



ENVIRONMENTAL HEALTH PROJECT

**EHP II Year 3 Annual Report
July 2001— June 2002**



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Abbreviations

ADRA	Adventist Development and Relief Agency, Madagascar
ANE	Asia and the Near East Bureau
ANVR	African Network for Vector Resistance
APHA	American Public Health Association
BASICS	Basic Support for Institutionalizing Child Survival
BBIN	Bangladesh, Bhutan, India, and Nepal
CCP	Center for Communication Programs, Johns Hopkins University
CDC	Centers for Disease Control and Prevention
CEC	Canadian Center for International Studies and Cooperation
CESH	Community-Based Environmental Sanitation and Hygiene
CGIAR	Consultative Group on International Agricultural Research
C-IMI	Community-Based IMCI
CORE Group	Child Survival Collaborations and Resources Group
CRS	Catholic Relief Services
CSGP	Child Survival Grants Program
CTO	cognizant technical officer
DHF	Demographic and Health Survey
DIGESA	General Directorate of Environmental Health (Peru)
DRC	Democratic Republic of the Congo
EAWAG	Swiss Federal Institute for Environmental Science and Technology
ECHO	Environmental Change and Health Outcomes
EDCD	Epidemiology and Disease Control Division (Nepal)

EGAT	Economic Growth, Agriculture and Trade Bureau
EHP II	Environmental Health Project II
EWARS	Early Warning and Response System
GARNET	Global Applied Research Network
GESCOME	Community management of Environmental Health (Benin)
GIS	geographic information system
HIDN	Health, Infectious Diseases and Nutrition Office
HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
ICDDRB	International Center for Diarrheal Disease Research, Bangladesh
IEC	information, education, and communication
IMCI	integrated management of childhood illnesses
INAPA	National Water Supply and Sewerage Institute (Dominican Republic)
IP	Integrated Programs
IRC	International Resource Center for Water and Sanitation
IVM	integrated vector management
KAP	knowledge, attitudes, and practices
KPC 2000	Knowledge, Practices, and Coverage Survey 2000
LAC	Latin America and the Caribbean Bureau
LDI	Landscape Development Initiative, Madagascar
LSHTM	London School of Tropical Medicine and Hygiene
MCDI	Medical Care Development International
MEASURE	Monitoring and Evaluation to Assess and Use Results
MICET	Madagascar Institute for the Conservation of Tropical Ecosystems

MISAU	Ministry of Health, Mozambique
MOH	ministry of health
MVDP	Malaria Vaccine Development Program
NGO	non-governmental organization
PAHO	Pan-American Health Organization
PHN	Population, Health and Nutrition Office
PLAN	Plan International
PRB	Population Reference Bureau
PSI	Population Services International
PVO	private voluntary organization
RBM	Roll Back Malaria Initiative (WHO)
RUDO	Regional Urban Development Office
SAF	Department for Development, Church of Jesus Christ, Madagascar
SAFE	Sanitation and Family Education Project, Bangladesh
SANDEC	EAWAG Department of Water and Sanitation in Developing Countries
SANRU	Rural Health Program III (Democratic Republic of the Congo)
SIMA	System-Wide Initiative on Malaria and Agriculture
SOTA	state of the art
TIP	trials of improved practices
TSA	environmental health technicians, Honduras
UNEP	United Nations Environment Program
UNICEF	United Nations Children Fund
USAID	United States Agency for International Development
VS/IDI	Voahary Salama/Integrated Programs Initiative (Madagascar)

VVBDRTC	Vector-Borne Disease Research and Training Center, Nepal
VWS	Village Water and Sanitation Program, West Bank
WELL II	Water and Environmental Health at London and Loughborough
WHO	World Health Organization
WHO/AFRO	WHO Regional Office for Africa
WHO/SEARO	WHO Regional Office for South East Asia
WSSCC	Water Supply and Sanitation Collaborative Council
XS	cross-sectoral surveillance

Summary

This annual report describes the principal activities and accomplishments of Year 3 (July 1, 2001—June 30, 2002) of the U.S. Agency for International Development (USAID) funded Environmental Health Project (EHP II). In addition, status reports on meeting end-of-project results and achieving the project's highest level of monitoring results are given. Project activities were carried out in the field and at the project's headquarters in Arlington, Va.

Year 3 accomplishments for the seven tasks under Task Order #1 are as follows:

Task 1: Work Plan. The work plan for Project Year 4 was completed on time, but final approval from USAID was pending at the end of the fiscal year.

Task 2: Policy and Lessons Learned. Work continued on developing useful environmental sanitation indicators in conjunction with the IRC, WSSCC, WHO, UNICEF, WELL, LSHTM, CINARA and the CORE Group. The most important policy work was publication and dissemination of documents on the 1995–1999 Central American Hand Washing Initiative, a joint effort of EHP and BASICS to promote private-sector participation in the promotion of handwashing with soap. Working in partnership continued to be a priority. Key partners are the CORE Group's Working Groups on Malaria and on C-IMCI. In addition, the Partnership Coordinator reviewed PVO detailed implementation plans for Child Survival Grants.

Task 3: Community-Based Environmental Sanitation and Hygiene (CESH). CESH contracted with the International Institute for Nutrition in Peru to carry out operations research on the safe disposal of children's excreta, prepared sanitation policy guidelines, developed a module on diarrheal disease prevention for PAHO's C-IMCI programs in Nicaragua and Peru, created a master quantitative assessment tool for measuring health and socioeconomic impacts of water supply and sanitation, contracted with the Manoff Group to complete the draft behavior change programming guide, and refined the hygiene improvement framework advocacy document. Urban health became a new emphasis under CESH, with the launch of a new urban health program for India, an urban health initiative for the ANE region and potential activities for Ghana and/or Mali.

Task 4A1: Environmental Change and Health Outcomes (ECHO) Cross-Sectoral Surveillance (XS). Activities continued in Eritrea and Nepal and concluded in Mozambique, where the mission decided against continuing technical assistance to the National Malaria Control Program. In Eritrea vector behavior studies were completed, larval breeding sites were mapped, larvicide efficacy and insecticide resistance studies were carried out, and the first of 13 planned sentinel surveillance sites was begun. In Nepal, the VBDRTC created a partnership with the Canadian Center for International Studies for carrying out a vector-borne disease program in Dhanusha and Mahottari Districts where kala-

azar and malaria are prevalent. In addition, the Center fostered creation of a network among Bangladesh, Bhutan, India and Nepal to standardize surveillance methods and share information about vector-borne disease programs.

Task 4A2: ECHO/Integrated Vector Management (IVM). EHP participated in several important meetings on IVM: a Roll Back Malaria workshop in Zambia (November 2001), the Fresh Air malaria workshop in Nairobi, Kenya (November–December 2001), and a technical symposium (April 2002) in association with the 23rd African Health Science Congress in Kampala, Uganda. In addition, guidelines for integrated vector management were drafted in collaboration with WHO/AFRO. A new IVM program was initiated in Uganda with the goal of reducing urban malaria transmission.

Task 4B: ECHO/Integrated Programs (IP). The pilot program in Madagascar continued on schedule: Field activities were supported, three approaches were developed and initiated (community champion, child-to-child and farmer-to-farmer), and a monitoring and evaluation system was developed and pretested. ECHO was registered as a Malagasy association, thus providing the option for EHP to enter into a subcontracting arrangement for Year 5 instead of hiring local staff directly.

Task 5. Grants. No activities were carried out under this task.

Task 6: Information Center (IC). In addition to normal work maintaining information and publications services, the IC started up a new biweekly bulletin on hygiene, carried out an assessment of its web site and began implementing the recommendations, facilitated an e-conference on safe excreta disposal, and established interactive information exchange networks between practitioners and researchers on specific topics. The EHP web site remains a major vehicle for knowledge sharing and accessing reports and publications.

Task 7: Other. EHP uses core funds to assist missions and bureaus in environmental health activities that do not fit neatly under CESH or ECHO. Decentralization and hygiene behavior-change activities in the Dominican Republic wound down, with only the final reports to be completed. The case studies on decentralization of water and sanitation in LAC also were completed, and distribution began. And in South Africa, the Bushbuckridge retail water distribution project was transferred to Chemonics. In LAC, practical guidelines on improving sanitation in small towns were written and are now being revised. In Honduras, EHP is providing an advisor in environmental health to develop a model for supervising and evaluating environmental health technicians.

There were six additional Task Orders in Year 3.

Task Order #2: Malaria Vaccine Development Program. The MVDP continued to coordinate USAID efforts by supporting regular vaccine team meetings and organizing the semiannual meetings of the Scientific Consultants Group.

Task Order #3: Nicaragua—Emergency Rural Water Supply, Sanitation and Environmental Health Project. The two-year reconstruction program was completed at the end of 2001. All targets were met or exceeded: 2,692 water systems and 7,226 latrines constructed or rehabilitated; 295 potable water wells drilled; 3,503 environmental improvement projects constructed; and over 12,000 community and household training events held.

Task Order #801. El Salvador: Legal and Regulatory Reform of the Water Sector. This activity, slated for completion in September 2002, assisted the Ministry of the Environment to develop the legal and institutional framework for watershed management commissions.

Task Orders #802, 803 and 804. West Bank: Village Water and Sanitation Program. This program was intended to provide safe and sustainable water and sanitation services to 44 rural towns serving a population of 135,000 in the West Hebron and South Nablus areas. Task Order #802 was for engineering studies; #803 for health, governance, wastewater re-use studies, designs and program; and #804 for engineering designs. The engineering studies were completed, but in March 2002, when the other aspects of the program were due to begin, major Palestinian municipalities were invaded and occupied by the Israeli Defense Forces. Since planned project activities were not possible, USAID shifted project resources and personnel to provide emergency water supplies through the Emergency Water Operations Center.

EHP continues to make steady progress in meeting end-of-project results. Some examples:

EHP has met the end-of-project target of organizing two major international meetings and participating in four.

The monitoring and evaluation plan for CESH and ECHO is in place.

A policy report on public-private partnerships for promoting handwashing was issued, and topics for additional reports were identified.

One of two operations research questions on diarrheal disease prevention is being examined: safe disposal of children's excreta.

Three cross-sectoral surveillance methods have been developed: national-level risk stratification, local-level risk stratification and characterization of larval habitats. These have been or are being tested in Eritrea, Mozambique and Nepal.

Integrated vector-management control approaches have been developed for six different settings in Africa and have been promoted in Eritrea.

Four of the core tasks (CESH, ECHO/XS, ECHO/IVM and ECHO/IP) have shown clear achievements in innovation and partnerships/leveraging (Chapter 2. Achievements to Date).

A table lists the project milestones for Year 3 and their status. Of the total 39 milestones, 30 were achieved, seven were rescheduled for Year 4, one was cancelled, and one was initiated but not completed.

Introduction

Background

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 or 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 for access by diverse interests within USAID to a broad range of expertise in environmental health.

Results

To achieve these objectives, EHP II was awarded as an indefinite-quantity contract with two main parts. The first part is Task Order #1, which was awarded at the same time as the umbrella contract. It specifies the programmatic areas in which the project should work to enable it to meet the first objective above. These are all related to the child health strategic objectives of USAID's Office of Health, Infectious Diseases, and Nutrition. The key function of Task Order #1 activities is to provide global leadership in the development, implementation, and promotion of new and improved, cost-effective, and replicable environmental health interventions. Under Task Order #1, there are six tasks as follows: Task 1: Work Plan; Task 2: Policy and Lessons Learned; Task 3: Community-Based Environmental Sanitation and Hygiene; Task 4: Environmental Change and Health Outcomes; Task 5: Grants; Task 6: Information and Communication; Task 7: Other Activities.

Two intermediate results under the Office of Health, Infectious Diseases and Nutrition's strategic objective for child health are to be accomplished by EHP II through Task Order #1:

Intermediate Result 1: 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, and malaria, as well as other vector-borne diseases.

Intermediate Result 2: 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.

The second part of the contract provides for additional Task Orders as mechanisms for achieving the second objective, above. So far there have been eight such Task Orders: two completed (Nicaragua and Ukraine) and six ongoing.

Year 3 Highlights

Under Task 3, Community-based Environmental Sanitation Hygiene (CESH), the elaboration of the Hygiene Improvement Framework (HIF) significantly contributed to framing EHP work and the work of EHP partners in the prevention of diarrheal disease. The next step is to mainstream effective diarrheal prevention activities into integrated child health programming both inside USAID and among partner organizations, specifically with PAHO in Nicaragua and Peru.

Under Task 4, Environmental Change and Health Outcomes (ECHO), EHP has developed a vector-control niche in malaria control and prevention and is improving tools for collecting and using information for program decisions.

Urban health was formally identified as a core task through an amendment to Task Order #1. Urban programs were initiated in ANE, India, Ghana, and Uganda.

EHP continued to be responsive to field requests, notably in the West Bank and Gaza where the Village Water and Sanitation Program was quickly shifted to emergency repair and replacement of infrastructure in the wake of incursions into the project area of the Israeli Defense Forces.

Challenges

Efforts during Year 3 to accelerate field-based implementation faced significant challenges: the aftermath of the attack of September 11, 2001, delayed planning visits to the field, and specific internal conflicts slowed down the progress of field activities in India, Nepal and Madagascar. In addition, attempts to fill the position of senior technical specialist for Integrated Vector Management (IVM) were ultimately unsuccessful, and it was decided to rely on individual consultants, rather than a single individual, to provide technical leadership in entomological surveillance, risk stratification, epidemic forecasting, and testing larval control methods. While this staffing issue was being resolved, progress was slowed in both Environmental Change and Health Outcomes/Cross-sectoral Surveillance ECHO/XS and IVM activities.

EHP Consortium

EHP II is managed by a consortium of specialized organizations, headed by Camp Dresser and McKee International Inc., an environmental engineering company based in Cambridge, Mass.. Seven other organizations make up the consortium:

- Associates in Rural Development (surveillance, natural resources management, grants administration).
- International Science and Technology Institute (tropical and vector-borne diseases, information management)
- John Snow Inc. (health policy, epidemiology, health and hygiene education, surveillance)
- The Manoff Group (behavior change, community involvement, social marketing)
- Research Triangle Institute (policy and regulation, health financing, municipal services, air pollution, risk assessment).
- Training Resources Group (institutional strengthening, organizational development, training).
- Tulane University School of Public Health and Tropical Medicine (tropical diseases and malaria, operations research).

Strategy

EHP works in partnership with other USAID projects, UN and international agencies, private voluntary organizations, and nongovernmental organizations to contribute to improved child survival by more effectively integrating environmentally related prevention measures into child health programs. EHP's strength is based on over 20 years of program history, starting with the Water and Sanitation for Health (WASH) Project, and applied methodically in the program management cycle of assessment, planning, implementation, and evaluation. Strategies include the following:

- Develop and test cost-effective, state-of-the-art interventions and tools
- Design activities that put communities and the family at the center
- Build sustainability into designs and bring successful pilot approaches to scale
- Contribute to discussions at international organizations and forums to shape policies and set priorities in support of disease prevention
- Apply scientific rigor to surveillance, monitoring, and evaluation that broadens the evidence base of disease prevention and guides program design
- Document lessons learned and disseminate information broadly
- Provide technical assistance that is responsive to client needs and that is of high quality and is cost-efficient.

How This Report Is Organized

Chapter 1 presents the status of performance indicators leading to end-of-project results for EHP II core activities: Policy and Lessons Learned, CESH, ECHO/XS, ECHO/IVM, and ECHO/IP.

Chapter 2 presents achievements to date related to Tasks 3 and 4 (CESH and ECHO). The achievements report on the project's highest level of monitoring results. Achievements are summarized in three categories: effectiveness, innovation and partnerships/leverage.

Chapter 3 covers all activities that were ongoing during Year 3. Each activity is introduced briefly, and its principal accomplishments are listed. Both Task Order #1 and additional Task Orders are covered.

Two annexes complete the report: Annex I—Year 3 Milestone Report and Annex II—A Cumulative List of EHP II Reports and Publications.

Chapter 1. End-of-Project Results to Date

This chapter presents the status of performance indicators leading to end-of-project results for EHP II core activities: Policy and Lessons Learned, CESH, ECHO/XS, ECHO/IVM, and ECHO/IP. For each activity, the results and indicators are given along with the current status.

Policy and Lessons Learned (includes indicators, performance monitoring, meetings and reports, partnerships, and lessons learned)

#	Result	Indicator	Progress to Date
1.	Monitoring and evaluation plan <i>implemented</i> for CESH and ECHO.	Monitoring and evaluation plan with project-level and task-specific indicators.	EHP has developed a Monitoring and Evaluation Plan and is using it for monitoring CESH and ECHO activities.
2.	Indicators for water, sanitation and hygiene that go beyond coverage and access <i>developed</i> , in collaboration with other organizations, and <i>tested</i> in CESH field programs.	List of indicators and data collection methods developed.	EHP has: —Developed a comprehensive environmental health assessment that includes intestinal parasites as proximate measures for changes in water, sanitation and hygiene practices as well as water quality. —Tested a comprehensive environmental health assessment tool containing a core set of hygiene improvement indicators in the West Bank (3/2002). —Prepared draft indicators.
3.	Indicators and data-collection instruments for cross-sectoral surveillance with a focus on malaria <i>developed</i> and <i>tested</i> , in coordination with WHO and other organizations.	List of indicators and instruments for cross-sectoral surveillance and IVM.	
4.	Four major international meetings <i>supported</i> by EHP participation and two <i>organized</i> by EHP.	Number of major international meetings in which EHP participates and organizes.	EHP has met the end-of-project target of organizing two major international meetings: 1. 2000, the Global Consultation on the Health Impacts of Indoor Air Pollution. 2. December 2001, Monitoring and Evaluation of Water, Sanitation and Hygiene Behaviors, Delft, Netherlands. EHP played a role in organizing this policy meeting,

#	Result	Indicator	Progress to Date
			<p>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.</p> <p>3. EHP organized an E-Forum on Hygiene Promotion, a month-long e-conference on EHP's hygiene improvement framework with a final report.</p> <p>EHP has met the end-of-project target by actively participating in four major international meetings:</p> <ol style="list-style-type: none"> 1. Respiratory Diseases and the Environment, Lucknow, India. 2. November 2000. Water Supply and Sanitation Collaborative Council meeting, Iguacu, Brazil. 3. November 2001. APHA annual meeting. 4. May 2002. Global Health Council annual meeting.
5.	Major policy issues of global importance in CESH and ECHO identified and five reports produced to contribute to their consideration.	Number of reports published.	EHP published a policy report on public-private partnerships for promoting hand washing.

Community-Based Environmental Sanitation and Hygiene

#	Result	Indicator	Progress to Date
1.	Two operations research questions on diarrheal disease prevention in CESH programs <i>studied</i> and results <i>documented</i> .	Number of questions studied.	EHP is studying one operations research issue: the safe disposal of children's excreta. The desk study is being implemented by the International Institute for Nutrition in Peru.
2.	At least one tool developed under CESH to promote environmental sanitation as national policy <i>applied</i> in five USAID-assisted countries.	Number of USAID-assisted countries in which tools have been applied.	
3.	Tools to assist non-governmental organizations (NGOs), governments, and communities to identify priorities and to select, implement, and evaluate interventions <i>developed</i> .	Tools developed, applied, and documented to (1) identify local priority environmental conditions related to diarrheal disease prevention, (2) to guide selection of interventions, (3) to guide implementation and monitoring, and (4) to evaluate impact on behaviors related to diarrheal disease in children under five.	EHP is developing two tools: 1. Gathering baseline information in the field in advance of program implementation to identify local priority environmental conditions related to diarrheal disease prevention and to evaluate impact on behaviors related to diarrheal disease in children under five—now being refined. This activity is part of development of HIQUAT. 2. The Action Learning Guide on behavior change for hygiene improvement to guide selection of interventions and to evaluate impact on behaviors related to diarrheal disease in children under five—now being developed by the Manoff Group.
4.	Activities using tools developed under Result #3 <i>implemented</i> in at least three USAID-assisted PHN countries.	Number of USAID-assisted PHN countries that apply tools.	Field experience in Benin, Nicaragua, Dominican Republic and DR Congo is being used in development of CESH tools.

Environmental Change and Health Outcomes/Cross-Sectoral Surveillance

#	Result	Indicator	Progress to Date
1.	Methods for cross-sectoral surveillance <i>developed</i> and <i>tested</i> .	Number of methods tested.	EHP has developed and has tested or is testing three methods: 1. Risk stratification at the national level, in Eritrea 2. Risk stratification at the local level, in Mozambique 3. Characterization of larval habitats in Eritrea, Mozambique, and Nepal. EHP anticipates developing models for forecasting the risk of malaria epidemics in Eritrea during EHP Year 4.
2.	Tools to promote the use of cross-sectoral surveillance <i>developed</i> , in partnership with other international organizations.	Number of tools developed for promoting the use of cross-sectoral surveillance.	EHP has developed three tools for promoting cross-sectoral surveillance: 1. Activity reports on risk stratification (Eritrea, Nepal) 2. Activity report and journal articles on vector studies (Eritrea) 3. Activity report on a malaria prevalence survey (Eritrea)
3.	Cross-sectoral surveillance tools developed under result #2 <i>used</i> by EHP to promote cross-sectoral surveillance as part of official MOH policy in three USAID-assisted PHN countries.	Number of countries in which cross-sectoral surveillance methods have been promoted.	EHP has promoted cross-sectoral surveillance in three countries: 1. Eritrea (Eritrea has incorporated entomological and meteorological monitoring into procedures for the malaria surveillance network.) 2. Mozambique 3. Nepal.

Environmental Change and Health Outcomes/Integrated Vector Management

#	Result	Indicator	Progress to Date
4.	Effectiveness of IVM interventions determined and appropriate settings for each <i>identified</i> , with an emphasis on controlling malaria in Africa using community-based approaches.	Number of tests and evaluations supported by EHP.	EHP has supported two tests of a malaria vector control intervention, both in Eritrea: 1. Efficacy of <i>Bacillus thuringiensis israelensis (Bti)</i> and <i>Bacillus sphaericus (Bs)</i> 2. Pilot larval control programs in 4 villages using <i>Bti</i> and <i>Bs</i> . A new trial of larval control methods for malaria vectors will be started in Uganda in EHP Year 4.
5	IVM approaches appropriate for malaria in urban and rural settings in Africa <i>developed</i> , in partnership with other international organizations.	Number of settings for which IVM approaches have been developed.	EHP has identified integrated vector management control approaches appropriate to six different settings in Africa. These have been incorporated into draft IVM guidelines being developed in collaboration with WHO/AFRO.
6.	The use of IVM approaches as part of official national malaria control plans and procedures <i>promoted</i> , in collaboration with other major international organizations.	Number of countries in which EHP has promoted the use of IVM approaches.	EHP has promoted the use of integrated vector management approaches in one country (Eritrea), and regionally in Africa in collaboration with WHO/AFRO. EHP anticipates starting activities to test and promote IVM in Uganda and Zambia in EHP Year 4.

Environmental Change and Health Outcomes/Integrated Programs

#	Result	Indicator	Progress to Date
1.	Potential for scaling up integrated health, population, and environment programs in rural settings along environmental corridors in Madagascar <i>evaluated, documented, and disseminated.</i>	Integrated health-population-environment evaluation approach developed, tested, applied, and disseminated.	Four-year activity well underway in Madagascar. Evaluation will take place in Year 5.

Chapter 2. Achievements to Date

Chapter 2 presents achievements to date related to Tasks 3 and 4 (CESH and ECHO). The achievements report on the project's highest level of monitoring results. Achievements are summarized in three categories: effectiveness, innovation and partnerships/leverage.

Effectiveness: Effectiveness is measured through changes in key indicators related to diarrhea and malaria prevention. This may include, for example, access to water and sanitation, hygiene behaviors such as handwashing and feces disposal or the efficacy and effectiveness of larvicides to control malaria vectors.

Innovation: Achievements related to innovation highlight how EHP has advanced the state-of-the-art in hygiene improvement or in control of malaria and other vector-borne diseases. Examples include the development of tools and new approaches to implement activities under EHP's core tasks.

Partnerships/Leverage: Much of EHP's work is done in collaboration with international and local partner organizations, including PVOs and NGOs. Describing when, where and with whom such partnerships occur and how they foster EHP's technical agenda is an important function of the M&E Plan. In this context it is also important to note whether resources from USAID Missions and partner organizations are mobilized to support the technical agenda or specific activities and products. Leveraging USAID Mission funding is also an indication how much demand there is for EHP's services and products.

The achievements are reported cumulatively, to better capture the results of activities that span multiple years.

CESH Achievements to Date

CESH Result: Improved environmental health interventions for reducing childhood mortality and morbidity from diarrheal disease, malaria, and other vector-borne diseases implemented at community and household levels and taken to scale at the national level using innovative, proven methods.

Under this core activity (CESH), EHP focuses on diarrhea prevention through hygiene improvement.

Effectiveness: Achievements relate to effectiveness of tools and field approaches

- **Benin:** From 1999 through 2001, EHP worked with USAID/Benin to optimize decentralized decision-making related to diarrheal disease prevention in selected medium-sized towns in Benin. Additionally, participatory community health communication (PCHC) ensured proper use of the latrines in the communities (e.g., as high as over 7,000 users in Sinende) and led to improved hygiene behavior such as hand washing after latrine use, covering food, covering water jars and increased general cleanliness of the environment. There was also coalition building between local government, civil society and communities that led to an increase in participatory decision making and solution finding related to health problems.
- **Nicaragua:** In October 1998, Hurricane Mitch left unprecedented destruction through the heart of Central America, leaving thousands dead and billions of dollars in damage. To protect the health of families affected by Mitch, USAID allocated nearly \$9.8 million for water and sanitation improvements over a 28-month period (1999–2001) to assist rural communities in Nicaragua. EHP and its partners reached an estimated 215,000 beneficiaries in 289 rural communities, within 43 municipalities in nine departments spread across northern Nicaragua. Program outputs included: 2,692 water supply systems, 7,226 household latrines, 295 boreholes, and water and sanitation to services 40 health clinics. In addition, all hygiene behavior change targets were achieved. The PVO partners have documented increases in improved hygiene practices such as correct handwashing (from 53% to 86%) and for safe excreta disposal (from 62% to 85%). A reduction in diarrhea prevalence from 20% to 12% in children under five also occurred.
- **Dominican Republic:** In response to the devastation of Hurricane Georges in the Dominican Republic, USAID brought together the government's rural water supply authority with the NGO community to replace infrastructure and improve hygiene behaviors for diarrhea prevention in impacted communities. After a five month period of activities in pilot communities, a quick assessment showed positive changes: handwashing with soap increased from 63% to 75 %, water storage was improved from 41% to 92% in all households, and there was a substantial increase in access to hygienic latrines by children and adults.

- **DR Congo:** During 2000–2001, the USAID Mission to the Democratic Republic of Congo supported an urban environmental health project, which focused on diarrheal disease prevention in urban markets. In less than a year, high levels of participation (60%–80%) in education sessions by food vendors and restaurant managers resulted in an improvement of knowledge and key hygiene behaviors by 10% or more; unhygienic practices such as foods unprotected from dirt and insects decreased from 55.9% to 40.2%; knowledge of five steps in proper handwashing by market clients increased from 14.6% to 33.2%; and execution of five steps in proper handwashing by vendors increased from 38.0% to 47.6%.

Innovation: Achievements relate to development of tools, methods and innovative approaches.

- **Disposal of children's excreta:** A literature review on safe disposal of children's excreta is being carried out by the International Institute for Nutrition in Peru.
- **Utilization of electronic conference technologies:** An e-conference on disposal of children's excreta and its impact on diarrheal disease prevention was organized by the Information Center; the results created a database of professionals for collaboration and information sharing and provided relevant background information for operations research on safe excreta disposal. EHP also co-chaired an e-conference related to targets, indicators, monitoring and evaluation of water, sanitation and hygiene programs.
- **Sanitation policy assessment guidelines:** A tool for assessing national sanitation policy was developed. Two reports related to sanitation, “Guidelines for the assessment of national sanitation policies,” and “Improving sanitation in small towns in Latin America and the Caribbean” have been published.
- **Community approach to sanitation and hygiene:** In Benin, in the Borgou department (population 414,000), families' access to basic sanitation was increased and their hygiene practices were improved through implementation of 45 micro-projects carried out by neighborhood groups.
- **Diarrheal disease prevention in child health programs:** In Nicaragua and the Dominican Republic, a diarrheal disease prevention module was incorporated by PAHO for its C-IMCI program; the module is slated for adoption by PVOs in Peru.
- **Hygiene-improvement framework:** A framework for understanding the essential elements of hygiene improvement as an integrated approach for diarrheal disease prevention (applying water and sanitation technologies, creating an enabling environment, and promoting appropriate hygiene practices) was developed. The concept has been used by UNICEF.
- **Quantitative hygiene-improvement assessment tool:** Baseline assessment tool and guidelines for hygiene improvement activities were developed and

implemented in Gaza-West Bank, Nicaragua, Dominican Republic and the DR Congo.

- **Behavior-change training course:** A full set of program design materials and products for behavior change communication were developed in the Dominican Republic, compiled, and translated into English. These materials are being used by local NGOs and PVOs in the Hato Major region and in Nicaragua and Peru.
- **Development and improvement of indicators:** Consensus indicators for hygiene improvement and a survey instrument were developed for WSSCC in collaboration with the LSHTM and the IRC; indicators for WHO C-IMCI programs were proposed; hygiene improvement indicators were used in the KPC 2000 instrument revised with the CORE Group.

Partnerships/Leveraging: Achievements describe when, where and with whom partnerships occur and how they foster CESH's agenda.

- **Partners for environmental sanitation policy:** Partnerships were forged among UNICEF, WSSCC, WEDC, WELL II, WHO, PAHO, USAID, IRC, SANDEC, and the World Bank for input to sanitation policy guidelines.
- **University of Kinshasa School of Public Health:** Three urban environmental health pilot projects focused on diarrheal disease prevention (toilets, showers, water storage, water points, etc. and hygiene education) were carried out in seven Kinshasa markets.
- **Public-Private Partnership for Handwashing Initiative:** A public-private partnership of international organizations including the World Bank, UNICEF, USAID, EHP, and multinational and national soap manufacturers launched in 2001 a global partnership for the promotion of handwashing with soap in five countries: India, Ghana, Nepal, Peru, and Senegal. This global partnership is based on a successful initiative led by EHP and BASICS from 1996 to 1999 in five Central American countries. Under EHP II, EHP, BASICS, UNICEF, and the World Bank collaborated extensively on documenting the process and the results of the Central American experience. This documentation has been widely disseminated and highlighted internationally and has contributed to greater interest in replicating this model of public private collaboration.
- **Forum for information-sharing among PVOs:** Knowledge, experiences, and insights to improve the implementation, impact, and sustainability of their project activities were shared by PVOs involved in a rural water, sanitation, and health reconstruction project in Nicaragua in 2000; the forum resulted in increased coordination and partnership among the PVOs and with the government of Nicaragua.
- **Interactive information-exchange network:** A network of 120 professionals in hygiene was established by the Information Center. The network provides a forum

for dialogue and partnerships between field practitioners and researchers. E-bulletins on hygiene are disseminated bi-weekly to network members by the Information Center.

- **Improved collaboration with PVOs:** Formalized, field-oriented activities were initiated with PVOs to further CESH goals, as follows: grants to PVOs, including ADRA, Save the Children, CARE, Plan, Red Cross, Action Against Hunger related to Nicaragua water and sanitation rehabilitation; training for local NGOs involved in a Catholic Relief Services community-level hygiene behavior change program; monitoring and evaluation plan for urban environmental health and behavior-change for CARE in Peru; collaboration with Action against Hunger and the International Rescue Committee in an urban environmental health program in the Democratic Republic of Congo (see above); urban health planning with Counterpart International for Ahmedabad, India; collaboration with Interchurch Medical Assistance (IMA) and Eglise du Christ au Congo (ECC) in DR Congo on water supply and sanitation component of rural health project.
- **Partnerships to develop and promote C-IMCI:** EHP, with the CORE Group's C-IMCI working group and BASICS, prepared a workshop to be held in PY4 on C-IMCI in the Latin American region; EHP technical assistance led the preparation of the agenda and selection of case studies for the workshop; In collaboration with PAHO, Ministries of Health, and PVO and NGO partners, EHP launched a behavior change for hygiene improvement activity in Peru and Nicaragua for the development of training and materials to NGO partners; EHP participated and made presentations in WHO/UNICEF sponsored Inter-Agency Working Group meetings on C-IMCI.
- **Hygiene improvement monitoring:** Hygiene improvement monitoring at the international level was strengthened through collaboration with MEASURE DHS+, the CORE Group, and the WHO-UNICEF Joint Monitoring Program.
- **Monitoring and evaluation of water, sanitation, and hygiene behaviors:** A policy meeting on monitoring and evaluation in December 2001 in Delft, Netherlands, was supported; results: 15 professionals from WHO, UNICEF, WELL, LSHTM, IRC reached consensus on establishing a monitoring network to advance the state of the art in monitoring.

ECHO/XS Achievements to Date

ECHO/XS Result: Methods for cross-sectoral surveillance (i.e., collection and integrated analysis of epidemiological, environmental, and demographic data) developed, promoted, and adopted by national control programs for malaria and other infectious diseases of major public health importance.

Innovation: Achievements relate to development of tools, methods and innovative approaches.

- **Refinement and development of XS methods:** concept of XS was refined to include risk stratification, epidemic risk forecasting, and data collection and analysis for evaluating vector-control interventions.
- **Data collection and analysis methods:** Methods have been tested in Eritrea, Mozambique, and Nepal for data collection (entomological and epidemiological studies; meteorological monitoring; compilation of historical records for malaria cases and control interventions; and qualitative KAP studies) and integrated analysis (malaria risk stratification, baseline assessment of risk factors for kala-azar).
- **Sentinel surveillance systems and capacity building:** EHP is supporting development of sentinel surveillance systems in Eritrea, Nepal, and South Asia. Control programs in Nepal, Eritrea, and Mozambique have increased their capacity to carry out surveillance and to use data in decision making, through the use of mapping and other tools.
- **Operational research studies:** four studies have improved the information base for strengthening program operations in Eritrea (national survey of malaria vector distribution; longitudinal study of mosquito vector behavior and larval ecology; national survey of malaria parasite prevalence; and efficacy trials for bacterial larvicides).
- **Kala-azar prevention in Nepal:** interventions for the prevention and control of kala-azar and malaria were carried out in two districts and are slated for replication in other endemic regions

Partnerships/Leveraging: Achievements describe when, where and with whom partnerships occur and how they foster the ECHO/XS agenda.

- **Collaboration with WHO/AFRO:** EHP supported WHO/AFRO in formation of the African Network for Vector Resistance, to develop a cadre of MOH personnel capable of using WHO's insecticide susceptibility assays to monitor vector resistance to insecticides.
- **BBIN Network:** the Bangladesh, Bhutan, India and Nepal Network for vector-borne disease cross-border initiatives was created; activities included

establishment of a Malaria Drug Resistance Surveillance Network Secretariat for BBIN in Nepal, preparation of an inventory of malaria drug resistance in BBIN, creation of a BBIN web site, a workshop on standardization of cross-border surveillance of priority vector-borne diseases, and information sharing on kala-azar between Nepal (Dhanusha and Mahottari districts) and India (Bihar state).

- **Interactive information-exchange networks:** a network of 600 malaria experts was created and developed by IC as a forum for dialogue among researchers and field practitioners.

ECHO/IVM Achievements to Date

ECHO/IVM Result: The effectiveness of vector-control methods for particular settings in Africa determined, appropriate strategies for integrated vector management developed, and their use promoted.

Innovation: Achievements relate to development of tools, methods and innovative approaches.

- **Larval control methods for African malaria vector.** EHP is conducting field studies and leading an international collaboration to determine the settings in which larval control methods are a cost-effective intervention for reducing malaria transmission in Africa: performed field trials in Eritrea; characterized larval sites in Maputo, Mozambique; organized an international symposium in Kampala, Uganda; established an agreement to perform field trials in Uganda starting in EHP Year 4.
- **Guidelines for Integrated Vector Management.** Collaborating with WHO/AFRO to develop IVM guidelines; formed a technical working group on community-based malaria vector management and prepared a background document on malaria vector control methods; identified vector control methods appropriate to six distinct ecological settings in Africa.

Partnerships/Leveraging: Achievements describe when, where and with whom partnerships occur and how they foster the ECHO/IVM agenda.

- **WHO/AFRO:** IVM guidelines were drafted for use by WHO/AFRO, in collaboration with the London School of Hygiene and Tropical Medicine.
- **Roll Back Malaria:** a vector-control needs assessment protocol was prepared for use in developing recommendations for reducing the use of DDT in several African countries and for possible adoption as part of the RBM situation analysis process.
- **WHO/AFRO:** case studies were funded in Uganda, Zimbabwe, Cameroon, and Senegal in support of a regional consultative meeting in Harare, Zimbabwe, to

develop a strategy for strengthening the capacity of national ministries of health in vector ecology and control in Africa.

- **CGIAR SIMA:** organizational meetings for CGIAR SIMA for East and Southern Africa and West and Central Africa were supported.
- **Collaboration with PVOs:** training was given in malaria prevention and control, operations research, and design of community-based activities for the prevention and control of kala-azar, Japanese encephalitis, and malaria with CARE, the Asia Foundation, and the Canadian Center for International studies; and the November 2001 meeting in Kenya for African PVO malaria control programs managers was supported.

ECHO/IP Achievements to Date

ECHO/IP Result: Lessons learned in integrating field activities in community-based natural resource management and population and health in Madagascar designed, evaluated, and disseminated.

Effectiveness: Achievements relate to effectiveness of tools and field approaches

- Under subcontract to EHP, the National Institute of Statistics (DDSS/INSTAT) conducted a baseline survey in March/April 2001. Overall, communities targeted for H-P-E integration face poor outcomes in all three areas: only one in seven households produces sufficient food; almost half of all children under five are chronically malnourished (stunted); deleterious slash and burn practices are admitted by over half of all households; contraceptive prevalence rate of 9% for modern methods is low; the vast majority of households do not have access to safe water and appropriate sanitation; and less than 40% of children under five years are fully vaccinated. A major gap exists between knowledge and actual practice. Important barriers to appropriate health, population and environmental behaviors seem to be related to household income and technical competency. Progress will be measured through a follow up survey in 2003-2004. Currently the program works through NGOS in 120 communities reaching approximately 50,000 people.

Innovation: Achievements relate to development of tools, methods and innovative approaches.

- **Pilot program on integrated health, population, and environment approach:** integrated approaches to improve health, reduce pressure on natural resources, and increase income were used by NGOs in four environmental corridors in a pilot program designed to test the concept; systems for monitoring these program and lessons-learned mechanisms were put in place. Voahary Salama partners including EHP have developed and implemented key social marketing and capacity-building approaches and materials for integrating activities at the community and program levels. The key approaches include champion communities, child-to-child education and farmer-to-farmer education. This effort also has included capacity-building of NGO partners to conduct these activities in target communities. These approaches are promoted through three issues of the Voahary Salama Gazety on tree nursery, reforestation and vegetable gardens.

Partnerships/Leveraging: Achievements describe when, where and with whom partnerships occur and how they foster the ECHO/IP agenda.

- **Voahary Salama Association—a partnership between local NGOs, USAID projects, and private foundations:** EHP has been instrumental in developing a partnership of 24 organizations in Madagascar committed to integration of health, population and environment. Voahary Salama (VS) is now a legally registered Malagasy association with the basis to attract funds and become a sustainable

organization. The partnership approach in Madagascar has tripled programming resources.

Chapter 3. Year 3 Activity Highlights

Task Order 1

Task 1: Work Plan

Introduction: Task 1 under Task Order 1 provides for the development of annual work plans.

Overview: A yearly work plan is a deliverable under EHP's contract with USAID. The Year 4 (July 1, 2002–June 30, 2003) work plan was EHP's fourth submission to USAID.

Achievements

- Followed the regular steps and schedule for preparation of the Year 4 work plan: pre-planning and information gathering (April 2002), reaching agreement on the outline and content (May) and preparation of draft and submission to USAID (June).
- Submitted Year 3 work plan in its final version to USAID on July 10, 2001, and received approval two weeks later.

Task 2: Lessons Learned and Policy

Introduction: Task 2 includes a range of activities designed to influence policy, develop partnerships, provide quality management for EHP, and capture and disseminate lessons learned.

Overview: Activities are organized under five headings:

- *Performance monitoring:* to ensure that management and evaluation plans are developed for all EHP programs, that systems are in place to track activities and that appropriate reviews and progress monitoring take place.
- *Indicators:* to improve the validity and reliability of existing water, sanitation and hygiene indicators and data-collection methods and to develop new ones when necessary.
- *Policy meetings and reports:* to participate in at least six major international environmental health meetings, conferences, or workshops, including playing a major role in organizing two such meetings, in order to promote environmental health as a component of other tools used for policy formulation.

- *Partnerships*: to develop specific collaborative activities with USAID cooperating agencies, United Nations and other international agencies, private and non-governmental organizations (PVOs and NGOs), and the USAID/Bureau of Humanitarian Response/ Private-Voluntary Cooperation (BHR/PVC).
- *Lessons learned*: to capture insights from EHP's experience and keep USAID up-to-date on the project's progress.

Naturally, many activities under these headings overlap with CESH or ECHO activities.

Achievements—Performance Monitoring

- Drafted the EHP Monitoring and Evaluation Plan and submitted it to USAID for review and comment.
- Reviewed scopes of work and detailed activity plans for Benin, the Democratic Republic of the Congo, the Dominican Republic, Eritrea, India, Nepal, Nicaragua and Peru and for EHP core activities.
- Provided technical reviews and activity support on malaria surveillance in Eritrea: design of efficacy and effectiveness trials of vector-control methods; GIS for cross-sectoral surveillance; EWARS in Nepal; socioeconomic differences in health, nutrition and population indicators in Gujarat State, India; the baseline survey and monitoring system in Madagascar; monitoring latrine use in Benin; the West Bank environmental health assessment; and collection of data on the health of the urban poor.

Achievements—Indicators

- Submitted abstracts to annual meetings in 2002: American Public Health Association (APHA), Ecosystems and Health, etc.
- Assisted Johns Hopkins University and the MACRO/ MEASURE DHS+ project to prepare a water, sanitation, and hygiene module for the 2001 Nicaragua DHS.
- Established the Water Supply and Sanitation Monitoring Task Force, whose task it is to develop indicators and instruments to monitor Vision 21 targets, in collaboration with the IRC and with the participation of the WSSCC, WHO, UNICEF, WELL, LSHTM and CINARA.
- Drafted household and school survey instruments to monitor Vision 21 targets.
- Developed a water, sanitation, and hygiene module for a rapid health facility assessment for CORE's Monitoring and Evaluation Working Group.

- Drafted an assessment and planning instrument based on the hygiene improvement framework.
- Produced a state-of-the-art environmental health survey instrument.

Achievements—Policy Meetings and Reports

- Submitted abstracts on activities in five countries (the Democratic Republic of the Congo, Madagascar, Nepal, Nicaragua and the West Bank) to the Global Health Council Annual Conference in May 2002 and facilitated presentations.
- Published and disseminated documents on the 1995–1999 Central American Hand Washing Initiative, a joint effort of EHP and the BASICS project to promote private-sector participation in the promotion of handwashing with soap: (1) a detailed report on key steps, critical success factors, and lessons learned; (2) a brochure designed for advocacy; and (3) a CD-ROM of the reports and back-up documentation.
- Convened a meeting of key USAID and NGO nutrition experts to discuss the role of hygiene in food security and nutrition programs. Identified next steps for the development of a policy paper to be pursued in Year 4.
- Prepared a brief one-page document to explore interest in the role of hygiene in HIV/AIDS programs to be distributed among USAID and other partners as a method of gauging interest on exploring the topic further.
- Prepared a section for the Global Health/HIDN Office’s Nutrition Operational Plan on hygiene and nutrition programs.
- Performed preliminary information collection and analysis of funding by the U.S. government of water and sanitation components in foreign aid programs to be continued in Year 4 as part of preparations for the World Summit on Sustainable Development and follow up.

Achievements—Partnerships

- Maintained regular contact with and carried out joint activities with the following partner organizations:
 - World Bank
 - UNICEF
 - WHO
 - PAHO
 - CORE Group

- U.S. Coalition for Child Survival
- Local PVOs and NGOs
- Participated in and helped organize the November 2001 meeting of the Global Public-Private Partnership in Hand Washing Initiative (EHP, BASICS, USAID, the World Bank, LSHTM, and UNICEF) to develop a consensus and operational guidelines.
- Supported and participated in the Fresh Air meeting on malaria with CORE’s Malaria Working Group in Kenya in November 2001, issued the proceedings on CD-ROM, and attended a later follow-up meeting to discuss next steps for developing a proposal for funding malaria activities through PVOs.
- Began collaborating with CORE’s Working Group on IMCI on plans for a PVO workshop on the multi-sectoral platform approach to C-IMCI in early 2003 and preparation of a state-of-the-art paper for discussion prior to the workshop.
- Participated in USAID’s Bureau for Global Health Working Group on C-IMCI (also referred to as Working Group on the Request for Mission Partnership or FRMP); participated in the development of action plans for pursuing partnership with Nicaragua for the RFMP.
- Participated in the Inter-Agency Working Group on C-IMCI based at WHO in Geneva.
- Reviewed four PVO detailed implementation plans for the Child Survival Grants program: PLAN for Nepal and Mali, PSI for Haiti, and MCDI for South Africa.

Achievements—Lessons Learned

- Held regular meetings (weekly—senior management, project management and USAID Office of Health staff, and project management team; monthly—entire staff monthly; and ad hoc meetings of EHP staff with USAID staff) and used email and e-rooms to provide and receive information.

Task 3: Community-Based Environmental Sanitation and Hygiene (CESH)

Introduction: CESH is one of two broad core areas of EHP. It consists of developing, using and disseminating tools that help NGO and government program managers and communities identify local environmental health priority conditions and behaviors and guide selection and evaluation of actions to reduce the incidence of diarrhea in children under five years of age.

Overview: CESH consists of four subtasks:

- *Operations research*: to address key questions related to environmental interventions for diarrheal disease prevention in community-based environmental sanitation and hygiene programs.
- *Sanitation policy tools*: to develop tools (presentations, guidelines, policy workshops, etc.) to assist in the promotion of safe disposal of excreta as national policy and apply them in three USAID-assisted countries.
- *Hygiene improvement tools*: to develop tools that help NGO and government program managers and communities carry out effective diarrheal disease prevention activities and programs.
- *Field application*: to apply the programmatic tools in at least three PHN countries.

Achievements—Operations Research

- Facilitated an information-exchange network on the Internet to document the current state of knowledge of safe disposal of children’s excreta and made the results available on the EHP web site.
- Contracted with the International Institute for Nutrition in Peru to carry out operations research on the safe disposal of children’s excreta and monitored its completion of a literature review.

Achievements—Sanitation Policy Tools

- Produced three reports to the file with findings from Peru, Uganda, and South Africa that will inform the development of policy assessment guidelines.
- Completed and disseminated the assessment guidelines for national sanitation policies and began looking for a place to apply them..
- Held a working meeting in mid-March 2002 with international partners—UNICEF, WSSCC, WEDC, WELL II, WHO, PAHO, USAID, IRC, SANDEC, and the World Bank—to review the draft guidelines.

Achievements—Hygiene Improvement

- Developed an instrument on gathering baseline data on diarrheal disease prevention. The instrument was prepared by the University of Kinshasa School of Public Health under contract to EHP to do baseline assessments of three urban environmental projects in the Democratic Republic of the Congo.
- Developed and translated into English a training course on hygiene behavior change for diarrheal disease prevention. This was developed in the Dominican Republic and includes the full set of course materials and products.

- Worked in partnership with PAHO/Washington to develop a module on diarrheal disease prevention for PAHO's C-IMCI programs in Nicaragua and Peru.
- Submitted for publication an article on EHP's hygiene improvement framework to two periodicals, Waterfront and Global HealthLink, a publication of the Global Health Council for the U. N. Special Session on Children.
- Initiated the drafting of an advocacy document for diarrheal disease prevention based on the Hygiene Improvement Framework.
- Conducted an e-conference on the hygiene improvement framework as part of the Virtual Water Forum of the WSSCC and posted a summary on the EHP web site.
- Published the final report of the Bangladesh Sanitation and Family Education (SAFE) Project jointly with CARE Bangladesh and ICDDR,B: Prevention of Diarrhea Through Hygiene Behaviors: The Sanitation and Family Education (SAFE) Pilot Project Experience.
- Compiled a list of survey questionnaires to be used as a basis and HIQAT.
- Reached agreement on roles and responsibilities for strategic communications planning in Nicaragua in November 2002 with Johns Hopkins CCP.
- Initiated work to draft a behavior-change training guide for programmers.

Achievements—Field Application of Tools

- Participated on a team to derive lessons learned from three urban environmental health activities in the Democratic Republic of the Congo (see field activities below).
- Supported a long-term partnership with SANRU III in the Democratic Republic of the Congo (see field activities below).
- Launched an urban health program for India (see field activities below).
- Began providing support to maintain the presence of the hygiene behavior change specialist in Nicaragua for six months as part of the staff of the local umbrella NGO after the termination of the Nicaragua water, sanitation and hygiene program.
- Identified potential for CESH involvement in Ghana and/or Mali as part of the USAID Global Development Alliance.

CESH Field Activities

Benin: GESCOME II

Overview: GESCOME II is the continuation of GESCOME I, an EHP I activity, which ran from 1997–1999. Benin program activities consisted of refining EHP’s community-based approach, applying it in the field, conducting operations research and scale-up activities, and promoting environmental sanitation policies. Project activities were essentially completed May 1, 2001. However, lessons learned activities were carried out and will continue under a new scope of work.

Achievements

- Planned lessons-learned activities consisting of a final report, on-site observations of latrine use and handwashing among project beneficiaries, monitoring uncompleted micro-projects, and a lessons-learned report.
- Drafted lessons learned document and submitted it for review.

LAC: Hygiene Promotion

Overview: In collaboration with PAHO, Ministries of Health, and PVO and NGO partners, USAID launched a behavior change for hygiene improvement activity in two countries in LAC: Nicaragua and Peru. EHP will provide assistance in training and materials development to NGO partners working in districts with a high incidence of diarrheal disease. The activity highlights to expanding focus on IMCI from a facility-based approach to one that is community-based (C-IMCI) with an emphasis on community and household practices and preventative behaviors. The strategy is modeled after the successful approach in the Dominican Republic to develop and field test a C-IMCI module integrating hygiene behavior change into existing C-IMCI modules in diarrheal disease prevention.

Achievements

- Identified local NGO and PVO partners, selected sites, developed work plans, and carried out start-up visits jointly with PAHO/Nicaragua and PAHO/Peru.

Peru: Urban Environmental Health Services and Hygiene Behavior

Overview: The purpose of this activity is to reduce health risks associated with exposure to locally generated contaminants and pathogens in peri-urban residential neighborhoods and communities through four types of interventions: (1) helping Peruvian agencies with environmental health responsibilities to improve their policies; (2) carrying out pilot projects to demonstrate innovative ways of addressing environmental health needs; (3) providing technical assistance, training and local institutional strengthening; and (4) developing capacity in environmental health risk

monitoring. EHP provides support to DIGESA and to the implementing PVOs and local authorities.

Achievements

- Launched a program of technical assistance and procurement support to DIGESA, project NGOs and local authorities.
- Provided technical assistance to DIGESA for the development of a performance monitoring plan and a work plan for FY 2002–2003.
- Presented two team-building workshops to members of DIGESA and CARE.
- Presented a management-training workshop for senior DIGESA staff members.
- Assisted DIGESA to develop an environmental health surveillance system.

Democratic Republic of the Congo (DRC): Technical assistance to SANRU III

Overview: EHP is assisting the SANRU III project in implementing the water supply and sanitation component. SANRU III is a five-year \$25 million rural health project, which includes a wide range of primary health care interventions and operates in 63 of 300 health zones. The goal of EHP assistance is to strengthen the management capacity of zonal water and sanitation coordinators for carrying out hygiene behavior change programs that will bring about a decrease in diarrheal disease incidence.

Achievements

- Developed a comprehensive training plan for the zonal water and sanitation coordinators.
- Reconstituted the national training team for water supply and sanitation.
- Assisted SANRU consultants to develop training materials for use by the national training team.
- Conducted a training-of-trainers workshop in April 2002 for twelve members of the national training team.
- Identified a hygiene promotion consultant to develop a two-year program of EHP assistance to SANRU in sanitation and hygiene and to work in the field beginning at the end of June 2002.

Democratic Republic of the Congo: Support to Urban Environmental Health Activities

Overview: In response to deteriorated urban environmental conditions in the country, USAID/DRC joined with the USAID Regional Urban Development Office based in Johannesburg, South Africa, to support the development of an urban environmental health strategy and implementation of pilot field activities. The strategy integrates community participation, behavior change, decentralization, support to environmental sanitation microenterprise projects, and education and training to address both short- and long-term health threats. It is expected that short-term pilot projects—three of which were implemented under this activity—will lead to the design of longer-term interventions.

Achievements

- Completed three pilot projects begun in 2000: (1) market sanitation and hygiene in Kinshasha; (2) water, sanitation, and hygiene in Kananga; and (3) a community-based environmental health program in Kinshasha.
- Carried out impact evaluations of the projects and found significant impact on health-related behaviors.
- Conducted a lessons-learned exercise to identify key elements of pilot activities that should be part of a long-term strategy.

India: Child Health and Nutrition among the Urban Poor

Overview: In November 2000, a team of child survival and nutrition specialists from Washington, DC, and Delhi outlined how a modest level of resources could be invested in India to achieve one of USAID/India's strategic objectives: improved child survival and nutrition in selected areas of India. The team recommended that improved child health and nutrition among the urban poor in selected cities be one of four intermediate results for the strategic objective. Subsequently, in June and July 2001, EHP developed an approach, strategy and work plan for an urban health program in support of the intermediate result and, in January 2002, developed a draft action plan for a five-year urban slum child health program. The USAID RUDO Program Officer, the USAID Child Survival Advisor, and the newly hired EHP urban health program director, as well as the directors of the USAID/India PHN and RUDO offices, contributed to the development of the plan.

Achievements

- Established an EHP/India office in Delhi and hired personnel, including a local urban health program director.

- Began initial program activities: reprogramming visits to Indore and Jamshedpur, a stakeholder meeting to initiate the program in Indore, and recruitment of city-based coordinators and consultants.
- Completed two strategy reports in the process of designing the activity: “A Strategic Approach for USAID’s Investments to Improve Child Health and Nutrition in India, March 2001,” “Improving Health of the Urban Poor Living in Slums in India, Strategy for U.S. Investment—7 June 2001.”

ANE: Urban Health Initiative

Overview: The urban population in the Asia/ Near East (ANE) region is expected to increase dramatically, from 1.2 billion in 1995 to 2.5 billion in 2025, with more than 400 million residing in cities of ten million or more. The region is characterized by high infant and child and maternal mortality, low female literacy, low status of women, high rates of malnutrition, and the rapid spread of HIV/AIDS. Concerned 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, USAID’s ANE Region PHN Team Leader developed a three-phase urban health activity that EHP will implement. The purpose of the activity is to persuade PHN officers in USAID’s ANE missions to direct resources toward programs designed to meet the health needs of the urban poor, by assessing the state of current knowledge of urban slum populations, by contributing to that knowledge through on-the-ground research on this population’s existing health needs, and by offering practical guidelines for urban slum health program development and implementation.

Accomplishments

- Carried out a desktop literature review of child health status and determinants and published it as an activity report: Activity Report 109: *Health of Children Living in Urban Slums in Asia and the Near East: Review of Existing Literature and Data*.
- Developed a scope of work for an in-depth slum study in Egypt and discussed how to proceed with the USAID mission.

Ghana: Urban Health Assessment

Overview: USAID/Washington’s EGAT/Urban Programs office and the USAID/Ghana Mission asked EHP to carry out an assessment of the health needs of the urban poor in Ghana and provide a road map for future mission interventions. The assessment is to include a desktop study with original interviews both in Ghana and in the United States. Targeted cities are Accra and Kumasi. The idea for the assessment grew out of a visit to Ghana by staff from USAID/EGAT/UP and the EHP CTO. The assessment information will be used to feed into the development of the mission’s country health program strategy.

Accomplishments

- Recruited a team of U.S.-based and Ghanaian consultants with health backgrounds to assess areas of maternal/child health and to focus on environmental health issues.
- Held a team planning meeting for the U.S. based team, with provisions for continuing the planning process in Ghana to bring the Ghanaian colleagues onto the team.

Task 4: Environmental Change and Health Outcomes (ECHO)

Introduction: ECHO, Task 4 of Task Order #1, is divided into two parts. Task 4A covers EHP support for the control of malaria and other vector-borne diseases, including core-funded initiatives on cross-sectoral surveillance (XS) and integrated vector management (IVM), field activities in Eritrea, Nepal, Mozambique, and Uganda, and a regional activity in South Asia. Task 4B covers integrated health-environment programs (IP), which EHP is supporting in Madagascar.

Task 4A. EHP Support for the Control of Malaria and Other Vector-Borne Diseases

Core Programs

Cross-Sectoral Surveillance (ECHO/XS)

Overview: ECHO/XS activities are designed to develop methods for performing the integrated analysis of epidemiological, environmental, demographic, and other data to improve the prevention and control of malaria and other vector-borne diseases. Work under this task consists of: (1) developing and testing methods for cross-sectoral surveillance; (2) creating tools to promote cross-sectoral surveillance as national policy and applying them in three PHN countries; and (3) institutionalizing cross-sectoral surveillance approaches in three PHN countries. Most of the work under this program is conducted in the context of field activities.

Achievements

- Carried out data collection and analysis fieldwork in Eritrea and Mozambique to support design of malaria prevention strategies. In Eritrea, supported studies of malaria vector distribution, biting patterns, larval ecology, and parasite prevalence; identified five ecological strata of malaria risk; and conducted efficacy trials for two bacterial larvicides, *Bacillus thuringiensis* (Bti) and *Bacillus sphaericus* (Bs). In Mozambique, identified high-risk neighborhoods for malaria in Maputo and conducted larval surveys.

- Continued to support the development of sentinel surveillance systems in Eritrea (malaria), Nepal (six diseases), and South Asia (antimalarial drug resistance, kala azar, and Japanese encephalitis).
- In Nepal, completed analysis of baseline data on the distribution of and risk factors for kala-azar, malaria, and Japanese encephalitis.
- Clarified the scope of the XS program to include risk stratification, epidemic forecasting, and routine (in-season) surveillance; and established a mechanism for collaboration with the International Research Institute for Climate Prediction at Columbia University.

Integrated Vector Management (ECHO/IVM)

Overview: ECHO/IVM activities examine the effectiveness of malaria vector control interventions, to identify the particular ecological settings in which they are most likely to be effective in urban and rural areas in Africa. The emphasis is on developing better tools for vector control, including promoting the use of environmental management and larval control, developing Integrated Vector Management strategies appropriate to particular settings, and promoting community participation in vector control programs. These goals are achieved through core and field activities.

Achievements

- Reached agreement with WHO/AFRO (Regional Office for Africa) on the outline and process for preparing IVM guidelines; held technical meeting in January 2002 in London on vector-control methods for IVM guidance; drafted the guidelines and gathered review comments from WHO/AFRO; and published EHP Activity Report 108: *A Review of Control Methods for African Malaria Vectors*.
- Supported the formation and operation of the African Network for Vector Resistance, which provides training in the use of WHO insecticide sensitivity assays and is gathering field monitoring data on vector resistance to insecticides.
- Organized an international symposium on the use of larval control methods for malaria in Africa, in association with the 23rd African Health Sciences Congress held in Kampala, April 2002. Established a basis for ongoing collaboration with African and European research groups for developing and demonstrating larval control methods for malaria vectors in a variety of ecological settings in Africa.
- Worked with the National Malaria Control Center in Zambia to identify needs for technical assistance in implementing the vector control component of its national strategy.
- Promoted IVM concepts in the context of providing technical support to CORE's Malaria Working Group for organizing the "Fresh Air" malaria workshop in

Nairobi, November 26–December 1, 2001; and as a contributor to a workshop in September 2001 on new and alternative insecticides for insecticide-treated mosquito nets and new tools and methods for targeted and selective vector control, sponsored by LSHTM's Gates Malaria Program and WHO.

- Supported an organizational meeting for the CGIAR System-wide Initiative on Malaria and Agriculture (SIMA) for West and Central Africa; solicited and reviewed grant proposals for work under this initiative.
- Initiated studies to characterize the egg-laying sites and options for controlling larvae of phlebotomine sand flies (kala-azar vector) in Nepal.
- Reached agreement on the scope and funding for a new activity to examine malaria transmission and vector control options in Kampala and Jinja, Uganda. The study is scheduled to begin in September 2002.

Field Activities

Eritrea: Technical Assistance to the National Malaria Control Program

Overview: EHP is providing technical assistance to the Eritrea Ministry of Health to support implementation of the National Malaria Control Program (NMCP), consistent with the NMCP's "Five Year Plan of Action for Malaria Control in the Context of Roll Back Malaria" established in 1999. EHP's support is helping the MOH strengthen its surveillance systems, operational research program, evidence-based decision making, and vector control program. This work is scheduled to continue through June 2003.

Achievements

- Completed vector behavior studies in Anseba, Debub, and Gash-Barka zones, covering three malaria transmission seasons from October 1999 to December 2001.
- Completed analysis of data and prepared draft reports of three surveys establishing critical baseline data for the malaria control program: *Malaria Vector Studies in Eritrea*; *National Survey of Malaria Parasite Prevalence in Eritrea, 2000–2001*; and *Malaria Risk Stratification in Eritrea*.
- Completed field studies to evaluate the efficacy of two bacterial larvicides, *Bacillus thuringiensis* (Bti) and *Bacillus sphaericus* (Bs), for control of *Anopheles* larvae. Tests were performed at three sites, using two application rates for each larvicide and temephos (a chemical larvicide) as the control.
- Supported studies of malaria vectors' susceptibility to insecticides in Gash-Barza zone, with applications of DDT, malathion, permethrin and temephos.

- Supported curriculum development and course presentation for a Ministry of Health training program for 35 public health technicians.
- Provided analytical support in preparation for the National Malaria Program Assessment Workshop in January 2002.
- Prepared standard protocols for entomological and meteorological monitoring at sentinel sites being developed for the NMCP.

Mozambique: Technical Assistance to the National Malaria Control Program

Overview: EHP provided support to the National Malaria Control Program in the Ministry of Health (MISAU) to improve malaria surveillance, build a capacity for using geographic information systems, and increase the understanding of malaria risk stratification in the capital city, Maputo. The project identified areas at high risk for malaria in Maputo, established and operated a system of sentinel sites for malaria surveillance, mapped the distribution of malaria cases in selected high-risk neighborhoods, and initiated a study to characterize mosquito breeding sites potentially affecting these neighborhoods. All of the information was intended for use by municipal health officials for targeting their indoor residual spraying program and evaluating the potential for use of larval control interventions, as well as for demonstrating to national program officials the benefits of collecting and using such information. The activity began in 1998 and was scheduled for completion early in Year 3, at which time the USAID mission considered, but decided against extending the activity under a new Task Order.

Achievements

- Collected case reports from a network of sentinel sites in Maputo to stratify malaria risk within urban and peri-urban neighborhoods. Prepared and delivered monthly maps showing the distribution of malaria cases in Maputo for approximately two years. Collected population data in two neighborhoods as a basis for calculating malaria incidence rates in high-risk areas. Consulted with the public health officer for Maputo to support her use of surveillance data in planning malaria prevention and control actions.
- Identified the most common types of larval habitats for anopheline mosquitoes and collected data on larval density at selected sites representative of these habitats, to identify potentially effective larval control methods and correlate the distribution of malaria cases to the location and productivity of mosquito breeding sites.

Uganda: Reducing Urban Malaria Transmission

Overview: Malaria is a critical health problem in Uganda and has a dramatic impact on the health status of Uganda's rural population. Recent data indicating that malaria is also a problem in the capital city Kampala are part of a growing body of evidence

that local malaria transmission is a problem in many African cities. This activity aims to identify areas in Kampala and Jinja, the two largest cities in Uganda, which are at high risk for malaria; identify and characterize *anopheline* breeding sites in these areas; and involve stakeholder groups (Ministry of Health, municipal government, and community organizations) in a participatory process for preparing an action plan to eliminate or manage productive breeding sites. The action plan will be developed in partnership with and fully accepted by the local governments. The ultimate result expected from implementation of the action plan will be a measurable reduction in malaria transmission in the intervention areas. The analysis and planning phase will run from September 2002–July 2003; the action plan will be implemented starting in July 2003.

Achievements

- Secured \$50,000 in funding from the Making Cities Work Matching Program to complement EHP core funding for the activity.
- Identified the key team members and began developing the scope of work.

Nepal: Program for the Prevention and Control of Selected Infectious Diseases

Overview: USAID Nepal’s Program for the Prevention and Control of Selected Infectious Diseases was initiated in 1998. One of the program components is surveillance and control of malaria, kala-azar and Japanese encephalitis in collaboration with the Ministry of Health and the VBDRTC in Hetauda. The project, which will continue through the end of the EHP contract period (June 2004), has five objectives:

- Strengthen the institutional capacity of the VBDRTC.
- Improve the national surveillance capability of the Ministry of Health.
- Improve the availability of information on malaria, kala-azar, and Japanese encephalitis.
- Develop and pilot test sustainable intervention strategies for the prevention and control of malaria, kala-azar, and Japanese encephalitis.
- Assist the Ministry of Health in establishing intercountry linkages for addressing cross-border prevention and control of priority vector-borne diseases.

Achievements—VBDRTC Institutional Capacity

- Formed a new Board of Directors that has been functional since April 2002.

- Formulated a modified mechanism for human resources development with mutual agreement among, USAID, the Board of Directors, and the EHP subcontractor International Science and Technology Institute.

Achievements—Ministry of Health Surveillance Capacity

- Through presentation of a workshop in September 2001, assisted the Ministry of Health to improve the timeliness and accuracy of EWARS reporting, not just for vector-borne diseases but also for all the six diseases that are currently being reported: malaria, kala-azar, Japanese encephalitis, tetanus, polio and measles.
- Set up an EWARS Operational Group to monitor the implementation of EWARS in Nepal.
- Conducted training on implementation of improved EWARS for medical recorders for 24 sentinel sites in collaboration with EDCD and WHO and improved EWARS implementation in eight pilot sites for 30 medical and statistical records and laboratory personnel.
- Carried out 2,459 dipstick tests for diagnosing kala-azar in 14 government health facilities and bone marrow dipstick tests for kala-azar on a trial basis at selected facilities.
- Assisted the U.S. CDC to provide training on epidemiological surveillance, outbreak investigation, and response, June 17–26, 2002.

Achievements—Assessments of Vector-Borne Diseases

- Prepared a CD-ROM on vector-borne disease epidemiological survey data analyses and operations research for dissemination in a June 2002 workshop on information sharing and dissemination.

Achievements—Interventions

- Established a partnership with the Canadian NGO, CECI, for carrying out pilot interventions related to control of vector-borne diseases in Dhanusha and Mahottari Districts where kala-azar and malaria are prevalent. Community level activities were initiated such as the training of Female Community Health Workers in recognition of kala-azar signs and care-seeking messages.
- Conducted training on clinical surveillance of kala-azar and the development of appropriate and adequate referral systems for 30 peripheral level health personnel in twelve districts, on an orientation to vector-borne disease for 14 health post workers, on basic malaria microscopy for laboratory technicians and assistants, and on assessment of in-vivo therapeutic efficacy of anti-malaria drugs in Dhanusha and Mahottari Districts for 19 health and laboratory workers.

- In collaboration with the Epidemiology and Disease Control Division, completed a malaria prevention, control, and referral training package that was used by CARE Nepal in training 12 master trainers, 164 trainers, and 609 female community health volunteers.
- Formed the National Kala-azar Technical Group.
- Initiated a study of anti-malaria drug resistance through in-vitro methods in collaboration with the U.S. Armed Forces Research Institute of Medical Sciences.

Achievements—Cross-Border Linkages

- Organized and facilitated a meeting in Kathmandu to evaluate malaria and kala-azar in the border areas and to prepare a plan of action on prevention and control activities.
- Organized and facilitated a meeting in Dhanusha, Janakpur, with health-service representatives from Bihar state, India, and Nepal district health officials to initiate community-based, cross-border collaboration on the prevention and control of kala-azar and developed an action plan on information sharing, laboratory diagnosis and case management.
- Established a secretariat for coordinating the BBIN Surveillance Network for Malaria Drug Resistance organized by the WHO Regional Office for South East Asia (WHO/SEARO) in collaboration with Nepal’s Department of Health Services and the Epidemiology and Disease Control Division (see ANE: Standardizing Surveillance for Vector-Borne Diseases in BBIN Countries below).

ANE: Standardizing Surveillance for Priority Vector-borne Diseases in BBIN Countries

Overview: The USAID Bureau for Asia and the Near East (ANE) is supporting a coordinated regional strategy for addressing infectious diseases, focusing on HIV/AIDS, sexually transmitted infections, tuberculosis, malaria, and other diseases for which antimicrobial resistance is especially problematic (acute lower respiratory infection, diarrheal disease, and visceral leishmaniasis) or for which epidemiological data are mostly lacking (Japanese encephalitis). The strategy supports development of new interventions, expansion of proven interventions, and improved surveillance programs. In July 2000, under the USAID/Nepal program described above, EHP helped establish the “BBIN network,” including representatives of Bangladesh, Bhutan, India and Nepal, to standardize surveillance methods and share information about vector-borne diseases within the member countries. The ANE Bureau identified the BBIN network as a strategic asset for its regional program and is supporting technical assistance to the network for promoting standardized surveillance procedures and information sharing for the three major vector-borne diseases.

Achievements

- BBIN member countries have strengthened their commitment to standardize surveillance procedures (clinical and laboratory diagnostic procedures, case definitions) and to share information on the priority diseases, and have proposed several bi-national joint plans of action for funding by WHO/SEARO. Countries have also committed to establishing sentinel sites for tracking the spread of resistance to anti-malaria drugs.

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

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 an activity in Madagascar, which will test the hypothesis that integration of activities in natural resource management and population and health will create positive synergies.

Overview: The Madagascar has four sub-activities: (1) strengthen the capacity of the Voahary Salama/Integrated Programs Initiative (VS/IPI) to plan, implement, monitor, and evaluate integrated approaches; (2) develop and test model approaches; (3) monitor and evaluate them; and (5) disseminate information about the integrated approach to partner organizations on the national and international levels.

Achievements—Strengthen the Capacity of VS/IPI to Implement Activities.

- Organized quarterly meetings of the VS/IPI steering committee.
- Registered ECHO as a Malagasy association, thus providing the option for EHP to enter into a subcontracting arrangement for Year 5 instead of hiring the local staff directly.
- Secured additional funding for Years 4 and 5.
- Supported field activities by partner NGOs: by MICET in three communes and six villages in Fianar and by SAF in target villages in Moramanga.
- Developed the following approaches: “community champion,” “child-to-child,” and “farmer-to-farmer.”
- Initiated the child-to-child approach in the Beforona area in Moramanga; pretested it and implemented it in Fianarantsoa.
- Initiated the community champion approach in the Fianarantsoa region.
- Pre-tested IEC materials.

- Developed curricula and conducted training-of-trainers for cross-training of environment and health staff of Linkages, John Snow, Inc., USAID, LDI and SAF.

Achievements—Monitoring and Evaluation

- Developed and pretested a monitoring and evaluation system for tracking progress in the target villages.
- Disseminated the results of the baseline survey.
- Conducted a mid-term evaluation of MICET using newly developed monitoring tools.
- Completed and disseminated the VS/IPI mid-term progress report.

Achievements—Dissemination

- Published a mid-term progress report and participated in several international meetings in the United States.

Task 6: Information Center

Introduction: The Information Center supports all other tasks by disseminating contract products and deliverables.

Overview: The basic strategy of the Information Center is to make documentation and dissemination an integral part of EHP activities. The principal modes for information sharing and dissemination are the Internet and e-mail using existing and new technologies, information products and partners. The Center's activities, which are closely aligned with other tasks under Task Order #1, fall into four subtasks:

- Strategic support to Tasks 2, 3 and 4
- An EHP activities database
- Development of partnerships
- Information and dissemination services.

In Year 3, a decision was made to discontinue the database and to collect data on activities through other means.

Achievements—Strategic Support

- Documentation of contract deliverables

- Prepared Work Plans for Year 3 and Year 4, annual reports for Years 1 and 2, and quarterly reports for Year 2 (third quarter) and Year 3.

Conference support

- Prepared environmental health materials for display at the USAID environment officers' meeting (July 2001)
- Prepared CD-ROMs for USAID staff for distribution at an international conference at IRC (October 2001)
- Prepared a poster on the BBIN activity and other materials for display at the annual Global Health Council Conference (May 2002)
- Prepared materials and CD-ROMs for the African Hygiene and Sanitation Conference in Johannesburg (July 2002).

Information support

- Conducted literature searches and obtained articles for EHP and USAID staff on the following topics: malaria, geographic information systems (GIS), rotovirus vaccines, the relationship between diarrheal disease and malnutrition, indoor spraying of insecticides, gold mining in Nicaragua, ISO 14001, handwashing, environmental management, dengue, water/sanitation coverage statistics and other topics.

Publication support related to Tasks 2,3 and 4

- Archived 52 Reports for the File
- Published the following (see Annex II for complete citations):
- Strategic Report 2: *The Story of a Successful Public-Private Partnership in Central America: Handwashing for Diarrheal Disease Prevention.*
- Activity Report 105: *Operations and Maintenance Strategy for Community-managed Rural Water Supply Systems in the Dominican Republic.*
- Activity Report 106: *Nicaragua: Rural Water Supply, Sanitation, and Environmental Health Program.*
- Activity Report 107: *Developing a Hygiene Behavior Change Program for Children with Lead Poisoning Living in Informal Urban Areas of Lima, Peru.*
- Activity Report 108: *A Review of Control Methods for African Malaria Vectors.*

- Activity Report 109: *Health of Children Living in Urban Slums in Asia and the Near East: Review of Existing Literature and Data.*

Achievements—Partnerships

- Collaborated with the Malaria Consortium of the Department for International Development, U.K., to distribute EHP's *Malaria Bulletin*
- Collaborated with the World Bank's Water Help Desk in responding to information requests.
- Collaborated on various activities with the U.S. Centers for Disease Control and Prevention (CDC), BASICS, the Global Health Council, the Population and Health Materials Working Group, CARE, ICDDR, the International Reference Centre for Water and Sanitation (IRC).
- Participated in a meeting of the Partnership on Social Science for Malaria Control (PSSMC) in London in January 2002. As a result of the partnership, information from PSSMC's database (research abstracts, publications) is shared with EHP for inclusion in the EHP Malaria Bulletin.
- Collaborated with the International Reference Center in the Netherlands in responding to information requests.
- Facilitated an e-conference on the hygiene improvement framework in collaboration with WSSCC and GARNET's Hygiene Behavior Network.

Achievements—Information Services

- Responded to between 500 and 600 information requests per quarter, from staff and consultants, USAID, international and nongovernmental organizations, developing countries and others.
- Facilitated an e-conference on Safe Excreta Disposal in August 2001
- Established a link to the National Library of Medicine's PubMed international data base so that EHP website visitors can conduct automatic searches for published literature on diarrheal disease and malaria from over 5,000 journals

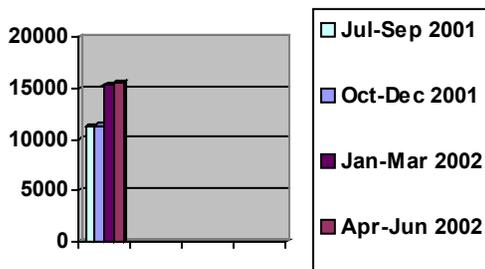
Information Products Developed and Disseminated

- EHP Brief 1: *Case Studies on Decentralization of Water Supply and Sanitation in Latin America.*
- EHP Brief 2: *Linking Health, Population, and the Environment in Madagascar.*
- EHP Brief 3: *Nepal Vector-Borne Disease Program.*

- EHP Brief 4: *Protecting the Health of Hurricane Mitch Victims in Nicaragua: The EHP Rural Water Supply, Sanitation, and Environmental Health Reconstruction Program.*
- EHP Brief 5: *Programming, Participation, and Partnerships under Duress: The West Bank Village Water and Sanitation Program.*
- Prepared and distributed 24 issues of the Malaria Bulletin and created a directory of the 600 bulletin subscribers in 45 countries.
- Introduced a new e-bulletin on hygiene and distributed six issues to 110 subscribers (February 2002)
- Prepared and distributed eight issues of the e-newsletter, What's New at EHP.
- Prepared and distributed 12 Environment Health Updates.
- Redesigned and revised the EHP brochure in English, Spanish and French.

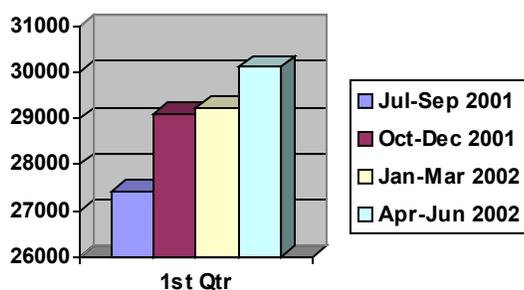
Website Usage

- Maintained, refined and expanded the reach of the EHP website, as shown by the following usage data:
 - Visits to the website: first quarter = 11,271; second quarter = 11,365; third quarter = 15,350; and fourth quarter = 15,620



Download of Publications Electronically

- EHP Reports downloaded via the USAID Development Experience Clearinghouse website: first quarter = 569; second quarter = 3,177; third quarter = 2,163; and fourth quarter = 1,148.
- Files or reports viewed or downloaded from the EHP website: first quarter = 27,420; second quarter = 29,107; third quarter = 29,240; and fourth quarter = 30,107 downloads.



Website Evaluation

In December 2001, carried out an assessment of the EHP website. Two of the indicators used for the website evaluation were: content (usefulness of content) and outcomes (use of information accessed from the website and how the information was used). Results showed that 68% of the website visitors accessed the website for EHP publications and 59% for technical information (multiple answers were accepted). Ninety percent of the survey respondents used the information accessed from the website—the most common usages were for research and writing of other documents, followed by program planning, capacity building (training) and program implementation.

Task 7: Other

Introduction: EHP provides environmental health assistance to missions and bureaus in areas that do not clearly fit under CESH and ECHO.

Dominican Republic: Decentralization of Rural Water and Sanitation Services

Overview: USAID/Dominican Republic and the National Water Supply and Sewerage Institute (INAPA), the national water utility, agreed to work together and co-finance a pilot rural water supply and sanitation project in Hato Mayor Province. The joint effort allowed INAPA to develop and test approaches to implement its decentralization strategy, which will subsequently be scaled up to the national level. The pilot project applied the total community participation model and constructed sanitation systems and water supply infrastructure. USAID provided INAPA with technical assistance and training. Entrena (a local contractor) managed the NGO contracts under the pilot project, and EHP provided technical assistance to help develop and strengthen INAPA's capacity to implement the decentralization strategy. The activity officially ended on December 31, 2001. However, EHP and USAID/Global Health agreed to use CESH core funds to write an EHP report describing the work in the Dominican Republic over the last four years and placing it in the context of the hygiene improvement framework

Achievements

- Assisted INAPA to assess its capacity to support the long-term operations and maintenance needs of community-based or -owned rural water and sanitation systems.
- Provided on-site coaching to INAPA as it re-engineers the way it does business and becomes more of an enabling institution.
- Published Activity Report 105: *Operations and Maintenance Strategy for Community-Managed Rural Water Supply Systems in the Dominican Republic.*
- Drafted, reviewed, and edited *Creating an Enabling Environment for Community-based Rural Water Supply, Sanitation, and Hygiene Promotion Systems—Case Study: Reforming the Rural Department of the National Water Agency (INAPA) in the Dominican Republic.*

Dominican Republic: Community-Level Hygiene Behavior Change

Overview: The purpose of this activity was to strengthen the behavior-change component of the community health, water, and sanitation interventions currently under way within the USAID/Dominican Republic reconstruction program in order to achieve the maximum project health impact. EHP provided assistance to the local contractor Entrena, to NGOs involved in water supply and sanitation reconstruction efforts, and to the Ministry of Health to design and implement a strategy to prevent diarrheal disease through improved hygiene behaviors. An interactive approach identified NGO strengths and worked in a participatory fashion to improve the community-level behavior-change capacity of the NGOs and the Ministry of Health. This activity was coordinated with technical assistance for community-level behavior change in the areas of nutrition and social mobilization for vaccinations, and ultimately hygiene behavior change will be incorporated into the Dominican IMCI model. This activity ended December 31, 2001. Nevertheless, EHP and USAID/Global Health agreed to provide additional CESH core support to allow the consultant to return to the Dominican Republic in April 2002 to assess the behavior-change program and to write a final report.

Achievements

- Worked with the local team to design and implement a hygiene behavior change program for the Hato Mayor pilot activity.
- Carried out a follow-up assessment of the behavior change activity and drafted the final report.

LAC: Decentralization of Water Supply and Sanitation Systems

Overview: The primary purpose of this activity is to develop case studies on decentralization of water supply and sanitation systems in Latin America. The case studies have been completed, and all that remains is ongoing dissemination.

Achievements

- Disseminated case studies on the decentralization of water and sanitation systems in six Latin American countries.
- Prepared two articles on the case studies for publication in *Waterlines* for the July 2002 issue—a special issue on Latin America: “Creating Institutional Support Mechanisms for Rural Water and Sanitation Systems” and “Improving Sanitation in Small Towns in Latin America and the Caribbean”).
- Submitted two one-page case studies to the Global Water Partnership’s compendium of case studies.
- Wrote a scope of work for developing guidelines for creating an institutional support mechanism.

LAC: Sanitation in Small Towns

Overview: EHP is developing practical guidance for USAID missions and contractors on improving sanitation in small towns. This activity builds on EHP’s previous decentralization work in Latin America and the Caribbean that focused on small towns and rural areas. EHP has developed a draft overview document that defines the problem and a methodology that can be used to develop a plan to improve sanitation services in small towns.

Achievements

- Completed a document defining the problem of sanitation in small towns and presented a methodology for developing plans to improve sanitation services.
- Carried out field tests of the methodology in Ecuador by a CARE-led consortium, in La Cabima, Panama, and in White Horses, Jamaica, funded by USAID’s Water Team.
- Reached agreement with PAHO and the World Bank’s Water and Sanitation Program to cosponsor dissemination workshops in Fall 2002, selected sites for the workshops in Peru and Honduras, and held a one-day planning meeting.

Honduras: Development of Supervisory System for Environmental Health Technicians

Overview: USAID has been working with the Honduran Ministry of Health since 1993 in the development of an integrated environmental health program to address the prevention and control of malaria, dengue fever, and tuberculosis. To date, the ministry has trained 270 environmental health technicians (TSAs) and is in the process of training 50 supervisory TSAs. More TSAs are to be trained during 2002. Because of the growth in the program, USAID/Honduras has requested that EHP provide an advisor in environmental health to assist the ministry to develop a working model for TSA supervision, task definition, evaluation and reporting.

Achievements

In May 2002, conducted the first of three trips to assess the current status of the TSA program and make recommendations for improvement: Findings were that, while the TSA program has made excellent progress, it is still overly compartmentalized at the central level and that roles and responsibilities at all levels need clarification.

South Africa: Bushbuckridge Retail Water Distribution Project

Overview: EHP completed its support to USAID/South Africa's efforts to develop the capacity to distribute retail water in Bushbuckridge. EHP passed the baton to the long-term technical assistance contractor, Chemonics, following a review workshop in August 2001.

Achievements

Planned and conducted a workshop from August 1–15, 2001, to review the project following the first year of work by Chemonics.

Task Order 2: Malaria Vaccine Development Program (MVDP)

Overview: Support for the USAID Malaria Vaccine Development Program (MVDP) is conducted by EHP through Task Order 2 under its contract with USAID. The task's planned duration is five years (August 1, 1999—July 31, 2004).

Accomplishments

- Provided support to regular vaccine team meetings, including preparation of agendas and minutes and follow-up activities.
- Prepared for, participated in, and followed up on the November 2001 and May 2002 Scientific Consultants Group semiannual meetings.

- Began planning with the Walter Reed Army Institute of Research the upcoming preclinical and clinical plans for the Walter Reed-USAID antigens.
- Continued work on an addendum to the investigational new drug application to the U.S. Food and Drug Administration for the *Escherichia coli* merozoite surface protein 1 (MSP1) vaccine target antigen.
- Reviewed portions of an investigational new drug application to the U.S. Food and Drug Administration for the *Escherichia coli* Apical Membrane Protein 1 (AMA1) vaccine target antigen.
- Continued follow-up work on a possible new investment in *Plasmodium falciparum* erythrocyte membrane protein 1 (PfEMP1).
- Presented a lecture at Tulane University’s School of Public Health and Tropical Medicine in February 2002 entitled “A Programmatic Approach to Malaria Vaccine Development” and followed up by giving an examination and grading student papers, as part of the Malaria 2002 course.

Task Order 3: Nicaragua—Emergency Rural Water Supply, Sanitation, and Environmental Health Project

Overview: This two-year reconstruction program funded by the USAID mission in Nicaragua aimed at improving health by increasing or improving water supply and sanitation services and providing community organization and education programs for people in areas of the country affected by Hurricane Mitch in October 1998. The strategy was to carry out project activities by means of a series of grants awarded to established in-country PVOs with water, sanitation, health, and community education and participation experience. The program ran from September 1999 to December 2001. It was one component of a \$94 million package of assistance that the U.S. Congress approved to address the damage wrought by Hurricane Mitch in Nicaragua’s northern regions.

Achievements

- Reached or exceeded targets for each of the project indicators, including:
 - Constructed or rehabilitated 2,692 water systems and 7,226 latrines (over 100% of target).
 - Drilled 295 potable water wells using EHP-purchased drilling rigs (over 100% of the target).
 - Constructed 3,503 environmental projects, such as drainage collection boxes and reforestation efforts.

- Improved water and sanitation at 40 clinics in Matagalpa and Jinotega under CARE Nicaragua’s contract.
- Held over 12,000 community and household training events with 70,000 adult participants, with additional training provided to children through various school projects.
- Carried out testing for arsenic and found that six of the 124 wells tested showed levels of arsenic higher than the allowable maximum established by the Regional Potable Water Committee (CAPRE).
- Discussed results of the arsenic testing with the Ministry of Health, the Directorate of Rural Water Supply, and UNICEF—the organizations that will be responsible for addressing arsenic contamination after EHP involvement ends.
- Completed the final report of the activity (a technical and social evaluation of the works constructed and communities involved) and posted it on the EHP web site in January 2002: *Activity Report 106: Nicaragua: Rural Water Supply, Sanitation, and Environmental Health Program*.
- Presented a debriefing to USAID in February 2002.

Task Order 801: El Salvador—Legal and Regulatory Reform of the Water Sector

Overview: Support to the legal and regulatory reform of the water sector in El Salvador, including both the water resources and the water supply and sanitation subsectors, is being provided in two phases. In Phase I (May–December 2000), EHP assisted in reviewing and discussing key elements of two draft laws—one for water resources and the other for regulation of water supply and sanitation. However, these draft laws have been put on hold by the National Aqueduct and Sewerage Administration (ANDA) and may not be resurrected. Phase II (January–May 2001) originally intended to assist the Legislative Assembly in reviewing the laws but is instead focusing on the more immediate issue of developing an institutional model to provide back-up support to rural communities after the water and sanitation systems are operational. The activity was extended to September 2002, to allow for delays caused by earthquakes.

Achievements

- Initiated Phase II by reviewing current ANDA legislation and how it might be modified to support decentralization.
- Developed and revised a model for providing back-up support to rural water and sanitation systems and circulated it to a wide range of stakeholders for comments.

- Assisted the Ministry of Environment to develop the legal and institutional framework for watershed management commissions.

Task Orders 802, 803 and 804: West Bank— Village Water and Sanitation Program

Overview: The original purpose of USAID’s West Bank Village Water and Sanitation Program (VWS) was to provide safe and sustainable water and sanitation services to 44 rural towns serving a population of 135,000 in the West Bank. The program was to focus on communities in the West Hebron and South Nablus areas. The VWS program supported one of the strategic objectives of USAID/West Bank: to provide greater access to and more effective use of scarce water resources. Work was to be carried out in collaboration with the Palestinian Water Authority, as well as the Ministries of Agriculture, Environmental Affairs, Health, Local Government, and Planning. Implementation was to be carried out under three separate Task Orders.

- **Task Order 802:** Engineering Studies. The preparation of engineering feasibility studies for new and rehabilitated water distribution networks, new and rehabilitated wastewater treatment, and water re-use (initiated September 17, 2001; duration—three months; extended for three additional months—to March 22, 2002).
- **Task Order 803:** Health, Governance, Wastewater Re-use Studies, Designs, and Program. The preparation of feasibility studies and the design of programs for improved community education and governance to improve water, sanitation, hygiene, and agricultural practices (initiated September 27, 2002; duration—two years).
- **Task Order 804:** Engineering Designs. Development of designs and procurement packages for all of the proposed facilities (initiated March 22, 2002).

The activity underwent major changes as a result of the invasion and prolonged occupation of major Palestinian municipalities by the Israeli Defense Forces beginning on March 29, 2002. Following the Israeli incursions into the West Bank, Task Orders 803 and 804 were converted to an emergency operation consisting of providing emergency water supplies and assessing water needs and availability. (Task Order 802 had already been completed.)

Achievements—Task Order 802

- Established an office in the West Bank, visited the proposed sites, clarified the scope of work, and hired a team leader.
- Conducted field assessments in all 44 of the project communities and submitted them to USAID and the Palestinian Water Authority for review and comments.

Achievements—Task Order 803

- Conducted environmental health surveys in 600 households.
- Drafted a governance assessment report and a governance program design.
- Finalized the scope of work for the wastewater re-use assessment.
- Put all original plans on hold because of the emergency situation.
- Helped establish and staff an Emergency Water Operation Center (EWOC) to coordinate all water disaster assessment information and facilitate the procurement of emergency supplies and equipment for the major towns in the West Bank.
- Opened a second office outside of Jerusalem in addition to the office in Ramallah to accommodate the EWOC and the ongoing work.

Achievements—Task Order 804

- Evacuated expatriate staff from Ramallah and established a temporary office in Al-Ram.
- Provided USAID support to the EWOC, established by the Palestinian Water Authority and representatives of the donor and NGO community.
- Established an office for the EWOC and enlisted support from interested agencies, including the UNDP, Oxfam-Great Britain, and the American Near East Refugee Aid.
- Coordinated damage assessments, prioritized needs, prepared reports for each locality, briefed municipal officials, and organized rapid response to emergency needs.
- Continued, as feasible, engineering design work related the VWS.

Annex I. Year 3 Milestones

Shaded cells indicate target date for completion; those with “x” indicate that the target was achieved.

Task/Milestone	1st Q	2 nd Q	3 rd Q	4 th Q	Comments
<i>Task 1: Work Plan</i>					
Finalize and submit work plan to USAID				x	
<i>Task 2: Lessons Learned & Policy</i>					
WSH monitoring working group meeting.		x			
Jointly (with IRC and WELL) organize 1 technical meeting.				x	
Annual performance and milestone report					Postponed to August 2002.
Tracking system for M&E Plan indicators implemented					No date indicated.
Decision made on topic and outline of TBD policy document.			x		Date changed from 1 st to 3 rd Q.
Decision made on a meetings-related activity to be implemented in PY 4.		x			
System in place for tracking and coordination			x		Date changed from 1 st to 4 th Q.
Adaptation of diarrheal disease prevention module.			x		
Participation in regional and national IMCI training.					Date established for 2 nd Q of Y4.
<i>Task 3: CESH</i>					
Publication of the results of the operations					Date changed to June 28, 2003.

Task/Milestone	1st Q	2 nd Q	3 rd Q	4 th Q	Comments
research field test.					
Published draft of sanitation policy guidelines.			x		
Full set of training materials and products for DR translated from Spanish to English and compiled in a useable fashion.			x		
Final draft of module on diarrheal disease prevention vetted through cooperative partners.				x	
Documented expenditure of core EHP funds to support field activities consistent with the hygiene improvement framework.				x	
<i>Task 4A1: ECHO/XS</i>					
Activity report on methods of cross-sectoral surveillance.					Date changed to Y4.
Meeting of the TWG for cross-sectoral surveillance.					Date changed to Y4.
<i>ECHO/XS: Nepal</i>					
Regulate status of employees as per USAID guidelines.				x	Date changed from 2 nd to 3 rd and then to 4 th Q.
Follow up on recommendations made by expert consultation to strengthen surveillance.	x				
Implement activities at pilot sites to strengthen community surveillance.		x			
Subcontract established with CECI for pilot testing of interventions.	x				
Operations research agenda related to testing intervention efficacy carried out.					Initiated but not completed.
Incorporate XS principles and methods into strengthening of EWARS system.		x			

Task/Milestone	1st Q	2 nd Q	3 rd Q	4 th Q	Comments
<i>ECHO/XS: Eritrea</i>					
Functional analysis of Malaria Control Program to support sentinel site development.			x		Date changed from 1 st to 3 rd Q.
Experts workshop to review data collected to date.					Cancelled at client's request.
Activity report on results from Bti and Bs field trials.				x	
<i>ECHO/XS: Mozambique</i>					
Activity report on EHP assistance to Mozambique.				x	
<i>Task 4A2: ECHO/IVM</i>					
Organizational workshop for IVM guidelines and training strategy.			x		Date changed from 1 st to 3 rd Q.
CORE Group malaria meeting in Nairobi.		x			
Symposium on health benefits of malaria vector control.				x	Objectives were modified to develop standard of proof to demonstrate health benefits.
<i>Task 4B: ECHO/IP/Madagascar</i>					
Conduct HPE IEC training for field agents.	x				
In-depth analysis of baseline survey data completed.	x				
EHP activity report on progress to date published.			x		
Concept paper on HPE integration published.					Date changed from 1 st to 3 rd Q and then postponed to Y4.

Task/Milestone	1st Q	2nd Q	3rd Q	4th Q	Comments
<i>Task 6: IC</i>					
Information-exchange network on one specialized topic established.	x				
Medline database searchable via links from the EHP web site.		x			
EHP web site assessed.		x			
New Internet bulletin on handwashing developed and disseminated.			x		
Feasibility of establishing a web ring or gateway to environmental health with other relevant web sites explored.					Postponed to 4 th Q, Y4.

Annex II. EHP Products, Year 3

Task Order 1

Task 1: Work Plan

- Year 4 EHP Work Plan

Task 2: Policy and Lessons Learned

- Abstracts on DRC, Madagascar, Nepal, Nicaragua, and the West Bank for the Annual Conference of the Global Health Council in 2002.
- Technical reports for analyzing socioeconomic differences in health, nutrition, and population indicators produced for the Madagascar and India activities.
- Meetings and Reports: a PowerPoint review of the public-private Central American Handwashing Initiative for presentation at the World Bank.
- Performance Monitoring: draft EHP monitoring and evaluation plan.
- Water, sanitation, and hygiene module for rapid health facility assessments.
- Presentations on sentinel surveillance and the evaluation of integrated health-population-environment interventions.
- Environmental health assessment state-of-the-art survey instrument.
- Final EHP Monitoring and Evaluation Plan.
- Strategic Report 2: "The Story of a Successful Public-Private Partnership in Central America: Handwashing for Diarrheal Disease Prevention" by Camille Saade, Masee Bateman, and Diane B. Bendahmane.
- CD-Rom of proceedings of the "Fresh Air" meeting of the CORE Group's Malaria Working Group.
- Public-Private Partnerships: Mobilizing Resources to Achieve Public Health Goals. The Central American Handwashing Initiative Points the Way by Frances Tain and Diane Bendahmane (a 16-page brochure summarizing the longer report that was published last quarter).
- A CD-ROM containing the electronic version of the above document, the longer-report on which it is based, and supplementary materials.

- A draft memorandum of understanding for partnership activities with the Water and Environmental Sanitation (WES) department in UNICEF.
- Hygiene Improvement Module for a Rapid Health Facility Assessment.
- Presentation on sentinel surveillance (Nepal, Eritrea).
- Presentation on the evaluation of integrated health-population-environment interventions.
- State-of-the-art environmental health assessment survey instrument.
- Draft of a catalogue of water, sanitation, and hygiene survey instruments.
- Final EHP Monitoring and Evaluation Plan.
- Draft CESH quantitative assessment guideline.
- Final EHP Monitoring and Evaluation Plan.

Task 3: Community-Based Environmental Sanitation and Hygiene (CESH)

CESH Core Activities

- The results of the information exchange e-discussion on safe disposal of children's excreta are available on the EHP Web site.
- EHP's advocacy document, "Hygiene Improvement Framework," appeared in Framework for Action: Child Diarrhea Prevention, a publication of the Global Health Council, September 9, 2001.
- Summary of e-conference on the hygiene-improvement framework posted on the EHP web site.

CESH Field Program:

CESH Urban Health Field Programs

ANE Urban Health Initiative

- Activity Report 109: Health of Children Living in Urban Slums in Asia and the Near East: Review of Existing Literature and Data.

India: Child Health and Nutrition among the Urban Poor

- "A Strategic Approach for USAID's Investments to Improve Child Health and Nutrition in India, March 2001."
- "Improving Health of the Urban Poor Living in Slums in India, Strategy for U.S. Investment-7 June 2001."
- "India Urban Health Program/Action Plan for Implementation"(draft).

Task 4: Environmental Change and Health Outcomes (ECHO)

Task 4A: ECHO Cross-Sectoral Surveillance (ECHO/XS) and ECHO Integrated Vector Management (ECHO/IVM)

ECHO/IVM Core Activities

- EHP Activity Report 108: A Review of Control Methods for African Malaria Vectors (for distribution at Kampala meeting).

ECHO/XS Field Programs

Nepal: Program for the Prevention and Control of Selected Infectious Diseases

- "Workshop Proceedings: Strengthening Interventions for Selected Vector-borne Diseases: A Workshop Designed to Review Current Data and Approaches, May 16-19, 2001, Kathmandu"
- Manual for Training of Trainers on Community-Based Malaria Prevention.

Mozambique: Technical Assistance to the National Malaria Control Program

- Maps showing distribution of malaria cases.

Eritrea: Technical Assistance to the Eritrea National Malaria Control Program

- Completed drafts of four activity reports, as follows:
 - Malaria Vector Studies in Eritrea
 - National Survey of Malaria Parasite Prevalence in Eritreat, 2000-2001
 - Malaria Risk Stratification in Eritrea
 - Malaria Vector Control Studies in Eritrea

- Malaria Vector Control Studies in Eritrea (activity report ready for editing).
- Malaria Vector Studies in Eritrea (activity report ready for editing).

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

- Information-education-and communication materials for the child-to-child approach.
- First draft of proposal for institutionalization of Voahary Salama/Integrated Programs Initiative (VS/IPI) and ECHO.
- Mid-term progress report.

Task 5: Grants

- No key products.

Task 6: Information Center

Products Published

- Revised EHP Brochure
- EHP Bookmarks
- EHP Brief 1: Case Studies on Decentralization of Water Supply and Sanitation in Latin America.
- EHP Brief 2: Linking Health, Population, and the Environment in Madagascar.
- EHP Brief 3: Nepal Vector-Borne Disease Program.
- EHP Brief 4. Protecting the Health of Hurricane Mitch Victims in Nicaragua: The EHP Rural Water Supply, Sanitation, and Environmental Health Reconstruction Program.
- EHP Brief 5: Programming, Participation, and Partnerships under Duress: The West Bank Village Water and Sanitation Program.
- AR 106. Nicaragua: Rural Water Supply, Sanitation, and Environmental Health Program. Harold Lockwood with Gertrudis Medrano Morales and Jesus Olmedo Altamirano. 27052/NIC.WRAPUP. December 2001.

- AR 107. Developing a Hygiene Behavior Change Program for Children with Lead Poisoning Living in Informal Urban Areas of Lima, Peru. Marco Polo Torres. 26568/OTHER.PE.URBANEH.BEHAVIOR. December 2001.
- Activity Report 108: A review of Control Methods for African Malaria Vectors
- Activity Report 109: Health of Children Living in Urban Slums in Asia and the Near East: Review of Existing Literature and Data.
- Four issues of EHP's e-newsletter, "EHP News"

Products Archived

- RF 353, "Estudio 'Identificación de Capacidades y Condiciones Laborales de los Trabajadores Independientes de Residuos sólidos en Lima Metropolitana': Informe Final"
- RF 354, air quality CD from Dirección General de Salud Ambiental
- RF 355, "Foro Sobre Intercambio de Experiencias, Desafíos y Retos, Managua, 24-25 de Abril, 2001"
- RF 356, "Trip Report, March 12-23, 2001: Technical Assistance to USAID/Peru to Train DIGESA Personnel in the Use of Geographical Information Systems for the Study and Evaluation of Environmental Problems"
- RF 357, "Work Plan for Year 3: Task Order 1"
- RF 358, "'Quarterly Report' for Period June through December 1999"
- RF 359, "Quarterly Reports: January-March, April-June 2000"
- RF 360, "Quarterly Report 3: July-September 2000"
- RF 361, "Year 2 Quarterly Report 1: October-December 2000"
- RF 362, "Trip Report: Retail Water Distribution Capacity Development Project, Bushbuckridge, South Africa"
- RF 363, "Year 1 Annual Report: June 21, 1999, to September 30, 2000"
- RF 364, "Year 2 Quarterly Report 2: January-March 2001"
- RF 375. "Seminario-Taller sobre Letrinas Aboneras, 8 y 9 de Marzo de 2001." EHP/Nicaragua Staff. 27052/NIC.MANAGUA. December 2001.
- RF 376. "Evaluación de las Estrategias Sociales: Informe Global." Lic. Marissa Azmitia. 27052/NIC.MANAGUA. December 2001.

- RF 377. "Manual de Operaciones: Sistema de Información Nacional de Agua y Saneamiento." Gerencia de Acueductos Rurales. 27052/NIC.MANAGUA. June 2001.
- RF 378. "USAID Nicaragua Emergency Rural Water Supply, Sanitation and Environmental Health Program." Joe Narkevic, Harold Lockwood, Gustavo Martinez, Morris Israel, and John Austin. 27052/NIC.MANAGUA. June 1999.
- RF 379. "Informe Final de Actividades: Area de Ingenieria y Técnica." EHP/Nicaragua Staff. 27052/NIC.MANAGUA. December 2001.
- RF 380. "Plan de Desarrollo, Evaluación y Monitoreo: Proyecto Rural de Agua Potable, Saneamiento y Salud Ambiental." William Millsap, Ph.D. 27052/NIC.MANAGUA. October 1999.
- RF 381. "Manual del Usuario: Sistema de Información Nacional de Agua y Saneamiento." Gerencia de Acueductos Rurales. 27052/NIC.MANAGUA. June 2001.
- RF 382. "Year 2 Work Plan, October 2000-November 2001: Nicaragua Rural Water Supply, Sanitation, and Environmental Health Project." EHP/Nicaragua Staff. 27052/NIC.MANAGUA. March 2001.
- RF 383. "Work Plan, September 1999-September 2000: Nicaragua Rural Water Supply, Sanitation, and Environmental Health Project." Harold Lockwood, M.Sc., and David Ogden, P.E. 27052/NIC.MANAGUA. July 2000.
- RF 384. "Estudios Comunitarios Comparativos sobre Cambios de Comportamientos Higienicos Sanitarios: Tercer Nivel de Monitoreo y Evaluación." EHP/Nicaragua Staff. 27052/NIC.MANAGUA. December 2001.
- RF 385. "Calidad Fisico-Quimica del Agua para Consumo Humano de 124 Pozos en la Región Noroccidental de Nicaragua con Enfoque en la Presencia de Arsenico: Informe de Resultados." Elaborado por el Programa de Investigación y Docencia en Medio Ambiente de la Universidad nacional de Ingeniería. 27052/NIC.MANAGUA. November 2001
- RF 386. "Foro de Cierre: 'Logros y Aprendizajes: Programa Rural de Agua Potable, Saneamiento y Salud Ambiental,' Montelimar, 3-5 Diciembre del 2001: Informe Final." Myrna Moncada F. 27052/NIC.MANAGUA. December 2001.
- RF 387. "EHP II Year 2 Annual Report: October 2000 through June 2001." EHP Staff. 26568/LLP.ME.Y3.PERF. February 2001.
- RF 388. "First Draft: Urban Environmental Health Opportunities, USAID/Democratic Republic of the Congo." Phil Roark. 26568/OTHER.DRC.SCALEUP. September 2001

- RF 389. "EHP II Year 2 Quarterly Report 3: April-June 2001." EHP Staff. 26568/LLP.ME.Y3.PERF. February 2002.
- RF 390. "Informe de los Talleres de Fortalecimiento de Equipos: Actividad de Servicios de Salud Ambiental Urbana y Hábitos de Higiene, Lima, 4-6, 9, 11-12 de Marzo, 2002." Elaborado por Mercedes Torres Barriero. OTHER.PE.URBANEH.DIGESATM. March 2002.

Task 7: Other Activities

Dominican Republic: Decentralization of Rural Water and Sanitation Services

- Activity Report 105: Operations and Maintenance Strategy for Community-Managed Rural Water Supply Systems in the Dominican Republic

Latin America and the Caribbean: Decentralization

- The case studies were the primary products of this activity. Strategic Report 1. *Case Studies on Decentralization of Water Supply and Sanitation Services in Latin America.*

Latin America and the Caribbean: Sanitation in Small Towns

- Draft document overview of sanitation in small towns in Latin America and the Caribbean.
- Draft methodology for improving sanitation in small towns.
- Spanish translation of the methodology

Latin America and the Caribbean: Decentralization

- Two articles for Waterlines: (1) Creating Institutional Support Mechanisms for Rural Water and Sanitation Systems and 2) Improving Sanitation in Small Towns in Latin America and the Caribbean.

Honduras: Development of Supervisory System for Environmental Health Technicians

- May trip report summarizing findings and recommendations.

Task Order 2

Malaria Vaccine Development Program (MVDP)

- The MVDP Technical Adviser produced a document entitled "Report of the Scientific Consultants Group Meeting, May 1-2, 2001." This report was completed and distributed in August 2001.
- Report of the Scientific Consultants Group Meeting, May 9-10, 2002.

Task Order 3

Nicaragua Emergency Rural Water Supply, Sanitation, and Environmental Health Project

- Schedule of Year 2 Milestones, Outcomes, and Products
- Activity Report 106: Nicaragua: rural Water Supply, Sanitation, and Environmental Health Program by Harold Lockwood with Gertrudis Medrano Morales and Jesus Olmedo Altamirano.

Task Order 801

El Salvador: Legal and Regulatory Reform of the Water Sector

- Draft report on proposed model for providing back-up support to rural water supply and sanitation systems.

Task Order 802

- West Bank: Village Water and Sanitation Program (VWS): Engineering Studies
- Draft Preliminary Design Report for the West Hebron Service Area Distribution System Networks.
- Draft Preliminary Design Report for the Water Systems in the South Nablus Area.
- Draft Village Wastewater System Feasibility Report for the West Hebron and South Nablus Clusters.
- Preliminary Design Report for the West Hebron Service Area Distribution System Networks.
- Preliminary Design Report for the Water Systems in the South Nablus Area.

- Village Wastewater System Feasibility Report for the West Hebron and South Nablus Clusters.

Task Order 803

West Bank: Village Water and Sanitation Program (VWS): Health, Governance, Waste Water re-use Studies, Designs, Program

- A signed Task Order 803.
- Draft Environmental Health assessment/survey design
- Governance Assessment Report
- Draft Governance Design
- Disaster Assistance Plan