from FY02 commitments. Thus, there is an anticipated balance of \$55,000. Of this balance, \$28,000 will be used as part of the SO5 contribution to the project’s management and support costs (Lessons Learned and Policy [LLP] [Task 2] and Information Center [IC] [Task 6]), and \$27,000 will be carried over to Year 5.

4A.4.4. Implications for Year 5

It should be possible to revise and finalize the draft Guidelines for IVM in Year 5, based on results from field tests and training initiated in Year 4. EHP will prepare the report *Using Mosquito Larval Control to Reduce Malaria Transmission in Africa*, describing results from work to demonstrate the effectiveness of larva control methods in Africa. Also, EHP will sponsor a meeting of ANVR to discuss results from field evaluations of vector control interventions, using methods that EHP will develop in Year 4.

4A.5. Technical Assistance to the Eritrea National Malaria Control Program

4A.5.1. Expected Results

EHP is providing technical assistance to the Eritrean MOH to support implementation of the National Malaria Control Program (NMCP). EHP is helping the MOH strengthen its

surveillance systems, operational research program, evidence-based decision making, and vector control operations. This activity began in July 2000 and is scheduled to continue through June 2003. EHP, USAID, and the Eritrean MOH have the following objectives over the three-year life of this activity:

- *Operational research*: Strengthen the NMCP's capacity to design, conduct, and analyze operational research studies to better understand the epidemiology of malaria, the distribution and behavior of malaria vectors, emerging patterns of resistance to antimalarial drugs, and the effectiveness of interventions used to prevent and control malaria.
- *Vector control*: Strengthen the NMCP's national vector control program by improving the effectiveness and efficiency of current control methods, demonstrating the feasibility and effectiveness of new control methods, and strengthening training, monitoring, and evaluation functions.
- *Surveillance and evidence-based decision making*: Develop a surveillance and epidemic early warning system for malaria in Eritrea, and work with central and zonal malaria coordinators to increase their use of critical data for making decisions regarding the type and timing of interventions used in the NMCP.

4A.5.2. Progress to Date

The first year of this activity was devoted to conducting a national survey of parasite prevalence and completing a set of studies of vector distribution, behavior, and bionomics that had been started during the previous year (i.e., Project Year 1). The second year focused on analyzing data from the surveys, starting a set of larva control programs in four pilot villages, preparing protocols for improving surveillance and control activities at "sentinel" sites, and supporting the preparation and launch of a training program for public health technicians (PHTs). The following are key accomplishments over the past two years, implemented by the NMCP with technical assistance from EHP:

- The NMCP performed three essential operational research studies to provide an information base for strengthening program operations:
 - A national survey to identify malaria vector species and determine their distribution and abundance
 - A longitudinal study of key behaviors of adult vectors (biting and resting) and larval ecology
 - A national survey of malaria parasite prevalence

EHP has also used these data to prepare an analysis of the stratification of malaria risk.

- The NMCP has completed field trials to verify the efficacy of the bacterial larvicides *Bacillus thuringiensis* subsp. *israelensis* (Bti) and *Bacillus sphaericus* (Bs) in Eritrea and

determine the rate, frequency, and mode of application that will be most effective under routine operational conditions. The NMCP has also launched pilot larva control programs in four villages.

- The MOH has prepared materials, recruited students, and started a training program for PHTs. The first class of PHTs should graduate and be ready for posting to field assignments in September 2003. EHP has given technical support for course design and materials development.
- EHP provided technical assistance for analyzing data from clinical trials conducted by the NMCP to monitor the clinical efficacy of chloroquine for treating uncomplicated malaria.

Progress in launching the sentinel site development program has been slowed because of delays in building entomological laboratories, improving clinical laboratory facilities at the initial sites, and hiring additional staff. The launch of this initiative was originally planned for Project Year 3; we now expect that it will move forward in Year 4.

4A.5.3. Plans for Year 4

4A.5.3.1. Principal Activities

During the coming year, EHP and the NMCP will focus on strengthening malaria surveillance, case management, and vector control operations at an initial group of six sentinel sites. At each site, there will be an intense, focused effort to improve surveillance functions (case recognition, diagnosis, confirmation, and reporting; identification and monitoring of vector breeding sites), program response (case referral and management, vector control operations), and the technical and supervisory skills of program staff. These sites will be developed as models, to serve as examples for staff at other locations throughout each zone and to create field training slots for the new PHTs, who will become available for field assignments in September 2003.

EHP and the NMCP will work together on the following initiatives in the coming year:

- Developing procedures and launching operations at the initial sentinel sites
- Completing a general model of malaria risk stratification in Eritrea
- Assembling data from the 1998 epidemic, and using this and other information to prepare an epidemic forecasting model for Eritrea
- Conducting a comprehensive review of the malaria vector control program to develop recommendations for improvements
- Completing and analyzing results from the first year of larva control programs in four pilot villages
- Continuing support for training new PHTs

- Supporting the NMCP in its midterm review of the Five-Year Plan for Rolling Back Malaria in Eritrea.

4A.5.3.2. Milestones

- Protocols and training for sentinel site staff August 2002
- Complete review of the malaria vector control program December 2003
- Report of results from larva control pilot programs January 2003
- Support to midterm review of the NMCP Five-Year Plan for Rolling Back Malaria June 2003

4A.5.3.3. Budget

USAID/Eritrea is expected to provide \$460,000 to fund activities in Year 4. EHP anticipates that this full amount will be expended, plus the \$40,000 that is anticipated in funds carried over from Year 3, leaving no balance at the anticipated conclusion of the activity in June 2003.

4A.5.4. Implications for Year 5

Plans for Project Year 5 are being discussed. The original agreement with USAID/Eritrea was for a three-year program that would end in June 2003. However, because of delays in construction and hiring, the development of sentinel sites has not advanced. If the mission funds an additional work in Project Year 5, it would likely focus on continued support for developing the sentinel system, refining and expanding the use of larva control methods, supporting implementation of other recommendations to improve the vector control program, and integrating the new PHTs into operations at a larger number of sentinel sites.

4A.6. Technical Support to the Nepal Program for the Prevention and Control of Selected Infectious Diseases (E.X.NE5)

4A.6.1. Expected Results

USAID/Nepal and Nepal's MOH initiated the Program for the Prevention and Control of Selected Infectious Diseases in 1998.² The program's first component focuses on surveillance and control of three VBDs: malaria, kala-azar, and Japanese encephalitis. EHP

² 1998 was the last year of the EHP I contract. Therefore, Year 4 of EHP II is the fifth year of the Nepal program, and activities described in this section correspond to work included in the Nepal program's year 5 work plan, which is still in draft form.

has the lead responsibility for implementing this component, in collaboration with the MOH and the Vector Borne Disease Research and Training Center (VBDRTC) in Hetauda, Nepal. EHP's resident adviser in Nepal, Dr. Pandu Wijeyaratne, provides technical direction for the VBD component.

The mission has also decided to extend the project for one additional year; it will now continue through the end of the EHP II contract period in June 2004.

The VBD strategy has five objectives:

1. Strengthen the institutional capacity of VBDRTC
2. Improve the national surveillance capability of the MOH in early detection and response to outbreaks of the three priority VBDs
3. Improve the availability to the MOH of information on the epidemiology of VBDs
4. Develop and pilot-test sustainable intervention strategies for the prevention and control of the three priority VBDs
5. Assist the MOH in establishing intercountry linkages for addressing cross-border prevention and control of priority VBDs

Taken together, these five areas of work address all of the critical needs—institutional development, obtaining key information through operational research, enhanced surveillance and early warning of epidemics, demonstrated control interventions, and cross-border collaboration—for improving the government's control program for the three target diseases.

4A.6.2. Progress to Date

- *Strengthen the institutional capacity of VBDRTC:*
 - A new Board of Directors has been formed and has been functional since April 2002. For the institutional development of VBDRTC, a modified mechanism to support human resource development has been formulated and implemented with mutual agreement and decision of USAID, the Board of Directors, and the International Science and Technology Institute, Inc. (ISTI).
 - The Board of Directors held regular meetings and approved salary levels and position descriptions for new staff. During Nepal program year 4 (August 2001 through July 2002), the government of Nepal provided funds to VBDRTC for management of the program activities, but not the salary components.
- *Improve the national surveillance capability of the MOH to detect and respond effectively to epidemics of the three priority VBDs:*
 - The Early Warning Reporting System (EWARS), a hospital-based sentinel surveillance system reporting six infectious diseases—malaria, kala-azar, Japanese

encephalitis, acute flaccid paralysis, measles, and neonatal tetanus—was established in eight sites throughout Nepal in 1997. The system was expanded to 26 zonal and district hospitals throughout the Terai region in 1998.

- During Nepal program year 3, assessment of the EWARS in 24 sentinel sites was carried out in April and May of 2001, and the following areas for improvements were identified.- EWARS forms, formats, registers and guidelines
 - Education and refresher training for laboratory staff
 - Coordination between public health and hospital laboratories
 - System and guidelines for specimen collection and transport
 - Coordination of monitoring and supervision
- *Improve the availability to the MOH of information on the epidemiology of VBDs:*
 - EHP has collected data from surveys and studies to gain a better understanding of the epidemiologies of malaria, kala-azar and Japanese encephalitis. The surveys paid special attention to gathering data on household knowledge and behavior related to the three diseases. EHP also gathered data on parasitology and disease vector behavior.
 - The results of analyses and resulting conclusions can be combined with information from other sources relevant to the three VBDs in an integrated MOH-EHP database. A more comprehensive synthesis of the above relationships has been carried out and will be used in guiding policy decisions, and more specifically in the design of appropriate and effective interventions. A CD-ROM was produced that contained an archive of the material developed by EHP Nepal as the project assisted the government with strengthening VBD efforts.
- *Develop and pilot-test sustainable intervention strategies for the prevention and control of the three priority VBDs:*
 - The Dhanusha-Mahottari VBD Program is the community intervention phase of the larger EHP Vector-Borne Disease Control Program in Nepal. The primary objective of the Dhanusha-Mahottari VBD Program is to enhance awareness in communities to improve prevention of these diseases; to strengthen community-level responses toward appropriate and early care seeking; and to improve case management by the health personnel at the village development committee (VDC) and district levels. Overall, the emphasis will be for communities to better understand and control diseases and for the health system to be more effective and responsive. The program concept is to develop sustainable peripheral-level prevention and case management services for kala-azar and malaria.
 - The program has six interventions that were initiated in Nepal program year 3:

1. Phased-in identification of high-risk villages
 2. Implementation of awareness, prevention, and care-seeking promotion activities in 18 targeted VDCs
 3. Individual motivation and support for care seeking by people with suspected cases
 4. Improved diagnosis and treatment of these diseases at more peripheral levels
 5. Improved referral system (up and back) and follow-up
 6. District reporting and surveillance
- In Nepal program year 4, a National Kala-azar Technical Group was formed to give policy direction on kala-azar (KA) prevention and control at the national level.
 - Monitoring of community-based malaria prevention and control: A series of training for female community health volunteers (FCHVs) on malaria in Kanchanpur District were carried out in collaboration with CARE/Nepal. After the completion of the training, a follow-up of the training and evaluation of utilization of knowledge on malaria by FCHVs will be conducted. Lessons learned from this will be used to make recommendation to the government and to replicate similar activities in Dhanusha and Mahottari Districts.
- *Assist the MOH in establishing intercountry linkages for addressing cross-border prevention and control of priority VBDs:*
 - In July 2000, a milestone was reached in EHP's cross-border efforts with an intercountry agreement from the BBIN (Bangladesh, Bhutan, India and Nepal) countries on the need to share information, to standardize surveillance and laboratory diagnoses for priority vector-borne diseases, and to establish a database on malaria drug and insecticide resistance. Launching of the BBIN Network World Wide Web site (<http://www.bbin.org>), established by EHP following a mandate from the July 2000 Inter-country Meeting on Cross-border Issues on Malaria, Kala-azar and Japanese Encephalitis Prevention and Control, has facilitated the sharing of information on VBDs and the monitoring of regional trends in the four countries.

4A.6.3. Plans for Year 4

4A.6.3.1. Principal Activities

- EHP will assist the Department of Health's Epidemiology and Disease Control Division (EDCD) in supporting VBDRTC in the implementation of the activities governed by its mandate in the prevention and control of VBDs through peripheral health institutions. In this regard, the primary functions of VBDRTC are to support EWARS and surveillance, implement specific field-level operations research, and conduct training on VBDs. Besides this, it will function as a malaria drug resistance surveillance network to support BBIN countries' activities in this area.

- VBDRTC marketing and research: EHP will assist VBDRTC with the preparation of an annual work plan, including the development of a human resources plan, and management and financial plans. The management and financial plans will cover fund-raising for the center and positioning it to compete for grants and research support.
- Evaluation of 8 pilot sites on the improved EWARS function will be undertaken by February 2003 through an international consultant. Based on this evaluation, scaling up of an improved EWARS plan will be undertaken in rest of the 18 sentinel sites.
- K39 and malaria dipsticks will be provided to the peripheral sites in the eight pilot sites. Laboratory staff of the district will be trained in the procedure to perform laboratory diagnostic tests. To facilitate laboratory diagnosis of Japanese encephalitis (JE), four laboratories (the B. P. Koirala Institute of Health Sciences [BPKIHS], VBDRTC, the National Public Health Laboratory [NPHL], and Bheri Zonal Hospital) will be regularly supplied with reagents to perform enzyme-linked immunosorbent assays (ELISAs). Sentinel-site hospitals will be strengthened to collect, store, and transport the collected specimens to these laboratories. Quality control of laboratory performance will be monitored locally for KA and malaria, whereas for JE it will be done at the U.S. Armed Forces Research Institute of Medical Sciences (AFRIMS), Thailand.
- A package of interventions primarily focusing on awareness raising and improved care-seeking behavior will be developed for communities identified as having a significant incidence of kala-azar (and malaria for years 2 and 3). These messages, largely introduced through behavior change communication (BCC) materials, will be disseminated through the community by FCHVs, health workers, health posts, and families in order to reach as broad a group as possible in an effective way.
- The Canadian Center for International Studies and Cooperation (CECI) will collaborate with the district public health officers (DPHOs), zonal hospitals, and periphery-level health systems to improve the referral system, most likely through a colored-card or referral-slip system.
- FCHVs, VDC members, and community leaders have important roles in the identification, education, and referral of individuals with suspected cases of falciparum malaria and kala-azar. These roles imply the development of a communication strategy that aims some of the care-seeking messages at these individuals with suspected cases, providing interpersonal counseling in order to encourage their care seeking, and it may involve other kinds of support (through VDCs, health committees, or other community organizations) to address specifically the barriers that these individuals may face. This intervention is also intended to raise awareness in general in the districts and to develop a community responsive approach to KA where trained health care providers and volunteers can actively support infected people and those at risk. A specific training program will be held at each VDC with the FCHVs and SPHI, PHCI, Heifer Project International (HPI), and community health workers, with follow-up every six months.

- A functional model of community-linked EWARS will be developed and implemented in the target VDCs of Kanchanpur District. An orientation program on EWARS will be conducted for the health care providers.
- Meeting on Standardization of Community-based Kala-azar Surveillance and Case Management in Dhanusha/Mahottari, Nepal, and the Adjoining Districts of Bihar State, India, which will involve a few participants from the central level (Kathmandu, Nepal, and Patna, India) as well as the district level (Dhanusha and Mahottari Districts, Nepal, and the adjoining districts of Bihar State, India).
- Extension of the in vitro malaria drug efficacy trial from Jhapa, Nepal, to West Bengal, the neighboring state of India: EHP is conducting an in vitro malaria drug efficacy trial in Jhapa in collaboration with AFRIMS. To effectively contain *Plasmodium falciparum* drug resistance, this trial will be simultaneously carried out in the neighboring areas of West Bengal.
- The WHO South East Asia Regional Office (WHO/SEARO) is expanding phase IV of the miltefosine clinical trials from India to Nepal through BPKIHS, Dharan, Nepal. It is envisaged that under activity 5, these trials will be carried out in conjunction with India, with the Nepal component being through BPKIHS via EHP support.

4A.6.4. Milestones for Year 4

- Review of VBDRTC progress in implementation of the work plan November 2002
- Recommendations from the Meeting on Standardization of Community-based Kala-azar Surveillance and Case Management in Dhanusha/Mahottari, Nepal, and the Adjoining Districts of Bihar State, India, February 2003
- Evaluation report of improved EWARS strategy in eight sentinel sites March 2003
- Recommendations on SO4, interventions 1 through 4, prepared in draft for further adjustments in Year 5 June 2003

4A.6.5. Budget

USAID/Nepal has provided \$1,180,000 in FY02 funds.

4A.6.6. Implications for Year 5

USAID/Nepal has requested EHP to participate in an infectious disease strategy design activity during the early part of Year 4 that would include VBD activities.

Progress in organizational development of VBDRTC will be critical this year in consideration of future support by USAID. A six-month review to be held in November will

review progress in implementing the VBDRTC strategy and work plan; the Nepal MOH's commitment to supporting VBDRTC will also be discussed during this review.

The CECI pilot interventions will be monitored this year, and a review in the middle of Year 5 will determine what recommendations will be made to the MOH for replication of the activities.

4A.7. Reducing Urban Malaria Transmission in Uganda

4A.7.1. Expected Results

EHP is collaborating with the Ugandan MOH and the municipal governments of Kampala and Jinja to perform a situation analysis of malaria transmission in the two cities and to develop and implement action plans for using larva control methods to reduce such transmission. During Year 4, EHP will work with local partners to perform the situation analyses and prepare action plans. If the situation analyses confirm local malaria transmission in one or both cities and interventions included in the action plan appear feasible and well supported by local partners, EHP will provide additional support in Year 5 for implementing the action plans. The result expected from such action would be a measurable reduction in malaria transmission in the intervention areas. The target beneficiaries of this reduction are residents of the intervention areas—primarily young children, but also including nonimmune adults.

4A.7.2. Progress to Date

This activity will begin early in Year 4.

4A.7.3. Plans for Year 4

4A.7.3.1. Principal Activities

Work in Year 4 will proceed in three steps.

1. Identify areas in each city that appear to be at higher risk for malaria, and confirm local transmission. This step includes analyzing existing data from urban health centers, performing cross-sectional surveys of selected groups (e.g., schoolchildren), and conducting entomological studies to collect and identify infective adult female mosquitoes.
2. In selected areas where local transmission has been confirmed, identify and characterize breeding sites for *Anopheles gambiae* in terms of location, permanence, land use, ownership, and other relevant variables.
3. Develop stakeholder groups, and use a participatory process for preparing a action plans to eliminate or manage productive breeding sites.

4A.7.3.2. Milestones

- Situation analyses completed May 2003

4A.7.3.3. Budget

The budget for this activity in Year 4 is \$150,000. This will be funded primarily by USAID/BGH/HIDN, using core funds committed to EHP from SO5, Infectious Diseases. USAID/BGH/HIDN has been awarded \$50,000 in matching funds from the Office of Environment and Urban Programs, Office of Environment, Bureau for Economic Growth, Agriculture, and Trade (USAID/EGAT/ENV/UP) that will be used to co-fund the activity. EHP expects to use all of the available funds in Year 4 and does not anticipate carrying over any of the funds to Year 5.

4A.7.4. Implications for Year 5

Work on preparing local action plans will be under way in Year 4 and will be brought to completion early in Year 5 (August 2003). Assuming that the situation analyses indicate that larva control actions are feasible and potentially effective, EHP will make plans to provide appropriate technical assistance for such actions in Year 5.

4A.8. Technical Support to the Asia–Near East Regional Infectious Diseases Program

4A.8.1. Expected Results

USAID/ANE launched a new strategy in June 2000 for addressing infectious diseases, including HIV/AIDS, tuberculosis, and malaria. The ANE regional program emphasizes support to help national institutions share information and monitor regional trends, including the prevalence and incidence of specific diseases for which data are weak or lacking (e.g., malaria, Japanese encephalitis, kala-azar, and dengue fever) and levels of resistance to antimicrobial and antimalarial drugs. EHP is providing technical support for implementing this program, in coordination with WHO/SEARO and as a complement to the cross-border activities initiated under the program in Nepal.

The general purpose of this activity is to promote common approaches to surveillance for VBDs among the BBIN countries and to facilitate information sharing among the four countries with regard to incidence, prevalence, and other aspects of VBDs. Under this activity, EHP is working with WHO/SEARO and key officials from the MOH in each country to reach agreement on the case definition, clinical and laboratory diagnostic procedures, surveillance protocols, and mechanisms for sharing surveillance data with regard to kala-azar, Japanese encephalitis, and malaria.

4A.8.2. Progress to Date

- A BBIN Network Web site (<http://www.bbin.org>) has been established to share information on VBDs: malaria, kala-azar, and Japanese encephalitis. This site is now being expanded to include regional trends of infectious diseases and antimicrobial resistance.
- To address the issue of malaria drug resistance and its surveillance in the BBIN countries, EHP has conducted a detailed review. The report, “Malaria Drug Resistance Inventory of Bangladesh, Bhutan, India and Nepal,” has been preliminarily disseminated among BBIN countries for review prior to publication.
- Following a mandate given to Nepal by the WHO/SEARO meeting on Development of a South Asia Surveillance Network for Malaria Drug Resistance in New Delhi, India, on January 9 and 10, 2002, EHP, with Nepal’s MOH, has initiated the establishment of a Malaria Drug Resistance Surveillance Network Secretariat for BBIN in Nepal.
- The Nepalese MOH and EHP are in the process of conducting in vitro and in vivo malaria drug resistance studies in border districts. The in vitro efficacy trial is to be conducted in Jhapa District, Nepal, in collaboration with AFRIMS, and these studies will be further extended to the regional level in the cross-border network.
- Through a review of documented reports, publications, and published data, an inventory of insecticides used primarily against vectors of malaria and also kala-azar and Japanese encephalitis in the BBIN countries is being developed.
- EHP, in collaboration with WHO/SEARO, organized the Workshop on Standardization of Cross-border Surveillance for Priority Vector-borne Diseases in BBIN in Paro, Bhutan. This workshop arrived at a consensus to adopt standardized methodologies and data exchange systems on surveillance, to be operationalized among BBIN countries.
- A meeting to share information on the kala-azar situation in Dhanusha and Mahottari Districts, Nepal, and the adjoining districts of Bihar State, India, is scheduled to take place in Dhanusha on June 7, 2002. This meeting should identify collaborative activities toward community-based kala-azar prevention and control in Bihar State and in Dhanusha and Mahottari Districts and should foster greater cross-border collaboration at the local and community levels.

4A.8.3. Plans for Year 4

4A.8.3.1. Principal Activities

In the coming year, EHP will work with WHO/SEARO on two activities:

1. A focused attempt to establish agreement among the BBIN countries on four points relating to Japanese encephalitis: (1) case definition, (2) clinical and laboratory diagnostic criteria, (3) surveillance protocol, and (4) information-sharing specifications.

This will be accomplished by identifying a senior, respected expert who will do the following:

- Prepare a specific, written proposal on the four points
- Distribute the proposal to country points of contact and WHO for comment
- Follow up with e-mails, telephone calls, and country visits as needed to advocate for the proposal's acceptance and determine the revisions required

This effort will culminate in a regional workshop to be held in Pune, India, at which country representatives and WHO will be expected to come to agreement on the final version of protocols for each of the four points.

2. A similar process to reach agreements regarding kala-azar diagnosis and surveillance, with the final workshop to be held in Bangladesh.

4A.8.3.2. Milestones

- Regional workshop on JE surveillance November 2002
- Regional workshop on kala-azar surveillance April 2003

4A.8.3.3. Budget

The budget for this activity is \$146,000, consisting entirely of funds originally committed by the USAID/ANE and being carried over from EHP Year 3.

4A.8.4. Implications for Year 5

Discussions are under way with the USAID/ANE regarding future plans for this activity. At this time, there is no commitment to continue the work beyond the activities and milestones indicated for Year 4.

4A.9. Technical Support to the USAID Bureau for Latin America and the Caribbean: Best Practices for Dengue Fever

4A.9.1. Expected Results

USAID/LAC has asked EHP to prepare a summary of best practices for the surveillance, prevention, and control of dengue fever. This paper will be disseminated to PHN staff in LAC, and it may form the basis of a presentation during the next LAC PHN officers state-of-the-art (SOTA) meeting, planned for March 2003.

4A.9.2. Progress to Date

This activity will begin early in EHP Year 4.

4A.9.3. Plans for Year 4

4A.9.3.1. Principal Activities

EHP will develop a summary document on best practices for dengue prevention and control; it will likely include sections on surveillance, mosquito control, public education, and case management. EHP consultants will identify and describe best practices under each category based on professional experience, interviews, and a review of current literature. EHP will contact recognized experts—including national program officials in the region, researchers, and others providing technical assistance through international organizations—to identify best practices. Examples will be drawn from LAC countries whenever possible. Although EHP consultants may visit selected field locations, this activity is primarily a desktop review complemented by broad consultation with key resource people in the region

4A.9.3.2. Milestones

- Best practices document completed January 2003
- Presentation to the LAC regional PHN SOTA meeting March 2003

4A.9.3.3. Budget

The budget for this activity is \$75,000, funded entirely by USAID/LAC. EHP anticipates using all of the available funding to develop and disseminate the requested product and does not anticipate having to carry over any portion of the funds into EHP Year 5.

4A.9.4. Implications for Year 5

At present, EHP does not anticipate follow-on work to this activity in EHP Year 5.

4A.10. Budget Summary for ECHO/XS and ECHO/IVM

The budget summary for Year 4 is presented in Table 3.

Table 3. ECHO XS and IVM Budget for EHP Year 4

Activity	Estimated Cost	FUNDING SOURCES				Total	C/O to Y5
		C/O from Y3	FY'02 SO5	Y4 M/B			
ECHO XS Core							
Subtask #1: Develop and Test XS Methods							
Technical Working Group on XS	E.X4.XSTWG	25,000					
Evidence-based Decision Making in Vector Control Programs	E.X4.VCDATAUSE	75,000					
Field Methods for Evaluating Vector Control Interventions	E.X4.VCEVALMETH	40,000					
Lessons Learned in Malaria Risk Stratification	E.X4.MALRISK	25,000					
Lessons Learned in Sentinel Site Surveillance	E.X4.SENTSURVEIL	25,000					
Subtask #2: Develop tools for promoting XS methods							
Information Dissemination for the ECHO/XS Program	E.X4.INFODIS	15,000					
Subtask #3: Promote adoption of XS methods							
Key Concepts for Cross-sectoral Surveillance	E.X4.XSREPORT	20,000					
Program Management							
Manage XS Program	E.X4.MANAGE	50,000					
Subtotal ECHO/XS Core		275,000	275,000			275,000	0
ECHO IVM Core							
Subtask #4: Demonstrate effectiveness of VC methods							
Develop Evidence on the Effectiveness of Larval Control Methods	E.V.4.LC.DURHAM	200,000					
Organize Session on Larval Control at 3 rd Pan-African MIM Conference	E.V.4.LC.MIM	20,000					
Support the SIMA initiative in East and Southern Africa	E.V.4.SIMAES	75,000					
Vector Control Methods for KA in Nepal	E.V.4.KAVECTOR	25,000					
Subtask #5: Develop and test IVM approaches							
Revise & Complete Guidelines for IVM	E.V.4.IVMGUIDE	75,000					
Revise the VC Needs Assessment Protocol	E.V.4.VCNATEST	10,000					
Subtask #6: Promote adoption of IVM approaches by national MCPs							
Support the African Network on Vector Resistance	E.V.4.ANVRMTG	15,000					
Identify Infrastructure Projects with VBD Impacts in Africa	E.V.4.INFRASEARCH	10,000					
MCP Internships in Southern Africa	E.V.4.SAMC	50,000					
Develop Tools for Promoting IVM	E.V.4.INFODIS	15,000					
Program Management							
Manage IVM Program	E.V.4.MANAGE	50,000					
Subtotal ECHO/IVM Core		545,000	100,000	500,000		600,000	55,000
Contribution to LLP, ICU and Year 5 Workplan		228,000		200,000		200,000	-28,000
Total XS and IVM Core Programs		1,048,000	375,000	700,000		1,075,000	27,000
ECHO XS and IVM Field Programs							
Eritrea	E.X.ER4	500,000	40,000		460,000	500,000	0
Nepal	E.X.NE5	1,230,000	50,000		1,180,000	1,230,000	0
Uganda	E.V.4.UG	150,000		100,000	50,000	150,000	0
South Asia Regional	E.X.4.ANE	146,000	146,000			146,000	0
LAC Regional (Dengue)	E.V.4.LAC	75,000	75,000			75,000	0
SIMA in West Africa	E.V.4.SIMAW	125,000	125,000			125,000	0
Total XS and IVM Field Programs		2,226,000	436,000	100,000	1,690,000	2,226,000	0
Grand Total ECHO/XS and IVM Program		3,274,000	811,000	800,000	1,690,000	3,301,000	27,000

Task 4B: Environmental Change and Health Outcomes Integrated Programs (ECHO/IP)

4B.1. Madagascar: ECHO/IP

4B.1.1. Introduction

One of EHP's primary tasks is to assist in the design, evaluation, and dissemination of lessons learned in integrating field activities in community-based natural resource management and population and health. The primary vehicle for carrying out this task is a four-year activity in Madagascar. Because of USAID programs in population and health and natural resource management, Madagascar is an ideal country to conduct this activity.

4B.1.2. Overview

This activity is divided into four major tasks:

1. Management, coordination, and support to Voahary Salama, a partnership of 24 organizations in Madagascar
2. Implementation of integrated approaches through the development of model approaches and support to two local nongovernmental organizations (NGOs)
3. Monitoring and evaluation of integrated approaches
4. Dissemination of lessons learned

EHP has established a local office with three full-time Malagasy staff to implement the activity along with local consultants. The activity is beginning its third year of implementation ; the first year was devoted to planning.

The current political problems in Madagascar have affected work in the country. Movement has become more difficult. Funding of NGO partners was blocked temporarily, making it difficult for them to do their work, but funding has resumed and all Voahary Salama partner NGOs continue implementing their work plan. USAID has evacuated its staff as a temporary measure, but bilateral projects continue operations with non-U.S. staff and support and guidance from Washington. The potential for increased violence remains and could undermine the EHP activity.

4B.1.3. Expected Results

4B.1.3.1. Overall Result

EHP will have evaluated, documented, and disseminated the effectiveness, sustainability and potential for scaling up of integrated health, population, and environment (HPE) programs in several rural settings along environmental corridors in Madagascar.

4B.1.3.2. Specific Results

- The capacity of Voahary Salama (Malagasy name for formal partnership that has been established) NGO partners to plan, implement, monitor, and evaluate integrated approaches will be strengthened.
- Model approaches for integration will be strengthened.
- Effectiveness and synergies of different implementation models will be evaluated.
- Lessons learned will be disseminated.

4B.1.4. Progress to Date

- Technical assistance was provided to partner NGOs (Department for Development of the Church of Jesus Christ [SAF] and the Madagascar Institute for the Conservation of Tropical Ecosystems [MICET]).
- Ongoing coordination support was provided to Voahary Salama by local EHP teams.
- Subcontracts were put in place for two local NGOs.
- Two approaches for integration (community champion and child to child) were being developed and tested, and one (farmer to farmer) was in development.
- A baseline survey was completed, and results were disseminated.
- A system for monitoring integrated activities was developed and tested.
- A midterm progress report was completed, and it will be disseminated in May 2002.
- Four presentations on this activity were made in the United States in FY02.
- Additional funding for Years 4 and 5 was secured.

4B.1.5. Plans for Year 4

- Voahary Salama membership will agree on and adopt an institutionalization model.
- EHP will explore and decide about options for institutionalization of the local EHP office.
- EHP will continue subcontracts with two partner NGOs (SAF and MICET).
- EHP will revise and implement the monitoring and evaluation system with partner NGOs.
- EHP will prepare for a postintervention survey.
- EHP will make a presentation at one international conference.
- EHP will complete drafts of two journal articles: (1) integration of HPE and (2) integrated HPE survey results.

The budget for Year 4 is \$400,000. This includes \$300,000 from the USAID Bureau for Global Health's Offices of Health and Nutrition (USAID/GH/HN) and Population (USAID/GH/POP) and, for the first time, \$100,000 in mission field support. The basic program is expected to require \$300,000. EHP has not yet been able to discuss with the mission its expectations for the \$100,000 of field support.

Task 6: Information Center

6.1. Introduction

Task 6 under Task Order 1 is to establish an information center to support all other tasks in the dissemination of contract products and deliverables. The Information and Communication Unit established under EHP I laid a solid foundation on which to build the EHP II Information Center (IC). The impact of credible information on policy dialogue and program implementation cannot be overstated.

Section 6.2 provides an overview of IC activities. Sections 6.3 through 6.6 describe expected results, progress to date, plans for Year 4, and implications for Year 5.

6.2. Overview

IC will play a key role in disseminating EHP II results and lessons learned within and outside USAID. The basic strategy of IC is to make documentation and dissemination an integral part of EHP II activities. To implement the strategy, IC will provide support to core publication and documentation functions, maintain capacity to respond to information requests, develop specialized bibliographies and other products that summarize the project's work (EHP Briefs, newsletters), and use the Internet (World Wide Web) and electronic transmission (e-mail) as the principal modes for information sharing and dissemination. IC will utilize existing and new technologies, existing and new information products, and existing and new partners. IC's activities will be closely aligned with and supportive of EHP II's Tasks 2, 3, and 4.

6.3. Expected Results

The end-of-project result is an IC established and functioning to support all other tasks in the documentation and dissemination of products and deliverables within and outside USAID. The following are subtasks to achieve the end-of-project result:

Subtask 1: *Strategy support to Tasks 2, 3 and 4 (IC.Y4.STRAT.SUP).*

Result: Support to EHP staff and USAID staff is provided, related to information needs, conference and meeting support, and documentation, production, and dissemination of EHP II results and lessons learned.

Subtask 2: *Partnerships with other centers, organizations, and services with complementary capabilities and specialties for information exchange, sharing of technologies, and reaching an expanded audience (IC.Y4.PARTNS).*

Result: Partnerships are developed for outreach, information exchange, joint provision of services, sharing of technologies, and information sustainability. At the completion of

EHP II, information and data from EHP II is available on an ongoing basis to USAID and other organizations, through partner organizations with complementary capabilities and specialties.

Subtask 3: *Provide information and dissemination services (IC.Y4.SERV).*

Result: Clients, key stakeholders, and partners are informed about EHP activities, results, and lessons learned.

Starting from Year 4, note that subtask 2 under Year 3, “establish an EHP activities database” has been omitted from IC, because the Project has determined that it is documenting the data on activities by other means.

6.4. Progress to Date

Subtask 1: Strategy Support to Tasks 2, 3 and 4

- Responded to information requests. Requests average about 200 per month.
- Developed specialized annotated bibliographies on malaria and geographic information systems, rotavirus vaccines, diarrhea-malnutrition relationships, and indoor spraying of insecticides.
- Initiated a biweekly bulletin on hygiene.
- Provided conference support (prepared information packets and CD-ROMs) for the EHP display table at the USAID Environment Officers’ meeting; the International Water and Sanitation Center (IRC) meeting in the Netherlands, the Global Health Council Conference; and the Africa state-of-the-art course.
- Supported documentation of contract products and deliverables. The Year 1 and Year 2 Annual Reports, the Year 3 Work Plan, and four Quarterly Reports (one Year 1 report and three Year 2 reports) were assembled, formatted, copyedited, printed, and posted in the eRoom.

Subtask 2: Establish an EHP Activities Database

- The activities database was updated periodically, and updates were posted on the EHP Web site.
- The database was used to respond to general information requests related to EHP activities.

Subtask 3: Partnerships with Other Centers, Organizations and Services with Complementary Capabilities and Specialties for Information Exchange, Sharing of Technologies, and Reaching an Expanded Audience

- IC established and facilitated an e-conference on the Hygiene Improvement Framework in collaboration with the Water Supply and Sanitation Collaborative Council (WSSCC) and the Global Applied Research Network (GARNET).
- Collaborative partnerships have been established (Table 4), resulting in shared information resources and an extended EHP outreach and visibility.

Table 4. Collaborative Partnerships

Partner	Status	Context
Established Partnerships		
Partnership for Social Sciences in Malaria Control (PSSMC)	Active	Members include EHP, the Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO), the WHO Roll Back Malaria (RBM) Initiative, USAID, the London School of Tropical Medicine and Hygiene (LSHTM), the UK Department for International Development (DFID) Malaria Consortium, and others. The EHP Library's biweekly <i>Malaria Bulletin</i> includes data from PSSMC's database on malaria and social science database and is disseminated to PSSMC consortium members.
World Bank Water Help Desk	Active	World Bank information staff collaborate with the EHP Information Specialist in responding to information requests.
BASICS Library	Active	The EHP Information Specialist and the Basic Support for Institutionalizing Child Survival (BASICS) librarian collaborate in responding to journal article requests from EHP and BASICS staff.
Sanitation Connection (SANICON) Environmental Sanitation Gateway	Active	EHP maintains the Hygiene Behavior and Monitoring/Evaluation nodes for SANICON.
USAID Development Experience Clearinghouse (DEC)	Active	EHP and DEC collaborate in making EHP reports available via the DEC Web site. These reports are then linked to the EHP Web site.
World Bank Public Health Thematic Group	Active	The <i>Environmental Health Update</i> is distributed to World Bank members.
Population and Health Materials Working Group	Active	Sharing of information with other USAID cooperating agencies.
Johns Hopkins University Center for Communication Programs (JHU/CCP) Health Communications Materials Network	Active	Dissemination of notices and updates related to new EHP publications and products.

Partner	Status	Context
Newsletter/Dissemination Partners		
IRC's SOURCE Water and Sanitation News, the World Bank's <i>HNPFLASH</i> , African Networks for Health and Development (AFRO-NETS), GARNET, Management Sciences for Health's COMMUNITY-HEALTH list, the Child Survival Collaborations and Resources (CORE) Group, etc.	Active	Information on EHP activities, reports, and Web site updates is disseminated via a variety of e-newsletters and listservers from other organizations.
New Partnerships		
WSSCC	Active	EHP and WSSCC collaborated in February on a Virtual Water Forum to discuss EHP's Hygiene Improvement Framework.
IRC	Proposed	The EHP Information Specialist visited IRC in January. IRC would like to collaborate on responding to information requests from developing countries and forward information requests that deal with water and health issues to EHP.

Subtask 4: Provide Information and Dissemination Services

- The following new products were developed: EHP brochure; EHP bookmark–Web site card; new EHP report covers; and the Bangladesh, Bhutan, India, and Nepal (BBIN) Network poster for the Global Health Council Conference. A template for EHP PowerPoint presentations was also developed.
- The EHP Web site was evaluated. There was overall positive feedback, indicating that the Web site as a valuable resource. Based on findings and recommendations from the evaluation, a new service provider has been identified.
- Use of the EHP Web site continues to increase: Web site visitors averaged over 11,000 per quarter in Year 3, compared with 8,000 in Year 2 and 3,000 in Year 1.
- Electronic dissemination of publications continued to increase. For example, during the third quarter (January through March 2002), statistics showed that a total of 2,163 EHP reports were downloaded. EHP Activity Report 106 (*Nicaragua: Rural Water Supply, Sanitation, and Environmental Health Program*) was the most popular, with 1,089 downloads. All EHP II reports are available electronically, as are all EHP I Activity Reports from November 1997. Ten Water and Sanitation for Health Project (WASH) “Golden Oldies” (the most popular reports from WASH) have also been converted to Adobe Portable Document Format (PDF).

- *Publications:* Eight e-newsletters, three EHP Briefs, five Activity Reports, and three joint publications with the World Bank and Basic Support for Institutionalizing Child Survival (BASICS) have been edited, formatted, assembled, and disseminated.
- *Reports for the File:* Thirty-nine Reports for the File have been prepared and archived to date.
- *Contract deliverables:* The Year 1 and Year 2 Annual Reports, the Year 3 Work Plan, and four Quarterly Reports (one for Year 1 and three for Year 2) were completed and posted in the eRoom. Two Quarterly Reports from Year 3 have been drafted and are under review.
- *Translation support provided:* System-Wide Initiative on Malaria and Agriculture (SIMA) criteria for proposals.

Milestones Achieved for Year 3

- Information-exchange network on one specialized topic, “Safe Excreta Disposal,” established (August 2001).
- MEDLINE database searchable via links from the EHP Web site (October 2001).
- EHP Web site assessed (December 2001).
- New Internet bulletin on handwashing developed and disseminated. The bulletin includes information on research related to handwashing, abstracts of studies, contacts for organizations involved in handwashing activities, literature reviews, and annotated bibliographies (February 2002).

6.5. Plans for Year 4 (July 1, 2002 to June 30, 2003)

6.5.1. Principal Activities

Subtask 1: Strategy Support to Tasks 2, 3 and 4 (IC.Y4.STRAT.SUP).

- Gather information on key topics and key conferences for EHP and USAID staff.
 - Identify key conferences and meetings for EHP staff.
 - Assist in literature searches and information requests as requested.
- Provide support to meetings, conferences, and brown bags.
 - Prepare CD-ROMs, EHP Briefs, information packets, handouts, and presentation materials as required.
 - Support e-conferences.

- Support EHP participation in the WSSCC sanitation meeting in Johannesburg, South Africa; USAID participation in the World Summit for Sustainable Development meeting; and EHP participation in the Global Health Council annual meeting in May 2003.
- Provide support to EHP consultants involved in field activities.
 - As requested by activity managers, provide information support and other support such as PDF conversion, scanning, and photocopying.
- Support documentation, production, and dissemination of project deliverables.
- Work with Project Management Team (PMT) members for documentation of final lessons learned reports and other project deliverables.
- Strategy support to set up information centers in EHP field offices.

Subtask 2: Partnerships for Information Exchange, Sharing of Technologies and Reaching an Expanded Audience (IC.Y4.PARTNS).

- Identify new partnerships and links with CESH and ECHO partners and with networks, working groups, and information centers and services (Web sites, newsletters, listservers) of other projects and organizations, with complementary capabilities and specialties. Maintain established partnerships.
- Facilitate joint e-conferences (area of emphasis for Year 4).
 - Explore the possibility of joint e-conferences with Partnership for Social Sciences in Malaria Control (PSSMC) network and IRC. Joint e-conferences are examples of EHP working with partners on specialized topics to share information and data and foster collaborative approaches.

Subtask 3: Provide Information and Dissemination Services (IC.Y4.SERV)

- Maintain the EHP Web site (area of emphasis for Year 4).
 - Continue to improve the Web site based on assessment recommendations, ongoing internal evaluations, and external feedback.
 - Update the Web site every six weeks (twice per quarter).
 - Investigate the feasibility of establishing an environmental health (EH) information Web ring with other relevant sites.

- Provide information via Internet bulletins and electronic mail on key EH activities and topics (area of emphasis for Year 4).
 - Prepare and disseminate the e-newsletter every six weeks (twice per quarter).
 - Prepare and disseminate the *Hygiene Bulletin*, the *Malaria Bulletin*, and the *Environmental Health Update* (once per month).
 - Provide Web publishing (e.g., a series of webliographies on diseases related to water supply and sanitation and certain vector-borne diseases or other products, as appropriate).
 - Develop an EHP CD-ROM library.
- Manage, monitor, and coordinate the IC administrative functions.
- Build and maintain a library and information database to enable prompt responses to information requests.
 - Maintain a bibliographic database and library collection, including cataloguing new accessions.
 - Scan periodicals and other information resources.
 - Respond to information requests.
- Disseminate information about EHP activities (area of emphasis for Year 4).
 - Prepare promotional materials; EHP Briefs; articles for the *EHP News*; the USAID population, health, and nutrition (PHN) e-newsletter; and EHP partners' newsletters.
 - Disseminate information via the Web, electronic media, print media, and other dissemination channels (meetings, conferences, brown bags).
- Support editing, publishing (print and electronic), design, and archiving activities.
 - Coordinate resources for writing, editing, production, and translation.
 - Provide electronic publishing.
 - Maintain report and photo archives and a bibliographic database.
 - Maintain an inventory of printed products (folders, brochures, etc.)
 - Provide design services.

6.5.2. Milestones

- Changes to the Web site were implemented, based on assessment recommendations, and a report will be prepared (first quarter).
- *Web publishing*: A series of Web-based bibliographies on diseases related to water supply and sanitation and certain vector-borne diseases will be developed (second quarter).
- One joint e-conference will be facilitated (third quarter).
- An EH Web ring will be established with other relevant Web sites (fourth quarter). A Web ring interlinks related Web sites with similar activities (for example, a Web ring of key institutions involved in hygiene). The ring is managed from one site.

6.5.3. Budget

The total preliminary IC Year 4 budget (Table 5) is \$430,000 (the Year 3 total was \$478,528). The preliminary budget includes Camp Dresser & McKee (CDM) and finance and accounting (F&A) fees.

Table 5. Information Center Year 4 Budget

Activity	Cost
Subtask 1: Strategy Support to Tasks 2 and 3	\$71,555
Subtask 2: Partnerships for Information Exchange, Sharing of Technologies, and Reaching an Expanded Audience	\$28,448
Subtask 3: Provide Information and Dissemination Services	\$329,997
Total	\$430,000

6.6. Implications for Year 5

In Year 4, IC will maintain its established standards of providing and disseminating information via Internet bulletins, specialized products (EHP Briefs), and electronic mail (e-newsletter) on key EH activities and topics. IC will also continue to respond to information requests, collect and disseminate information on EH, and facilitate information sharing networks on key topics.

The focus in Year 5 will be on two issues: (1) provision of support to documentation, editing, production, and dissemination of EHP II lessons learned and results achieved and (2) preparing the ground, through organizational links, so that at the end of EHP II, information and data from the project will be available on an ongoing basis to USAID and other organizations.

Task 7: Urban Health

7.1. Overview of EHP and Urban Health

As international donor attention increasingly focuses on the conditions and needs of the developing world's exploding urban population, EHP is experiencing growth in requests to help USAID better understand the health needs of the urban poor and to develop program strategies that effectively address these needs. EHP comes to these tasks with a history of successful environmental health work with the urban poor in all regions of the world. The EHP urban health agenda is now expanding to include broader health programs, generally focused on key child health interventions, of which environmental hygiene improvement and disease prevention form an integral part. In its urban health work to date, EHP has confirmed that in spite of the magnitude of the problem of urban poverty in developing countries and the exponential growth of megacities and their characteristic squatter settlements, there is relatively little reliable data on the health status of the urban poor as distinct from the general urban population, and there is a generalized lack of understanding on the part of governments and donor agencies of the socioeconomic and living conditions characterizing the urban poor. The result of this is a lack of pro-poor policies and inadequate programmatic attention to the health and other needs of the urban poor. EHP is therefore focusing on three energy streams that will flow through its urban health activities:

1. Increasing available data on the urban poor to better define the problems
2. Advocacy for improving urban pro-poor policies
3. Development of approaches for effective child health programs in urban poor settings

EHP will pursue the issues of disaggregation of health data collected through major surveys, such as the Demographic and Health Survey (DHS), by urban poor and nonpoor and the careful collection and dissemination of best principles and practices related to developing and delivering health-related services to the urban poor.

7.2. India: Improving the Health of the Urban Poor Living in Slums

7.2.1. Overview

India, long a nation of villages, is transitioning to a nation of cities. Slums or squatter settlements without basic amenities are home to 40% to 60% of the populations of its largest cities. The public health situation, especially for children, presents serious challenges. USAID/India's Urban Health Program is designed to address the needs of the urban poor in selected cities, in support of its child survival strategic objectives. The program will be carried out in several cities and require a local EHP office and staff. Its two main areas of intervention are neonatal survival and diarrheal disease prevention. The program will support

community-based and nongovernmental organizations (NGOs) in innovative behavior change communication (BCC), service delivery, and environmental health approaches; strengthen the capacity of the municipalities and other concerned institutions and private providers to provide health-related services to the urban poor; and advocate at national, state, and local levels for improved pro-poor policies through high-visibility events and the compilation and dissemination of information on the conditions of the urban poor.

7.2.2. Expected Results

- Use of preventive practices and coverage of key child and environmental health services in urban slum pockets receiving program assistance will increase.
- The capacities of participating community-based organizations (CBOs), NGOs, private providers, and the municipalities to address the health needs of the urban poor will improve.
- Pro-poor policies will be defined, and additional resources will be directed to meeting the health needs of slum residents.
- Lessons learned and proven strategies and tools will be disseminated to planners and implementers for application in other urban settings.

7.2.3. Progress to Date

- Completed three EHP temporary duty (TDY) visits to India for initial scoping, and development of overall strategy and action plan for implementation
- Established the EHP/India office, and hired the Program Director and administrative staff.
- Reprogrammed city-based activities to Indore and elsewhere due to civil strife in Ahmedabad.
- Developed statements of work (SOWs) for program-launching activities in Indore and Jamshedpur.

7.2.4. Plans for Year 4

Reprogramming of activities to Indore will result in charge codes being opened for the following activities:

- Create urban health alliances:
 - Create an official group of alliance partners in Indore and possibly another city to partner with CARE's urban program.
 - Form working groups (WGs) for various issues.

- Support workshops for WGs to carry out programs.
- Prepare for and conduct a national advocacy event for urban poor health programs, to be held in the city where the Urban Health Program is operational.
- Carry out formative research, environmental, and behavioral problem diagnosis related to neonatal survival and diarrheal disease prevention and treatment in urban slums.
- Develop and test BCC strategy and materials.
- Improving data collection and analysis for decision making:
 - Assess municipal and NGO data systems.
 - Assess public and private health services and facilities coverage.
 - Provide technical assistance (TA) for data collection, storage, and analysis.
- Assessment of Angan Wadi models of operation:
 - Conduct cost-effectiveness evaluations of current models.
- Small grants program:
 - Design and publish requests for proposals (RFPs)
 - Award grants to slum-based health organizations for innovative interventions for diarrheal disease prevention and treatment and neonatal survival.

Budget: \$1,000,000.

7.3. Asia and Near East Urban Health Initiative: Egypt Urban Slum Child Health Assessment (UH.ANE.EGYPT)

7.3.1. Overview

The Asia and Near East (ANE) region is characterized by rapid population growth and high urbanization rates, which have resulted in “megacities,” with populations over 10 million. Many of these millions live in squalid poverty in illegal settlements, without adequate water supply, sanitation facilities, and health and other services. High infant and maternal mortality rates, low female literacy, rapid spread of HIV/AIDS, and high morbidity across the health sector’s focal illnesses are the norm as population rates explode, especially in cities.

Recent concerns among USAID’s ANE health officers that USAID’s health programming is not keeping pace with the reality of rampant urbanization and the dire conditions of small children in the region’s slums led to the development of a three-phase activity whose execution has been entrusted to EHP. The overall purpose of the activity is to catalyze

population, health, and nutrition (PHN) officers in USAID's ANE missions to direct resources toward programs designed to meet the health needs of the urban poor. Broad activities are as follows:

- Assessing the state of the current knowledge base on ANE urban slum populations
- Contributing to that knowledge through on-the-ground research on existing health conditions and needs in urban slums
- Offering practical guidelines for urban slum health program development and implementation

Phase I, a desktop literature review of existing studies on child health status and determinants in urban slums and squatter settlements in selected ANE countries, was recently completed. Egypt (Cairo), India (Ahmedabad), and the Philippines (Manila) were selected as case countries (and cities).

Phase II is envisioned as a research activity to include both quantitative and qualitative research that will increase our understanding of the health situation and health needs of children living in urban slums and periurban squatter settlements. Egypt will be the locus for this activity.

7.3.2. Expected Results

- Assessment of conditions and causes of urban slum child health in selected locations in Egypt.
- Recommendations for program priorities, strategies, and interventions for USAID and other donors to improve the health of children under five years old living in Egypt's urban slums.
- A report on lessons learned in urban slum child health assessment for use in ANE in developing an urban health advocacy approach.

7.3.3. Progress to Date

- Finalized a literature review and produced a report.
- Produced an SOW for the Egypt assessment.

7.3.4. Plans for Year 4

- In partnership with a local research institute and Egyptian NGOs, EHP will carry out quantitative and qualitative surveys on the health status of urban slum children under five years old; on the environmental, sociocultural, and economic determinants of child health; and on the institutions and programs currently playing a role in urban slum child health in Egypt.

- EHP will hold program strategy development workshop for USAID, the government of Egypt, and other donors and partners based on findings of assessment.
- EHP will disseminate lessons learned in urban slum child health programming to wider ANE audience.
- EHP will provide one team leader to coordinate and manage process.

Budget: \$340,000.

7.4. Ghana Urban Health Assessment (UH.GHANA.ASSESS)

7.4.1. Overview

Ghana is a democratic West African nation with a population of roughly 20 million. The urban population currently constitutes 38% of the total, and it is growing at over twice the rate of rural areas. At the current growth rate, the population residing in Ghana's cities will double in just 18 years, placing unsustainable pressure on the urban economy, infrastructure, and environment. Urban poverty is growing as quickly as the urban population. Poverty in Accra, for example, grew from 9% in 1987 to 20% in 1993. Given rapid urbanization and pauperization, USAID/Ghana plans to achieve better understanding of the health conditions of the urban poor, leading to the development of effective platforms from which urban public health services can be delivered.

USAID/Ghana has asked EHP to conduct an assessment of urban health conditions in Accra and two or three other cities. The assessment should fit into the mission's current health program priorities—family planning, child survival, and HIV/AIDS—and make use of secondary sources. A team of two public health professionals with urban, environmental health, and/or institutional capacity development background will work first in Washington and then in Ghana.

7.4.2. Expected Results

- Clearer understanding of the causes and conditions underlying health problems of urban slum dwellers in Ghanaian cities through information obtained through interviews, a literature review, secondary data sources, and slum visits.
- Recommendations to USAID/Ghana for future urban slum health programming.
- A blueprint on urban slum health assessments for use in other countries.

7.4.3. Progress to Date

- EHP developed of a scope of work for the activity.
- EHP identified team members.

7.4.4. Plans for Year 4

- Literature review and interviews in Washington with donors and cooperating agencies (CAs) working in urban health in Ghana.
- Urban slum health assessment in Ghana that includes the collection of existing statistics on morbidity and mortality from lead killer diseases, availability of antenatal care, length and use of breast-feeding, use of oral rehydration therapy (ORT), vaccination rates, vitamin A supplementation, nutritional status, access to basic environmental services (such as water and sanitation), and use of hygienic practices, such as handwashing. It also will include a description of the urban slum environment, an analysis of existing health services and institutions, and other donor and CA activities.
- Report of assessment and recommendations for health programming.

Budget: \$70,000.

7.5. Peru: Urban Environmental Health and Behavior Change

7.5.1. Overview of Task

The purpose of the USAID Urban Environmental Health and Behavior Change Activity in Peru is to reduce health risks associated with exposure to locally generated contaminants and pathogens in periurban residential neighborhoods and communities. This purpose will be achieved by addressing environmental health threats through four types of interventions or subactivities:

1. Policy improvement assistance to Peruvian government agencies having environmental health responsibilities
2. Site-based pilot projects to demonstrate innovative ways of addressing environmental health needs
3. Technical assistance, training, and local institutional strengthening.
4. Development of environmental health risk monitoring capacity with community involvement.

The purpose of this activity is to provide a wide range of technical assistance and procurement support to the General Directorate of Environmental Health (DIGESA) of the Ministry of Health (MOH) and to the implementing private voluntary organizations (PVOs) and local authorities to help achieve the overall activity results.

7.5.2. Expected Results

- Assisting DIGESA in developing a life-of-project plan and annual work plans.
- Training DIGESA in behavior change.
- Strengthening DIGESA's management and teamwork skills.
- Designing and facilitating the start-up workshop.
- Supporting the procurement of computers, air-monitoring equipment, and others to be determined.
- Financial support for assessment of solid-waste pickers.
- Financial support for water quality testing of waters from Lake Titicaca.
- Assisting DIGESA in developing a project monitoring plan.
- Assisting DIGESA in developing a national environmental health surveillance system.
- Training DIGESA in geographic information system (GIS) applications for environmental health.

7.5.3. Progress to Date

- All of the above expected results have been achieved except for the development of the environmental health surveillance system, which is under way.

7.5.4. Plans for Year 4

- Finalize the environmental health surveillance activity with DIGESA.
- Provide additional technical assistance and procurement assistance as requested by USAID.

EHP has \$175,000 remaining in USAID/Peru funds to provide assistance to be determined as needed.

Table 6. Urban Health Year 4 Budget

Activity	Proposed Budget
India Program	\$1,000,000
ANE/Egypt Assessment	340,000
Ghana Assessment	70,000
Peru Urban Environmental Health and Behavior Change	175,000
TOTAL	\$1,585,000

General Office Support

This section describes the general office support activities and the estimated cost to run the EHP office. The general office support includes the labor costs, as per the EHP II contract, of various project and support staff and a number of other direct costs (ODCs) related to running the office.

The staff funded under this activity includes full-time, part-time, and temporary staff working in finance and accounting (F&A), secretarial support, contract administration, and project management. The ODC category covers rents and storage, general telephone costs, commodities (office supplies), equipment (such as computers and maintenance of printers), and other miscellaneous costs for such items as postage and photocopying.

This activity will include labor costs and purchases carried out from July 1, 2002, through June 30, 2003. The total cost of this activity will be \$715,000. Of that amount, an estimated \$515,000 will be recovered by allocating 8% from every EHP activity budget for the general office costs, or F&A.

Estimated budget: \$715,000.