



ENVIRONMENTAL HEALTH PROJECT

ACTIVITY REPORT

No. 59

Summary of EHP Activities in Kitwe, Zambia,
1997-1999
Kitwe Urban Health Programs

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by

Franklin Baer
Christopher McGahey
and
Panduka Wijeyaratne

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ABOUT THE AUTHORS

Franklin C. Baer, Dr. P.H., MHS-TM, is an independent international health consultant specializing in primary health care systems management. His work in 20 African countries, and Haiti, since 1972, has included 17 years in Congo (Zaire) where he managed a national project to decentralize the governmental health system in close collaboration with NGOs. Dr. Baer's contributions to the Kitwe Urban Health Programs were especially in the areas of integrated planning, capacity building, IEC development, monitoring systems, and workshop design/facilitation.

Christopher McGahey is an environmental engineer affiliated with Associates in Rural Development, Burlington, Vermont. He has an M.Sc. and Ph.D. from the Johns Hopkins University. In addition to work in the United States with EPA in wastewater treatment, he has overseas experience in Africa (Peace Corps, Kenya, and environmental impact studies for the World Bank), Thailand (with the International Rescue Committee working in a refugee camp in various engineering aspects), and the Caribbean. Most recently, he has worked with EHP in assessment and design of a wastewater treatment plan for Montego Bay, Jamaica, and has undertaken multiple trips to Haiti in developing the water supply plan for Cité Soleil.

Panduka Wijeyaratne is EHP's Program Director for Tropical Disease Prevention. In this capacity, he has managed or participated in many USAID-funded activities related to malaria and other tropical diseases. Dr. Wijeyaratne joined EHP in the summer of 1994, having been principal program officer (Health, Society, and Environment) with IDRC in Ottawa, Canada, from 1984 to 1994. Throughout his career, he has focused on medical ecology, entomology, epidemiology, and the control and prevention of vector-borne diseases. He has extensive publications and experience globally in 35 countries; he has worked in the United States, Canada, Sri Lanka, and Nigeria, including teaching and conducting research.

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Many people contributed to the organization and implementation of the Kitwe Urban Health Programs (KUHP), from the original vision to programmatic planning, implementation, and accomplishments. The original vision and program support for KUHP came from a cooperative effort among the Kitwe City Council (KCC), the Kitwe District Health Management Team (DHMT), USAID/Zambia, and the Environmental Health Project (EHP). This effort received support from the Zambia Child Health Project (ZCH), implemented by USAID's Basic Support for Institutionalizing Child Services (BASICS) project.

USAID/Zambia's commitment to implementing urban partnership projects made KUHP possible. Paul Zeitz and Paul Hartenburg facilitated this activity and provided networking support with Zambian health officials in the Ministry of Health and Central Board of Health. They contributed substantially to the activity's success.

The implementation of this activity involved numerous EHP team members in collaboration with their Zambian counterparts. Dr. Christine Manyando of Tropical Diseases Research Centre (TDRC) served as the in-country representative for EHP. TDRC staff, under the leadership of Dr. Thomas Sukwa, provided invaluable technical input during the planning and implementation of the activity.

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In Kitwe, the District Health Management Team members of the KUHP Working Committee, the Kitwe City Council, health center staff in the three targeted communities, and the women and men who serve on neighborhood health committees were crucial to the activity. Dr. Cleto Chashi, acting director of DHMT, welcomed the project and the team, sacrificing in many ways to accommodate their needs. Promise Kaminsa and Dalley Kafwimbe served as key links among KCC, DHMT, and the neighborhood health committees. The willingness of DHMT and KCC to listen to Kitwe residents helped this program become a fully community-based activity, and the willingness of the communities and their neighborhood health committees to contribute their time, effort, and ideas strengthened the ability of DHMT and KCC to oversee the programs.

ACRONYMS

ARI	acute respiratory infection
BASICS	USAID-sponsored Basic Support for Institutionalizing Child Survival
CARE	CARE International
CA	cooperating agency
CBoH	Central Board of Health
CHEP	Copperbelt Health Education Project
CHP	child health promoter
CHW	community health worker
CIMI	Copperbelt Integrated Malaria Initiative
Dambo	wetland, swamp
DDCC	District Development Coordination Committee
DHMT	District Health Management Team
EHC	Essential Health Care
EHP	USAID-sponsored Environmental Health Project
EHT	environmental health technician
GIS	geographic information system
GMP	Growth Monitoring Post
HIS	Health Information System
IEC	information, education, and communication
IGA	income-generating activity
IMI	Integrated Malaria Initiative
IR	intermediate result
ITN	insecticide-treated (bed)nets

JICA	Japanese International Cooperating Agency
KAP	knowledge, attitudes, and practice
KCC	Kitwe City Council
KUHP	Kitwe Urban Health Programs
MOH	Ministry of Health
MOU	Memorandum of Understanding
NGO	nongovernmental organization
NHC	neighborhood health committee
PCI	Project Concern International
PHN	population, health, and nutrition
PLA	participatory learning and action (process)
PSI	Population Services International
SFH	Society for Family Health
SO	strategic objective
SOW	scope of work
TBA	traditional birth attendant
TDRC	Tropical Diseases Research Centre
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VAT	value added tax
ZCCM	Zambia Consolidated Copper Mines
ZCH	USAID-sponsored Zambia Child Health Project
ZIHP	USAID-sponsored Zambia Integrated Health Project

EXECUTIVE SUMMARY

In 1996 the Environmental Health Project began working on urban malaria in Kitwe, Zambia. It broadened its focus, at the request of USAID/Zambia, to include the malaria and water/sanitation components of Zambia's Essential Health Care (EHC) package and the capacity-building component of the Kitwe District Health Management Team (DHMT). The goal of EHP assistance to Kitwe Urban Health Programs (KUHP) was to *increase the capacity of the Kitwe DHMT to plan and implement an urban integrated prevention program to reduce high-risk behaviors and environmental conditions and reduce diarrhea and malaria*. Specific objectives were to

- C Increase local planning, management, and implementation capacity
- C Establish and maintain a baseline to monitor and evaluate interventions
- C Develop effective collaboration with all stakeholders
- C Develop effective coordination of cooperating agencies (CAs)
- C Plan and implement community-based interventions to reduce high-risk behaviors
- C Plan and implement community-based interventions to reduce high-risk environmental conditions

EHP achieved most of these objectives despite the fact that capacity building of DHMT and follow-up by DHMT on contacts with existing and potential partners did not evolve as originally planned. Despite these constraints, the participatory learning and action process (PLA) was successfully completed by the cooperating agencies. The PLA led to proposals for 31 community-based interventions, of which 75% were implemented and 25% were completed, or almost completed, as of March 1999.

The major accomplishments of this EHP activity, in working through the Zambia Child Health (ZCH) Project to assist KUHP, were as follows:

- C Organized three partnership meetings to involve stakeholders in joint planning for preventive health interventions
- C Created and built the capacity of a Working Committee with community, health center, and district representatives to provide participatory oversight for KUHP work
- C Developed "Health Care in the Community," a booklet for the integrated training of neighborhood health committee (NHC) members and community representatives in the Zambian Essential Health Care package.
- C Completed field studies with the Tropical Diseases Research Centre (TDRC) that clearly demonstrated the existence of urban malaria in Kitwe
- C Demonstrated that environmental management to reduce urban malaria is feasible and relatively inexpensive as a community partnership

EHP learned the following lessons during this activity:

- C Periods of health reform and decentralization usually provide a good opportunity for capacity building. However, "delinkage" can create job insecurity, which makes capacity building difficult.
- C Urban areas offer the possibility of a variety of partnerships not found in rural areas. However, local authorities must continually nurture partnerships, once they are established.
- C Working through an intermediary project has advantages and disadvantages. Logistical support and direct access to local knowledge are distinct advantages, but EHP objectives can be neglected when the intermediary project focuses on meeting its contractual obligations.

- C Liaison personnel working directly within the program should not be compensated as this raises the expectation of other local health workers to receive similar compensation.
- C Health center and community partnerships in Zambia should include the participation of the health center matron and team-building activities for all representatives.
- C It is possible to confirm the presence or absence of urban malaria through relatively inexpensive field studies.
- C Participatory assessments should examine a broader range of alternatives to prevent and reduce diarrheal disease and malaria.

Potential next steps and recommendations for USAID are to

- C Provide technical assistance to continue environmental management for malaria reduction as part of KUHP
- C Encourage the development of locally produced information, education, and communication materials
- C Encourage operations research in integrated planning
- C Encourage alternatives for funding community-based partnerships
- C Require cooperating agencies and consultants working in Kitwe to liaise closely and regularly with the working committee to ensure local input to and coordination of activities, and to respect local ownership of programs

Figure 1
Map of Kitwe

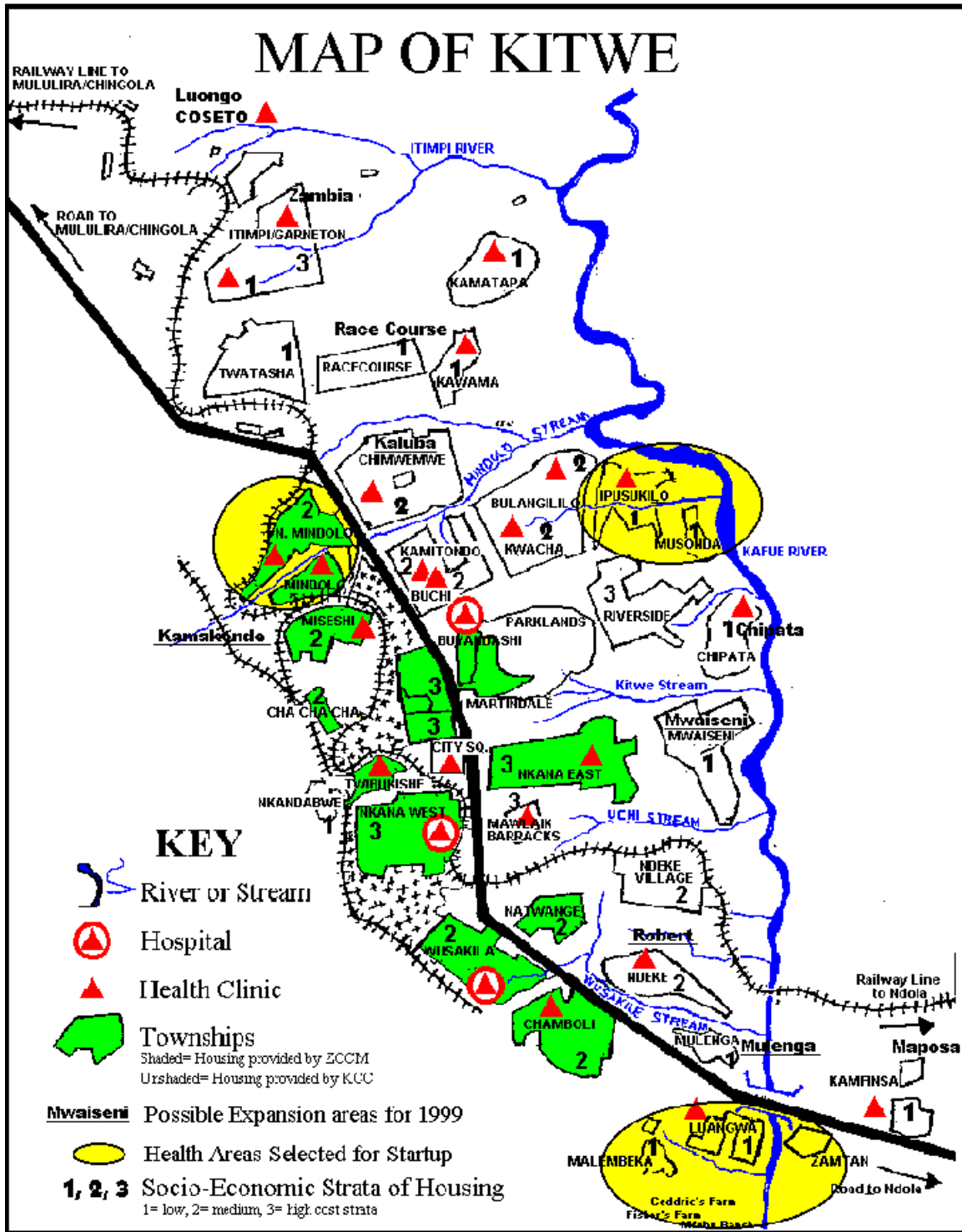
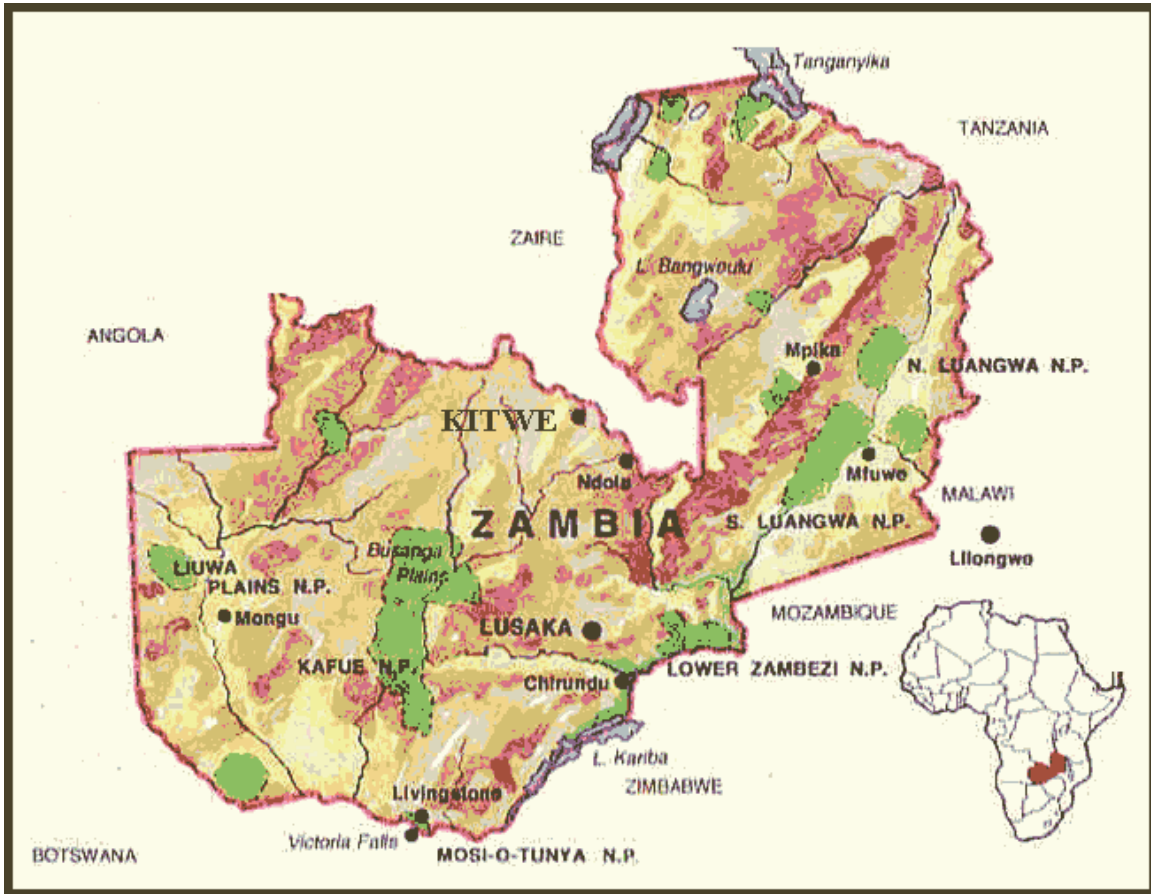


Figure 2
Zambia



1 BACKGROUND

1.1 Kitwe District

Zambia is the most urbanized country in Africa, with 46% of its 9 million people living in urban areas. Copperbelt province, one of eight in Zambia, sits on a 3,000-foot plateau bordering Congo Democratic Republic to the north. Copperbelt contains around 20% of the national population and is roughly 86% urban. The major provincial cities of Ndola and Kitwe are an approximately 4-hour drive north of Lusaka on a relatively good tarmac road.

Kitwe District, with an estimated population of 440,000, is the “Capital of the Copperbelt” and the site of one of the world’s largest copper smelting facilities, the Nkana Mine. The district is heavily industrialized, with Zambia Consolidated Copper Mines (ZCCM) accounting for roughly 50 percent of industrial activities. The sale and privatization of ZCCM, including its housing and health infrastructures, are in process.

Kitwe District is served by 18 district health centers, one hospital managed by the Kitwe City Council (KCC), and eight clinics and two hospitals operated by ZCCM. Each health center catchment area is subdivided into zones of 100 to 200 households, each zone having its own neighborhood health committee (NHC). In addition, there are a variety of community-level health volunteers, including community health workers (CHWs), traditional birth attendants (TBAs), and child health promoters (CHPs).

The District Health Management Team (DHMT) is responsible for preparing annual action plans. The DHMT offices are housed, pending the completion of decentralization, within the Kitwe City Council building. In fact, many DHMT members are still employees of KCC but would not be under the reformed, decentralized system currently implemented by the Ministry of Health (MOH) and the Central Board of Health.

1.2 Zambia’s Central Board of Health

The Central Board of Health (CBoH) was created by the MOH to coordinate the implementation of health reforms, which consist of separating policymaking from execution, promoting decentralization, enhancing accountability and responsibility, creating a leaner bureaucracy, engaging a more competent and motivated staff, and integrating planning and donor coordination. The CBoH approach is based on a cost-effective Essential Health Care (EHC) package addressing six issues which were identified as the national priority areas for health: 1) malaria; 2) safe motherhood and family planning; 3) child health and nutrition; 4) water and sanitation; 5) AIDS and sexually transmitted diseases; and 6) tuberculosis. The CBoH encourages integrated health planning incorporating all six EHC areas by districts, health centers, and communities in collaboration with external partners to support community-based interventions and partnerships.

1.3 USAID/Zambia

USAID/Zambia has developed a results framework to support Zambia's health reforms. USAID's goal of "sustainable improvements in the health status of Zambians" is based on the strategic objective of achieving "increased use of integrated child and reproductive health and HIV/AIDS interventions." USAID's strategic objective has five intermediate results (IRs):

- IR1: Increased demand for population, health, and nutrition (PHN) interventions among target groups
- IR2: Increased access to PHN interventions through community partnerships
- IR3: Increased access to PHN interventions through public-private partnerships
- IR4: Improved health worker performance in prevention and curative services and management
- IR5: Improved capacity for policy analysis, planning, and support for delivery of PHN interventions

1.4 Cooperating Agencies

USAID activities under the health strategic objectives were implemented by a small set of cooperating agencies (CAs). The CAs were given the task of integrating USAID's support to health reforms over the range of specialities covered by the Essential Health Care package.

Basic Support for Institutionalizing Child Survival (BASICS), a centrally funded USAID project, implemented the Zambia Child Health Project (ZCH), which has as its primary mandates child health and nutrition at the health center and community levels. ZCH adopted the participatory learning and action process (PLA) to help health centers and communities jointly assess their health status and identify potential community-based interventions to promote positive behaviors and environmental improvements. (PLA refers to a widely-used model for community-based action planning. See Appendix A for a description and findings from application of the process.)

Project Concern International (PCI) has a cooperative agreement with USAID to provide technical assistance in tuberculosis and HIV/AIDS. PCI helps health centers and communities develop community-based interventions to reduce the rates of these diseases. PCI's mandate also includes material and technical assistance for building the capacity of DHMTs.

CARE International has a cooperative agreement with USAID to provide technical assistance to Kitwe health centers in safe motherhood and family planning. CARE's assistance is focused on quality assurance methods to improve delivery of these services.

Environmental Health Project (EHP) assists USAID missions in strengthening the preventive components of child survival projects. EHP's work emphasizes prevention of diarrhea, malaria, and acute respiratory infections (ARI). This assistance focuses on low-cost, community-based, behavioral change "software," rather than infrastructural "hardware."

1.5 Kitwe Urban Health Programs

Due to the health needs of Kitwe and the lack of an urban integrated model uniting the six health thrusts, USAID/Zambia asked EHP to work with an existing USAID-sponsored project, the Zambia Child Health Project (ZCH). ZCH had developed community-based integrated programs in rural areas throughout the country, and EHP was brought into a leadership role to develop a community-based urban model for Kitwe.

EHP's work in Kitwe, which began in 1996, was originally limited to urban malaria. However, at the request of USAID/Zambia in 1997, EHP broadened its focus to include preventive interventions for malaria and diarrhea to support the malaria and water and sanitation components of the EHC package. As mentioned above, EHP was then asked to broaden its approach to promote integrated planning of all six components of the EHC package in collaboration with other cooperating agencies.

Resources and local expertise for disease prevention are very limited in the Kitwe City Council (KCC), the lead local partner for this activity, and the Zambia Consolidated Copper Mines (ZCCM), the second major provider of health care in Kitwe. EHP, in close cooperation with these partners, identified approaches to integrated health improvement which fit with the action plans of both the Kitwe District Health Management Team (DHMT) and local community-based health centers. EHP then worked in cooperation with the other external support agencies listed above to develop the Kitwe Urban Health Programs (KUHP). (For a list of selected contacts and organizational representatives, see Appendix D.)

Outcomes from KUHP were projected to be (1) a detailed participatory design of preventive environmental health interventions to reduce malaria and diarrheal diseases, (2) work plans for the implementation of these interventions, (3) indicators for monitoring the impact of the interventions, (4) detailed plans of action for partnerships through private sector and service organizations, and (5) targeted support to the implementation of certain interventions.

To launch KUHP, the EHP team established the following mission statement:

- C Develop an urban integrated prevention model for child survival to reduce the incidence of malaria and diarrhea. The model would be replicated elsewhere and the approach, results, and cost effectiveness documented.
- C Ensure that interventions are sustainable.
- C Develop local implementation capability.
- C Demonstrate effective collaboration with all stakeholders throughout the project, especially other USAID-supported cooperating agencies.

The Kitwe Urban Health Programs began with the creation of neighborhood health committees, which then registered all households within each zone as part of the initial assessment process. Following this, a rapid assessment of urban malaria was conducted in March 1996 in collaboration with EHP and TDRC to establish baseline conditions.

KUHP was officially inaugurated, however, during a start-up workshop facilitated by EHP in February 1997 to encourage a participatory discussion among stakeholders about the implementation of preventive health strategies under the 1997 Kitwe District Health Action Plan. That workshop designated a Working Committee to continue the participatory planning and implementation process. The members of the Working Committee include representatives of NHCs, KCC and ZCCM health centers, DHMT, and TDRC.

The Working Committee selected three demonstration areas for KUHP start-up, directed the participatory learning and action effort in those areas, and helped identify and link partners to NHCs for community partnerships. Table 1 illustrates other important events in the KUHP timeline.

Table 1
KUHP Timeline

Date	Activity
1996	<ul style="list-style-type: none"> C Creation of neighborhood health committees C Neighborhood health committee household registers C Rapid assessment of urban malaria C Kitwe health action plans finalized for 1997
1997	<ul style="list-style-type: none"> C KUHP start-up workshop C Organization of the KUHP Working Committee C Planning for PLA C PLAs in Luangwa, Mindolo, and Ipusukilo C Integrated management of childhood illnesses training C Development of information, education, and communication (IEC) materials C Income-generating projects (Luangwa, Ipusukilo) C Elaboration of community partnership proposals C Partnership meeting to adopt community projects C Kitwe health action plans finalized for 1998
1998	<ul style="list-style-type: none"> C Implementation of community partnerships C Household chlorination in Ipusukilo C Mindolo environmental health income-generating partnership C Environmental management for malaria reduction in Ipusukilo C Establishment of growth monitoring posts (GMPs) C Child health promoters trained for GMPs C Training NHC members in the three demonstration areas C "Health Care in the Community" booklet finalized C Mini-posters, calendars, and pamphlets prepared C Construction of VIP latrines in Luangwa market C Safe motherhood clubs formed

2 SCOPE OF ACTIVITIES

2.1 EHP's Goal, Approach, and Objectives

The goal of EHP assistance to KUHP was to *increase the capacity of the Kitwe DHMT to plan and implement an urban integrated prevention program to reduce high-risk behaviors and environmental conditions and reduce diarrhea and malaria*. This goal was in direct support of USAID's IR5 described in Section 1.3.

To this end, EHP's approach in providing support to KUHP was to increase the knowledge base, involve all stakeholders, create a vision and overall plan, facilitate community assessment and planning, and support community implementation and monitoring.

The specific objectives developed to achieve EHP's goal were to

1. Increase local planning, management, and implementation capacity
2. Establish and maintain a baseline to monitor and evaluate interventions
3. Develop effective collaboration with all stakeholders
4. Develop effective coordination of cooperating agencies
5. Plan and implement community-based interventions to reduce high-risk behaviors and conditions
6. Plan and implement community-based interventions to reduce high-risk environmental conditions

2.2 Relationship of Objectives to USAID's Intermediate Results

EHP's objectives support USAID's strategic objective for *increased use of integrated child and reproductive health and HIV/AIDS interventions* and three of its intermediate results:

- IR1: Increased demand for PHN interventions among target groups
- IR2: Increased access to PHN interventions through community partnerships
- IR5: Improved capacity for policy analysis, planning and support for the delivery of PHN interventions

Table 2 illustrates the relationships between USAID's IRs, and sub-IRs, and EHP's specific objectives.

Table 2
Relationship between USAID Intermediate Results and EHP Objectives

USAID IRs	USAID Sub-Intermediate Results	EHP Specific Objectives for KUHP
IR1: Increased demand for PHN interventions among target groups	IR1.3: Improved knowledge and attitudes through community-based communications	Objective 5: Assist health centers and communities to plan and implement community-based interventions to reduce high-risk behaviors and conditions
IR2: Increased access to PHN interventions through community partnerships	IR2.1: Improved ability of communities to deliver PHN interventions (4-5 yrs.) and to identify and solve their own problems (1-5 yrs.)	Objective 5: Assist health centers and communities to plan and implement community-based interventions to reduce high-risk behaviors and conditions
	IR2.3: Improved delivery of PHN interventions through health center-community linkages (4-5 yrs.) and improved capacity of health center staff to establish and support community partnerships (1-5 yrs.)	Objective 6: Assist health centers and communities to plan and implement community-based interventions to reduce high-risk environmental conditions
	IR2.5: Improved intersectoral linkages to strengthen the delivery of PHN interventions	Objective 3: Develop effective collaboration with all stakeholders
IR5: Improved capacity for policy analysis, planning, and support for the delivery of PHN interventions	IR5.3: Improved technical quality of the district action planning process of IR5	Objective 4: Develop effective coordination of cooperating agencies
	IR5.5: Improved monitoring and evaluation of PHN activities from the community to the national levels	Objective 1: Increase local planning, management, and implementation capacity
		Objective 2: Establish and maintain a baseline to monitor and evaluate interventions

2.3 Indicators of Achievement

Table 3 shows the indicators developed by EHP for each objective and the status of their achievement as of March 1999. See Chapter 4 for a detailed discussion of selected accomplishments related to these objectives.

Table 3
Status of EHP Objectives and Indicators

Objective	Indicator	Summary of Accomplishments
Objective 1: Increase local planning, management, and implementation capacity	1.1: Complete written integrated three-year and annual district action plans that include support systems strengthening, environmental prevention, and participatory assessment and planning	Done in part. EHP facilitated a DHMT institutional self-assessment and planning exercise. EHP also helped DHMT integrate community-based interventions into health center and district plans.
	1.2: Complete IEC and training materials for an integrated EHC package	Done. NHC booklet, pamphlets, and posters prepared with KUHP and ZCH.
	1.3: Provide training to selected DHMT and Working Committee members in planning, GIS, HIS, IEC, etc.	Done in part. HIS training provided by CBoH. ZCH took responsibility for IEC training. EHP determined that DHMT lacked the capacity to sustain a GIS system.
Objective 2: Establish and maintain a baseline to monitor and evaluate interventions	2.1: Percent of NHCs who complete the revised register and use it for local planning	Not Done. The register was revised and printed without EHP input. It has been completed by only a few NHCs.
	2.2: Strengthen or develop DHMT's HIS and GIS	Not Done. GIS was deemed beyond the capacity of DHMT at this time. HIS became the responsibility of CBoH.
	2.3: Increase the number of wall graphs with current data to monitor the six thrust indicators	Done in Part. The demonstration health centers now use wall graphs to monitor EHC activities, but this practice was not adopted by all centers.
	2.4: Rates and trends for diarrhea and malaria are monitored by health centers and DHMT	Not Done by EHP. Implementation of a new HIS was the responsibility of CBoH; it was completed in late 1998. An evaluation of its current status has just been completed, but findings are not yet available. The quality of previous health center data is not sufficient to determine trends. However, results from the 1997 PLA and TDRC malaria surveys provide baselines to measure future trends.

Objective	Indicator	Summary of Accomplishments
Objective 3: Develop effective collaboration with all stakeholders	3.1: Increase the number of partnership activities planned and percentage implemented	<p>Done. DHMT planned and implemented three partnership meetings with assistance from EHP and ZCH.</p> <p>The PLA resulted in 31 community-based interventions: 12 environmental and 19 behavioral. EHP was identified as a partner for 10 interventions.</p>
	3.2: Increase the number of IEC materials prepared in partnerships with the private sector or NGOs	<p>Done in part. A poster calendar to monitor EHC was developed in partnership with Lever Brothers.</p>
	3.3: Establish a revolving fund for bednets in collaboration with a service agency	<p>Not Done. KUHP was unable to identify a tax-free source for importation of bednets so cost-effectiveness of a revolving fund was eliminated. Bednets will be made available to KUHP in 1999 as part of the Copperbelt Integrated Malaria Initiative (CIMI).</p>
Objective 4: Develop effective coordination of cooperating agencies	4.1: Percentage of working group meetings attended by a representative of a cooperating agency	<p>Done. Approximately 25% of meetings were attended by a CA.</p>
	4.2: Complete IEC strategies and training materials regarding the six health thrusts with input from all CAs	<p>Done. The "Health Care in the Community" booklet for NHC training was developed with technical input from each CA.</p>
	4.3: Complete integrated action plans for the three start-up health centers with input from all CAs	<p>Done in part. Community-based interventions developed by NHCs have been integrated into health center plans. However, the current planning and monitoring system lacks transparency to permit NHC monitoring of the plan.</p>
Objective 5: Assist health centers and communities to plan and implement community-based interventions to reduce high-risk behaviors and conditions	5.1: Percent of communities having completed a participatory assessment process	<p>Done. All three health areas identified for KUHP start-up completed the PLA process within their catchment area. Scaling up to other zones and health areas is planned for 10 additional zones or health areas in 1999.</p>
	5.2: Percent of communities that have identified and implemented interventions to change high-risk behaviors such as use of bednets, proper hand washing, proper latrine use by under-fives	<p>Done in Part. All pilot areas identified and implemented interventions to change high-risk behaviors. Of 31 proposed community-based interventions, 19 (61%) were primarily related to behavior change. EHP was partner in two interventions for behavioral changes, e.g., increasing awareness for using ITNs.</p>

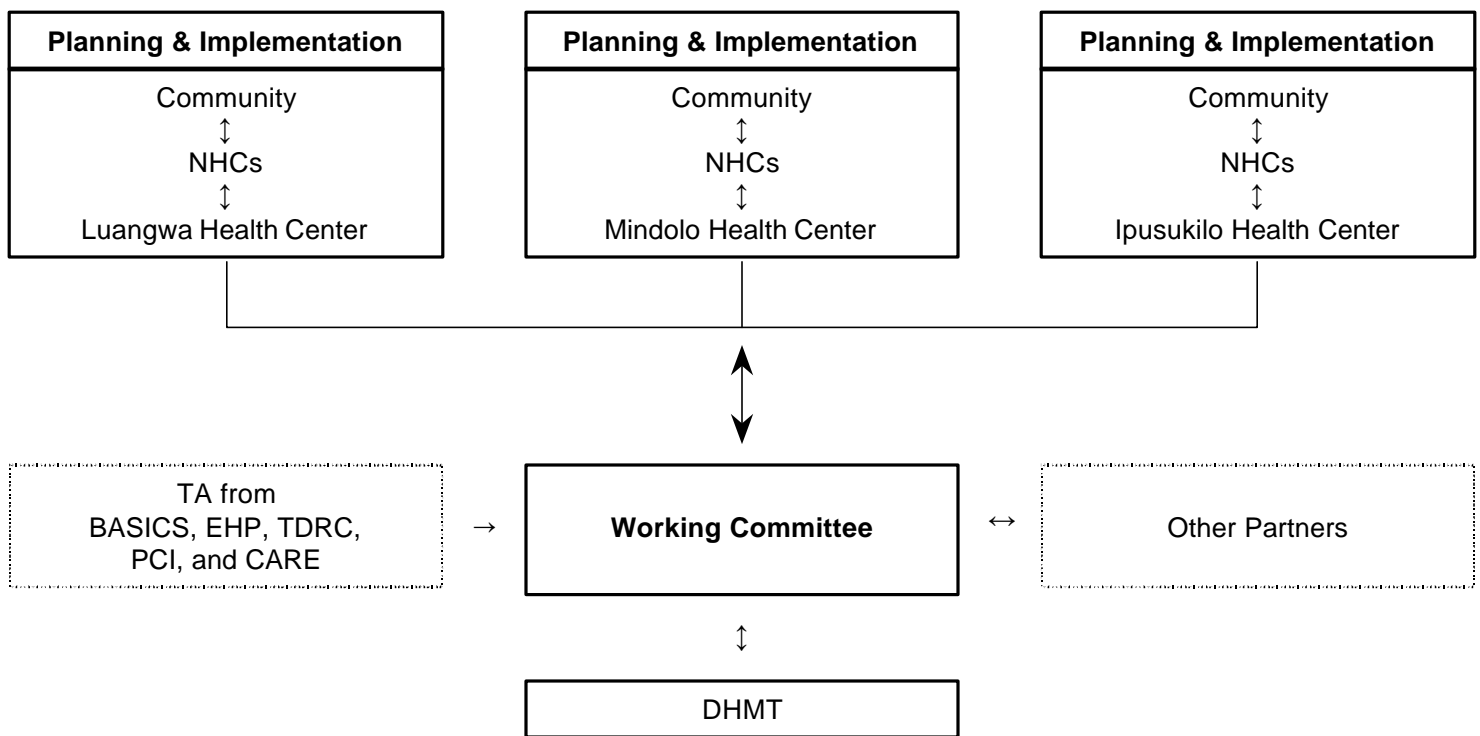
Objective	Indicator	Summary of Accomplishments
Objective 6: Assist health centers and communities to plan and implement community-based interventions to reduce high-risk environmental conditions	6.1: Percent of communities that have completed a participatory assessment process	Done. See 5.1 above.
	6.2: Percent of communities that have identified and implemented interventions such as a protected water source, latrine location, hand washing stands, and reduction of vector breeding places to change high-risk environmental conditions	Done. All pilot areas identified and implemented interventions to change high-risk environmental conditions. Of 31 proposed community-based interventions, 12 (39%) were primarily related to changing environmental conditions. EHP was a partner in eight environmental projects of which three were completed, two were begun, and three have yet to be implemented.

3 WORKING COMMITTEE EVALUATIONS

3.1 Creation of KUHP Working Committee

EHP encouraged the creation of the KUHP Working Committee for two reasons: 1) a desire to involve community representatives in KUHP planning and implementation, and 2) the uncertainty that the Kitwe City Council and/or the District Health Management Team could provide the planning and implementation KUHP required. The Working Committee was structured to receive supervision from DHMT and technical assistance from ZCH, CARE, PCI, and EHP. Figure 3 shows the relationships among the Working Committee and its partners.

Figure 3
Current Relationship among KUHP and Partners

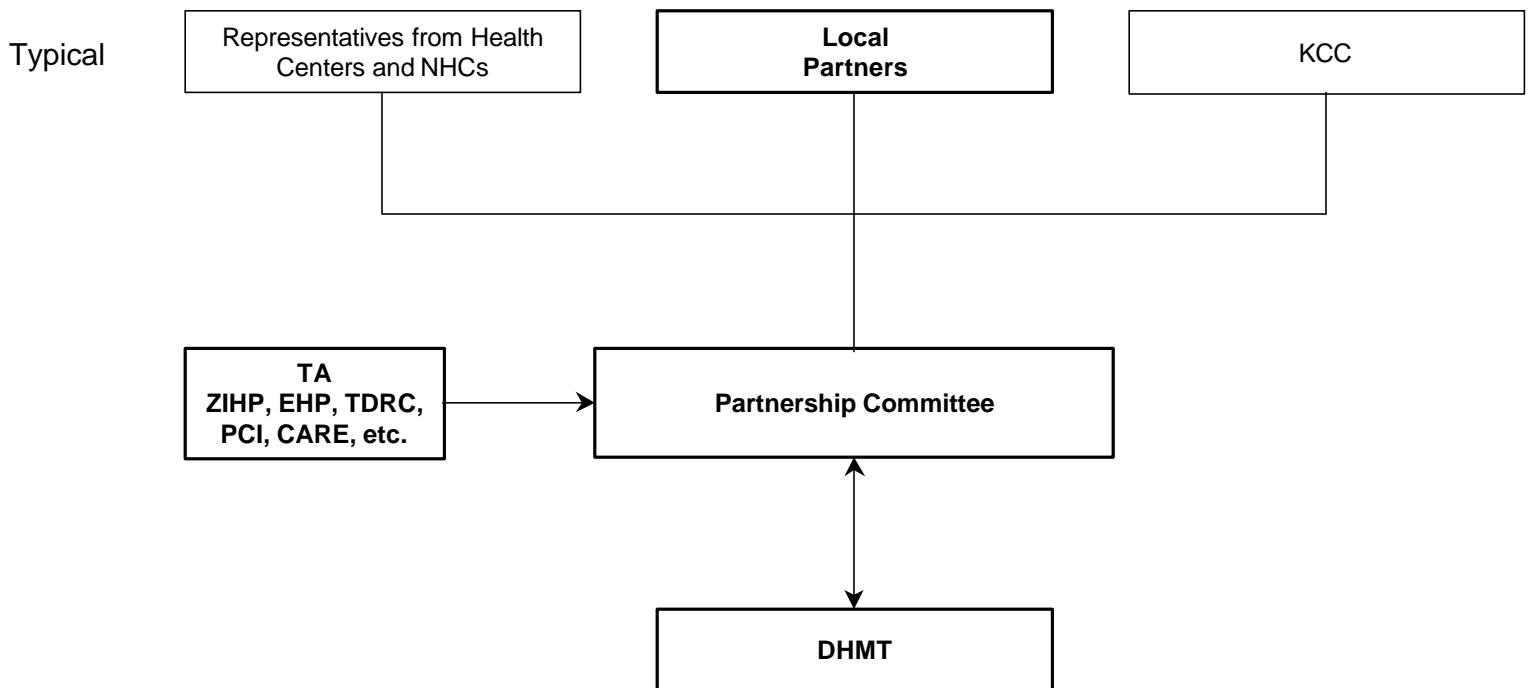


The Working Committee has met regularly during the past two years and deserves high praise for maintaining KUHP's momentum despite numerous difficulties. It has, for the most part, met or exceeded expectations about how it would function.

The future of the Working Committee is uncertain as Kitwe prepares to expand KUHP activities to 10 additional high-risk communities. If each new community were to send a neighborhood health

committee and health center representative to the Working Committee, the size of the committee could become unmanageable. An alternative currently being considered is to transform the Working Committee into a district partnership committee whose structure might be similar to the one in Figure 4. A partnership committee would include representatives of local partners, e.g., Copperbelt Health Education Project (CHEP), Lion's Club, Lever Brothers, and NHC and health center representatives from selected health areas. Such a restructuring of the Working Committee could strengthen contacts with local partners, at the same time preserving links to NHCs.

Figure 4
Proposed District Partnership Committee



3.2 Self-Evaluation of KUHP Activities

During the preparation of this report, EHP helped the Working Committee conduct a self-assessment that included questionnaires to rate, on a scale of 1 to 5, the success of KUHP and EHP activities, and to identify KUHP's accomplishments and challenges. Appendix B contains the results of KUHP's self-evaluation; Appendix C contains the Working Committee's ranking of the achievement of the 17 indicators listed in Table 3.

Members of the Working Committee rated 38 KUHP activities on a scale of 1 (poor) to 5 (great). The scores of the 14 respondents were averaged to identify the top 10 and bottom 10 activities. Because of the small number of respondents, the differences in scores are not significant; that is, all top 10 activities should be considered equally successful (see Table 4). Community-based interventions that had already created visible structures or services such as growth monitoring, household chlorination, and dambo management were deemed successful. Activities involving support to NHCs such as the KUHP start-up workshop, PLA process (see Appendix A for a full description), NHC booklet (see Appendix E), identification badges and training, and the creation of the Working Committee were also considered successful. Activities considered least successful were

those that had encountered a major constraint and could not be implemented as planned. For example, funding from CBoH was insufficient to implement the District Action Plan, and the increase in cost of raw materials made block-making unprofitable. See Chapter 4 for a more detailed discussion of these points.

Table 4
Self-Evaluation of KUHP Activities

Top 10 Activities (range 4.33-4.85)	Bottom 10 Activities (range 2.3-3.5)
Growth monitoring and counseling cards	Luangwa block-making project
KUHP startup workshop	Peer education program
NHC "Health Care in the Community" booklet	NHC household registers revised
NHC member training	NHC household registration
Growth monitoring posts	1997 Implementation of the district/HC plans
KUHP Working Committee	1998 Implementation of the district/HC plans
Ipusukilo dambo management	Community schools for orphans/vulnerable children
PLA process in three pilot health areas	Ipusukilo block-making project
Identification badges for NHC members	Improve water and sewerage system (Mindolo)
Household chlorination project	Increase awareness and use of bednets

3.3 Progress toward EHP Objectives

Members of the Working Committee were asked to rate on a scale of 1 (poor) to 5 (great) EHP's success in attaining its specific objectives as represented by the 17 indicators shown in Table 3. The scores of 12 respondents were averaged to identify the top five and bottom five indicators, shown in Table 5. (The full ranking of 17 activities is given in Appendix C.) EHP assistance was considered particularly successful in integrated planning, IEC, and PLA. EHP assistance was considered least successful in areas where assistance was not provided as originally planned, e.g., training DHMT in HIS and GIS and establishing a revolving fund for bednets.

Table 5
Ranking of EHP's Indicators

Top Five Indicators (range 3.91-4.31)	Bottom Five Indicators (range 2.3-3.5)
1.2: Completion of IEC and training materials for an integrated Essential Health Care package	4.2: Completion of IEC strategies and training materials regarding the six health thrusts with input from all CAs
6.1: Percent of communities that have completed a participatory assessment process	2.1: Percent of NHCs that completed the revised register and used it for local planning
2.3: Increase in the number of wall graphs with current data to monitor the six thrust indicators	1.3: Training to selected DHMT and Working Committee members in planning, GIS, HIS, IEC, etc.
1.1: Completion of a written integrated district action plan that includes support systems strengthening, environmental prevention, and participatory assessment/planning	3.3: Establish a revolving fund for bednets in collaboration with a service agency.
4.3: Completion of integrated action plans for the three start-up health centers with input from all CAs	2.2: Strengthen or develop DHMT's HIS and GIS information systems

3.4 KUHP Accomplishments and Challenges

Members of the Working Committee were asked to identify at least one KUHP accomplishment of which they were especially proud. They were also asked to identify a challenge the program had encountered during the past two years. The working committee identified the following accomplishments:

1. Integrated planning and coordination

- C Working Committee became focal point for community-based interventions
- C Integrated planning with external partners occurred at community, health center, and district levels

2. Improved health center and community relationships

- C Developed closer relationship between community neighborhood health committees and health care workers and health center
- C Helped the community know whom to approach with its problems
- C Improved monitoring of community-based activities

3. Increased community awareness

- C Helped voice of community to be heard
- C NHC training helped emphasize that health is the community's own responsibility
- C PLA transferred skills to NHCs
- C Increased community awareness of essential health care

4. More community-based interventions

- C Helped three project areas implement, monitor, and evaluate activities
- C Established visible community structures to implement programs
- C Helped community reduce diseases
- C Increased household chlorination to purify water
- C Developed innovative approaches to IEC materials
- C Developed strong feelings of ownership for interventions that KUHP initiated

The Working Committee identified two major accomplishments: 1) integrated planning and coordination had improved and 2) relationships between the health center and community had

improved. These changes occurred partly because planning at the health center level was done in consultation with the community and partly because the PLA process identified community-based interventions for integration into the health center action plans.

Despite the improvement in integrated planning, the Working Committee identified a serious challenge to health center and community coordination and management of community-based interventions. When interventions are integrated into the health center action plan, they tend to be “absorbed” and lose their identity as community-based interventions. As a result, the health center, rather than the community, becomes the manager and financial accountant of the activities.

Not surprisingly, the Working Committee also identified these additional problems: a lack of local transportation for health center staff and NHCs, financial constraints and lack of transparency in management of funds, and the fact that some external partners took credit for KUHP activities. The Working Committee identified challenges to the project as follows:

1. Transportation

- C Problems with maintenance of an old vehicle
- C Lack of access to vehicles
- C Lack of transport for the health center staff attending Working Committee meetings

2. District planning and coordination

- C NHCs did not have direct contact with partners
- C Not all partners worked through DHMT
- C District partnership committee was absent
- C Lack of effective representation of DHMT on District Development Coordination Committee (DDCC)
- C Lack of transparent financial arrangements between collaborating partners
- C Some external partners took credit for KUHP activities

3. Health center and community coordination

- C Insufficient meetings and coordination between health center and NHCs
- C Lack of NHC representation on health center committees
- C In each health center, only one staff member assigned as NHC liaison, resulting in no back-up and no overall health center staff commitment
- C Lack of transparency between health centers and NHCs in resource management

4. Financial constraints

- C Insufficient and delayed funds for the district action plan
- C 5% of budget for community-based activities was insufficient
- C Insufficient mechanisms to motivate volunteers and NHCs
- C Gaps in business skills management of income-generating activities
- C Gaps in obtaining technical assistance to improve business skills of NHCs.

4 RESULTS AND ACCOMPLISHMENTS

This chapter reviews the EHP objectives and indicators, summarizing the outcomes over the three-year period of activity.

4.1 Objective 1: Increase Local Planning, Management, and Implementation Capacity

USAID/Zambia requested that EHP broaden its scope of work, which initially focused on malaria and diarrhea, to the broader goal of promoting integrated planning of all six components of the Essential Health Care package. In response, EHP provided more assistance for capacity building of DHMT and the Working Committee than was originally envisioned. EHP assistance in support of this objective included:

- C Institutional assessment and capacity building of DHMT
- C Creation of the KUHP Working Committee
- C Integrated planning at the district and health center levels

4.1.1 Institutional assessment and capacity building of DHMT

The District Health Management Team (DHMT) is responsible for the planning, implementation, coordination, and supervision of district action plans to implement the Essential Health Care package. The DHMT should be, therefore, the primary contact for external partners in planning and coordinating their assistance. During the KUHP activity, EHP always made a point of working through, rather than around, DHMT.

EHP helped DHMT conduct an institutional self-assessment in July 1997. During the assessment, the team discussed the importance of providing support systems for the implementation of the Essential Health Care package at the health center and community levels. They examined the current status and weaknesses of district support systems and proposed corrective actions to be taken in 1998.

DHMT capacity building did not evolve as hoped for several reasons. First, the CBoH policy to “delink” Ministry of Health (MOH) personnel and have them compete for DHMT positions created job insecurity and instability. Capacity building did not make sense when DHMT members’ roles and functions were likely to be changed. EHP decided to wait until the delinking process was completed and new DHMT job descriptions and personnel were in place before working on building the capacity of the new team. Unfortunately, the delinkage process was “frozen” by MOH early in 1998, and it is unclear if or when it will be completed. Meanwhile, there is no clearly defined DHMT.

Second, some health personnel in Kitwe work for the MOH, while others are in the employ of the Kitwe City Council. The Chief Health Inspector, for example, is a KCC employee reporting to the Medical Director, but at the same time the Chief Inspector serves as chairperson of the Working Committee, which reports to DHMT. DHMT is located in KCC office space but has plans to move to separate offices. DHMT uses secretaries paid by KCC to work on DHMT computers to do both

KCC and DHMT work. While a partnership between KCC and the DHMT is important, the undefined boundaries between the two lead to divided loyalties among staff.

Third, the continuity of authority needed for KUHP has not been provided due to frequent changes in DHMT leadership. Dr. Kafula, who was the KCC Medical Director, head of DHMT, and MOH Director of Public Health in 1996, left Kitwe to work for the Zambia Child Health Project just as KUHP was getting started. Dr. Chashi, the KCC medical officer, had to take over as Medical Director and Director of Public Health, as well as leadership of DHMT, without adequate preparation or experience in planning and management. Key DHMT personnel who were to be hired at the end of 1997 during the early months of delinkage were never acquired.

In October 1998, with delinkage “frozen,” Dr. Chashi left Kitwe on short notice for a year-long training program in Kenya, leaving Mrs. Mkwandire, the head matron, as acting Director of Public Health and acting head of DHMT. The KCC subsequently appointed a doctor from the Kitwe Central Hospital as Medical Director. This instability in leadership has negatively affected the planning, implementation, coordination, and supervision of the Kitwe action plan and the Working Committee.

4.1.2 KUHP Working Committee

EHP encouraged the creation of the KUHP Working Committee. Section 3.1 details this aspect of EHP’s capacity-building assistance to KUHP.

4.2 Objective 2: Establish and Maintain a Baseline to Monitor and Evaluate Interventions

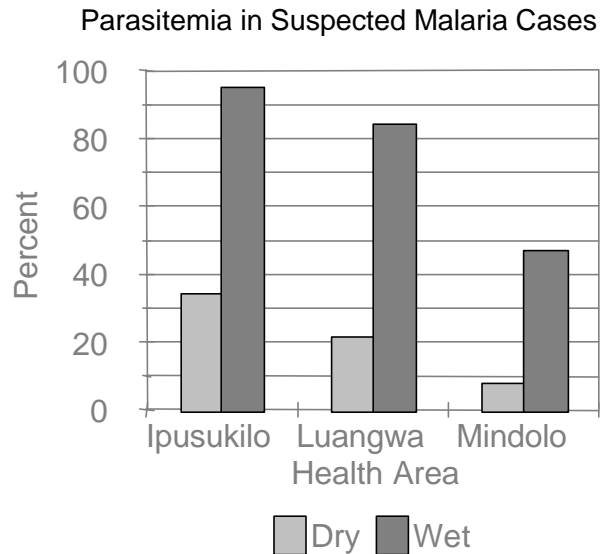
4.2.1 Malaria assessments

EHP’s first major activity in Kitwe was to conduct a rapid assessment of urban malaria in collaboration with TDRC, KCC, and ZCCM. The assessment was designed to provide information for developing community-based prevention and control measures within Kitwe District. The effort included 1) assessing environmental and entomological status; 2) measuring the prevalence of parasitemia and accuracy of clinical diagnosis; 3) assessing community knowledge, attitudes, and practices (KAP); 4) identifying institutional partners and structures; and 5) mapping of Kitwe.

The rapid assessment yielded the following findings:

- C **Environmental and entomological assessment.** The team discovered mosquitoes breeding in ponds, drums, tires, and garbage-blocked drainage areas (dambos) in all socioeconomic areas.
- C **Prevalence of malaria parasitemia.** School children registered 7.9% compared to 13.4% among those surveyed in households. There was a reported chloroquine failure rate of 20 to 40%.

**Figure 5
Malaria Prevalence**



- C **Accuracy of clinical diagnosis.** The overall percent agreement between clinical and microscopic diagnosis across wealth strata was 52.6%. There were no significant differences in this analysis between strata.
- C **KAP assessment.** Of respondents, 81% knew that mosquitoes transmitted malaria. Preventive measures taken were insecticides (25%) and bednets (3.7%). However, 40% took no measures at all.
- C **Institutional assessment.** Several NGOs and service organizations expressed interest in supporting malaria-control activities, including the Lion's Club, Rotary, and CHEP.
- C **GIS Mapping.** Maps were produced indicating road network, health facilities, and water bodies.

The rapid assessment of malaria identified additional areas for data collection: 1) evidence of autochthonous local transmission of malaria infection within the Kitwe urban/peri-urban area, and 2) the establishment of baselines to evaluate environmental management of anopheline larval breeding sites as an intervention strategy. Three follow-up studies were conducted to address these questions: a dry season study in November 1997 and wet season studies in March 1998 and 1999. The objectives were to 1) document urban breeding of *Anopheles sp.*, 2) quantify presence of *Anopheles sp.* in households, 3) establish positive parasitemia in households with anopheline presence, 4) compare clinical symptomatic presentation with positive malaria parasitemia, and 5) assess travel history to determine if malaria was acquired within the Kitwe urban area.

Malaria vector breeding sites in Ipusukilo, Mindolo, and Luangwa health areas included excavation sites for clay building blocks, roadside pools, edges of rivers flooding swamps and some fields, water collection points between field ridges and abandoned structures serving as homes for illegal squatters. The majority of anopheline breeding sites occurred on cultivation areas, and over 80% of these were considered "significant breeding" sites with more or less permanent water bodies.

The collection of malaria vectors in Ipusukilo represented 85% of all *Anopheles gambiae s.l.* caught. As many as 150 mosquitoes were caught in one house during one night in the Ipusukilo health area. The average single night light trap catches of anopheline mosquitoes in Ipusukilo households ranged from 4.0 to 28.8. In Luangwa, catches ranged from 1.0 to 8.1. See Section 4.6.2 for more details.

Malaria remains a public health concern with 34% of the febrile cases in Ipusukilo, 21.4% in Luangwa, and 7.8% in Mindolo testing malaria positive during the dry season. The prevalence of parasitemia during the wet season among 391 under-five children with fever who were screened at the clinic was 77.5%. Parasitemic densities during wet season were, in almost all cases, at least 200% greater than during the dry season. Ipusukilo had a prevalence of 94.9% of parasite positive cases among the presumptively diagnosed. Mindolo had 47% (13/91) and Luangwa had 84.4% (135/160) confirmed cases among the clinical malaria cases (see Figure 5).

The first wet season study revealed that over 89% of families testing positive for malaria parasitemia had no visits to or visitors from rural areas three weeks before the study. Among the respondents with visitors who had malaria before the study, 4.4% (17) were from other urban areas, and 0.5% (2) were from rural areas. This confirmed that malaria cases are local, originate in urban areas, and are not imported from rural areas.

4.2.2 Kitwe Health Profile

Numerous studies, surveys, and planning exercises have been conducted in Kitwe District in conjunction with the national health reform process and KUHP. In most cases, however, the district did not receive these studies or received but did not pay attention to them. As a result, planners of future activities regularly overlooked valuable information, baseline indicators, and lessons learned.

EHP and the Working Committee therefore summarized important data and key results from research and planning activities that had taken place in Kitwe District since 1996. The goals of the

resulting “Kitwe Health Profile” were to 1) increase the accessibility of information about Kitwe District by clearly capturing lessons learned, 2) improve the planning and monitoring of health interventions, 3) provide baseline data to monitor program implementation, and 4) encourage linkages among various programs and studies.

The studies reviewed (and their primary authors) are as follows:

- C KUHP Start-up Workshop (EHP)
- C The Participatory Learning and Action Process (BASICS, CARE, PCI)
- C Analysis of Health Center and NHC Household Registers (EHP)
- C District and Health Center Planning (DHMT, Luangwa Health Center)
- C Rapid and Follow-Up Assessments of Urban Malaria in Kitwe (TDRC)
- C Formative Research of Care-Seeking Behaviors (BASICS) and
- C Kitwe Cost-Sharing Study (Policy Reform Project).

The Kitwe Health Profile, completed February 1999, is available from DHMT or EHP.

4.3 Objective 3: Develop Effective Collaboration with All Stakeholders

4.3.1 Partnership meetings

EHP was instrumental in organizing three partnership meetings for KUHP to launch and maintain a participatory discussion among stakeholders on the planning and implementation of preventive health strategies for Kitwe.

The first meeting was held in February 1997, with more than 70 participants. At the meeting, neighborhood health committee representatives offered community perspectives on health priorities, and discussion groups proposed community-based interventions to resolve identified problems. The workshop successfully launched KUHP and the Working Committee.

A second partnership meeting was held in December 1997 after the participatory learning and action process had taken place in the three demonstration health areas. Each NHC was given an opportunity to present its proposal for community-based interventions and request assistance from partners. As a result, memorandums of understanding (MOUs) were developed and signed for 31 community-based partnerships.

The third partnership meeting was held in March 1999 to review NHC accomplishments in the three demonstration areas. These included a VIP latrine (Luangwa), safe motherhood clubs (Luangwa), income generation (chickens in Mindolo), growth monitoring posts (all three areas), household chlorination of water (Ipusukilo), and environmental management of malaria (Ipusukilo). Participants also discussed strategies for implementing the 1999 Kitwe District Action Plan, including possible expansion into 10 additional high-risk and needy communities. Partners were presented an opportunity to respond, and each was impressed with the NHCs’ accomplishments despite the numerous financial and coordination obstacles they had encountered. Radio and TV correspondents pledged their support to spread the word about KUHP activities.

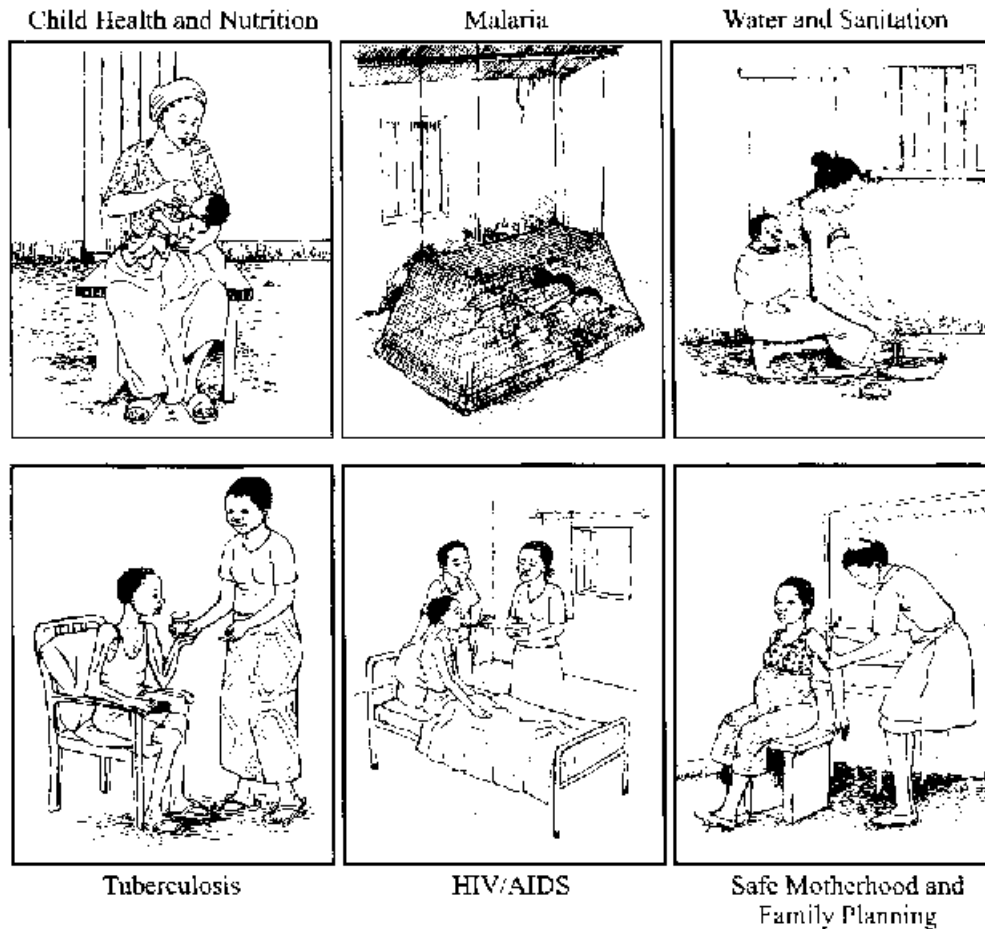
This series of meetings established a “tradition” that merits continuation at least once per year. The DHMT and Working Committee agree that they must, however, work harder to encourage more local partners to get involved. Establishing a district partnership committee (see Section 3.1) could help reinforce those contacts.

4.3.2 IEC development for Essential Health Care

EHP's key contribution was to develop the first draft of a booklet for training NHCs in the six aspects of the Essential Health Care package. (A complete copy is included in this report as Appendix E.) This activity developed appropriate IEC materials to train and motivate NHCs and promoted collaboration among agencies by inviting their technical input as well as suggestions about presentation of messages. These materials include a series of drawings to illustrate the six Essential Health Care components. A local artist later improved the original drawings proposed by an EHP consultant.

In mid-1997, the Zambia Child Health Project and the Central Board of Health selected the NHC booklet for national distribution. After field testing in Kitwe and Chipata Districts, it was completed and printed at the end of 1998. The delay in publication and KUHP's reduced involvement in finalizing the booklet created some hard feelings between the Working Committee and ZCH. The Working Committee felt that its product had been taken away and presented to outsiders as a ZCH product. On the positive side, this situation demonstrated that KUHP planners had a sense of ownership for the materials they had developed. The Central Board of Health is now distributing throughout Zambia several IEC materials that had their origins in KUHP activities in Kitwe. EHP helped KUHP develop approximately half of those materials, including the booklet for training NHCs; mini-posters, calendars, and pamphlets based on the booklet; and poster calendars (in partnership with Lever Brothers) for monitoring EHC activities.

Figure 6
Sample Illustrations for the Six Components
of Essential Health Care



KUHP has materials that should be reprinted for distribution to all health centers and NHC members. KUHP should be able to do this, with assistance from the Zambia Integrated Health Program (ZIHP) or other local partners.

4.4 Objective 4: Develop Effective Coordination of Cooperating Agencies

4.4.1 Participatory Learning and Action (PLA) Process

One of KUHP's most important activities in 1997 was the participatory learning and action process that took place in the three demonstration health areas. In collaboration with the Working Committee, CARE, and PCI, the ZCH Project coordinated the components of PLA, which included:

1. Introduce PLA team to community
2. Map resources and develop focus groups
3. Perform cluster sampling of 200 households
4. Establish transect walks

5. Map social networks and rank wealth
6. Select 80 households to interview in each of three areas
7. Collect data through household interviews
8. Analyze data
9. Report findings to community
10. Identify potential interventions
11. Develop plans for community partnerships.

EHP provided input in identifying information to be collected for malaria and water and sanitation. Baseline data gathered through this process are given in Appendix A.

As a result of the participatory learning and action process, ZCH and EHP helped the neighborhood health committees finalize 31 community-based interventions in water and sanitation, malaria, and child health and nutrition. Community-based interventions for other EHC components were to be developed in collaboration with CARE and PCI.

Of the 31 proposed interventions, 19 (61%) were related to behavioral change, and 12 (39%) were related to changing environmental conditions. EHP was a partner in 10 of these interventions, five for malaria and five for water and sanitation (see Table 6).

Table 6
Community-Based Interventions

Essential Health Care Component	Environmental Interventions			Behavioral Interventions			Total	EHP as Partner
	<i>Luangwa</i>	<i>Ipusukilo</i>	<i>Mindolo</i>	<i>Luangwa</i>	<i>Ipusukilo</i>	<i>Mindolo</i>		
Water and sanitation	2	2	4	0	1	2	11	5
Malaria	1	1	1	3	2	1	9	5
Child health and nutrition	0	0	0	4	3	4	11	0
Total	3	3	5	7	6	7	31	10

The 31 proposed partnerships were presented at the second partnership meeting in December 1997, and 75% are now being implemented (see Table 7 for their status).

Unfortunately, 1998 was not a very good year financially. Health centers and NHCs were limited in their ability to fulfill their commitments to partnerships. The DHMT received only one-third its approved budget; as a result, many community-based activities that had been integrated into the health center action plan and budget were not implemented. However, health centers and NHCs did realize some activities with their partners.

EHP and ZCH helped KUHP develop a simple monitoring system to track and provide a summary of the status of each intervention. Table 7 shows the complete list of 31 interventions and their current status. As of March 1999, seven interventions had been almost completed, and eight had been half completed. Given the circumstances and limited resources available, the NHCs have made good progress in implementing their ambitious plans.

Table 7
Status of Community-Based Partnerships

EHC Thrust ²				Name of Intervention ¹	
Luangwa's Community-Based Interventions					
!		0	WS	Increase use of boreholes and protected wells	
!	EHP	2	WS	Introduce use of VIP latrines, including block-making as an income-generating activity	
!		3	CHN	Increase growth monitoring coverage by a community-based program	
!		3	CHN	Establish Safe Motherhood clubs to increase knowledge of breastfeeding, supplemental feeding, iodated salt, Vitamin A, and home foods	
!		1	CHN	Detect and reduce malnutrition using community-based nutrition clubs	
!		0	CHN	Increase household food security by implementing income generating activities	
!		3	MAL	Increase awareness of malaria in the community	
!	EHP	1	MAL	Reduce mosquito population through dambo management	
!		0	MAL	Increase awareness and use of bednets (local production)	
!	EHP	0	MAL	Increase awareness and use of bednets (imported)	
Ipusukilo's Community-Based Interventions					
!		0	WS	Increase the availability of water	
!		3	WS	Increase chlorination of water at household level	
!	EHP	2	WS	Reduce water-borne diseases by improving sanitation, including block-making as an income-generating activity	
!		2	CHN	Reduce malnutrition among young children through increased breastfeeding	
!		0	CHN	Form women's club for income-generating activities	
!		3	CHN	Introduce growth monitoring in the community	
!		2	MAL	Increase malaria awareness in the community	
!	EHP	3	MAL	Provide dambo management	
!		0	MAL	Increase use of bednets in community	
Mindolo's Community-Based Interventions					
!	EHP	2	WS	Improve existing sewage system	
!		2	WS	Rehabilitate and improve and existing water system	
!	EHP	3	WS	Introduce chicken rearing to generate income to improve water and sanitation system	
!		1	WS	Reduce incidence of bilharzia in community	
!		2	WS	Improve health in Mindolo by involving the community in refuse collection	
!	EHP	0	WS	Win ZCCM contract to collect and dispose of refuse	
!		2	CHN	Increase exclusive breastfeeding until 6 months	
!		1	CHN	Increase family food availability to improve diets	
!		2	CHN	Increase family planning to extend breastfeeding	
!		3	CHN	Reduce malnutrition through community-based growth monitoring	
!	EHP	1	MAL	Provide dambo management	
!	EHP	2	MAL	Increase awareness and use of bed nets	
19	12	10			

- 0 = not yet started 1 = activity begun 2 = half completed 3 = completed
- WS = Water and Sanitation CHN = Child Health and Nutrition MAL = Malaria

4.5 Objective 5: Assist Health Centers and Communities to Plan and Implement Community-Based Interventions to Reduce High-Risk Behaviors and Conditions

EHP did not become as directly involved in interventions to reduce high-risk behaviors as was originally envisioned because ZCH took primary responsibility for IEC material development, strategy formation, and implementation. However, EHP helped KUHP develop a variety of IEC materials for training of NHC members and to reduce high-risk behaviors (see Section 4.3.2).

4.6 Objective 6: Assist Health Center and Communities to Plan and Implement Community-Based Interventions to Reduce High-Risk Environmental Conditions

4.6.1 Income-generating activities

EHP funded the first community-based partnerships in Kitwe in April 1997, which supported the Ipusukilo and Luangwa health centers in making cement blocks to generate income. The blocks were to be sold at a profit, which was to be used to build VIP latrines. EHP funded a third income-generating activity (IGA) in Mindolo to raise chickens for funds to improve community water (fix leaks) and sanitation (replace broken manhole covers). EHP gave each IGA approximately \$1,000 of material assistance.

Of these projects, chicken-raising proved the most successful. The Mindolo NHCs made a 200,000 Kwacha profit (approximately US\$ 150.00) on the first 200 chickens raised. This profit was calculated after paying for equipment and materials such as chicken feeders, feed, and vaccines. The NHCs are now raising a second group of chickens. The NHCs plan to use some of the funds generated by this activity to buy sewer rods for unblocking sewer lines and to make manhole covers. They also plan to build their own chicken run to replace the one they currently lease.

Block-making proved to be less successful as an income-generating activity. While a feasibility study showed that a significant profit could be made from producing and selling blocks, two factors worked against the project. First, soon after the activity began, the price of raw materials doubled, but the market base for blocks increased only slightly. Thus, the profit margin for the activity was reduced significantly. Second, the communities lacked sufficient business management skills to operate with such a small profit margin. One of EHP's conditions for funding this activity was that the community and DHMT identify a local business person or NGO to help them manage the funds. This did not happen, and the activity suffered as a consequence. Ipusukilo has largely abandoned the initiative, while Luangwa has invested its block-making revenues in chicken-raising.

4.6.2 Environmental management for malaria control

Environmental management activities to reduce mosquito breeding sites are not new to Kitwe. In the mid-1950s, the KCC Engineering Department combined channelization and tree planting to transform a wetland dambo into the urban Freedom Park. The steps in implementing this activity included:

1. Clearing existing drains or digging new drains
2. Filling the cleared or new drains with stones to make them permanent surface drains (French drains)
3. Filling and leveling previously excavated areas
4. Planting water-intensive trees where continuously-standing stagnant water was most severe
5. Watering, monitoring, and protecting newly planted trees.

A number of prerequisites existed in Ipusukilo that made the undertaking of a community-based environmental management effort feasible. First, the area, as described above, has a history of environmental management initiatives that combine drainage and planting of vegetation to achieve large-scale improvements. Second, NHCs were already animated to make improvements to their health, the environment, and living conditions. Third, documented breeding grounds for malaria vectors exist adjacent to the neighborhoods. Fourth, inexpensive water-intensive tree seedlings and training were available to the community from a district tree nursery located next to Ipusukilo.

The partners involved in environmental management of the dambo and their roles are as follows:

- C ZCCM – Provided construction materials (e.g., stones)
- C Provincial Forestry Office – Provided water-intensive tree seedlings
- C Neighborhood Committees – Provided labor, tools, and a commitment to success
- C Kitwe City Council – Provided vehicles and logistical support
- C USAID and CAs – Provided technical assistance and financial support
- C Private Sector – Provided material procurement and bednets

Community members first identified this intervention during the PLA process. During initial meetings of the NHCs, a subcommittee was formed to oversee its implementation. The subcommittee members launched the activity by preparing a map of the selected dambo that clearly indicated principal sources of water, location and length of existing drainage network, and priority areas in which to begin implementation. Environmental management of Riverside, the targeted dambo area, began when NHC members obtained bamboo shoots at no cost from the Kitwe Supervisor of Parks, selected locations for their planting, and mobilized the community to dig holes, fill them with compost, and plant the donated materials.

Since implementation, the Ipusukilo NHCs have:

- C Mobilized 120 residents for 10 days of full-time effort each
- C Filled and leveled the worst single breeding site in the targeted Riverside dambo
- C Used fill soil and solid waste from the market area to clean up the market and fill breeding sites throughout the dambo
- C Cleared existing drains and dug new drains throughout the dambo
- C Filled new and newly cleared drains with more than 200 tons of stones
- C Planted 700 eucalyptus tree seedlings and 100 seedlings of other species (toona and acacia) with only 13% affected by vandalism
- C Compensated each laborer with one double-size, rectangular-shaped bednet for 10 days of full-time effort.

Carrying out this intervention required only four inputs: 1) transportation of stones (\$1720), 2) purchase of trees (\$183), 3) supply of tools and equipment (\$1146), and 4) compensation of laborers (\$1000), for a total cost of \$4050 as of March 1999.

The NHCs have made excellent progress in completing this intervention. It is noteworthy that most of the materials used to fill and level the dambo were taken from piles of solid waste stored in the market area. The progress of the work is shown in Figures 7 through 10 below. Figure 7 is a photo of the dambo in July 1997 with a pool of water that resulted from clay mining of building blocks. Figure 8 shows the Ipusukilo dambo in October 1998 with environmental management in progress. Figures 9 and 10 show Ipusukilo “park” as it appeared March 1999 and as it may appear in the future. (Figure 10 was taken at Freedom Park, which was once a dambo.) The Ipusukilo project includes plans to make the circumference around the trees clean, maintain the drains properly, plant additional bamboo trees to replace those

Figure 7
Ipusukilo Dambo - July 1997



Figure 8
Ipusukilo Dambo - October 1998



Figure 9
Ipusukilo Dambo - March 1999



Figure 10
Freedom Park, Kitwe



that did not thrive, continue technical assistance to monitor the mosquito breeding sites, and enjoy the park.

A comprehensive pre-intervention study of breeding sites in dambos in Ipusukilo was conducted August 18-24, 1998. With respect to the environmental management intervention, particular focus was given to studying one dambo, Riverside. That area was identified by the members of the Ipusukilo NHC as the highest priority, given the magnitude of the breeding site, its location, and the manageability of the work for environmental improvement. As mentioned above, the major problem in this dambo was clay excavations where bricks are made for construction in Ipusukilo. Intense breeding of *Anopheles* in these sites was documented during the study.

The results of the breeding site census in August were combined with results from the earlier wet season assessment, conducted in March 1998, to serve as the baseline against which the effectiveness of the environmental management intervention would be measured. Mosquito densities quantified in houses in Ipusukilo (case) and Luangwa (control) are tabulated below, along with results of the breeding site census for Riverside dambo (see Tables 8 and 9). These data sets represent two baselines against which the effectiveness of the intervention was measured.

The first data set, shown in Table 8, illustrates the direct impact which the environmental management intervention had on reducing potential and confirmed *Anopheles s.l.* breeding sites. The second data set, shown in Table 9, illustrates the impact which the intervention had on reducing the numbers of *Anopheles* mosquitoes detected in houses in Ipusukilo near Riverside dambo. These data are displayed as a case-control comparison of findings from Ipusukilo and Luangwa.

Table 8
Impact of Environmental Management
Intervention in Riverside Dambo (Data Set 1)

Site Categories	August 1998	March 1999
Confirmed <i>Anopheles s.l.</i> breeding sites	41	15
Confirmed <i>Culicine</i> breeding sites	68	69
Dry potential sites	150	0
Wet potential sites	199	113
Frequency of <i>Anopheles</i> (percent):		
Clay mines	82.9	13.3
Drains	4.9	0
Edge of pool	4.9	46.7
Marshland	4.9	13.3
Water wells	2.4	6.7
Tree basins	0	13.3
Field ridges	0	*

* Breeding in field ridges was quantified but is not indicated here

Table 8a
Definition of Terms Used in the Breeding Site Census

Term	Definition
Confirmed <i>Anopheles s.l.</i> breeding sites	Sites where <i>Anopheles s.l.</i> larvae were found actually breeding.
Confirmed <i>Culicine</i> breeding sites	Sites where <i>Culicine</i> larvae were found breeding.
Dry potential sites	Sites that could have been recently made or are natural sites that will pose immediate danger when rains come
Wet potential sites	Sites which have water in them but where larval breeding was not identified. These sites are possibly newly made and have all the standard characteristics of <i>Anopheles</i> breeding sites.
Water Wells	Shallow water wells dug for the purposed of irrigation or domestic water
Drains	Drains made inside or around small areas of the dambo to drain the land or for bringing water to the field from a permanent water source
Edge of pool	Permanent water pools which often have grass growing on the edges in the water
Clay mines	Sites which result from excavation of clay and sand for making sun-dried mud bricks
Field ridges	Crops are often grown on top of soil mounds made by piling soil. As a result, fresh water between the ridges is exposed
Marshland	Areas where the soil is submerged in water with a thick covering of grass. Usually these areas are difficult to get access to.
Tree basins	Areas immediately surrounding newly planted water-intensive tree seedlings

Table 9
Single Night Light-Trap Catches of Anopheline Mosquitoes
(Data Set 2)

Ipusukilo (case)	March 1998 (Average of eight samplings)	March 1999
House 1	16.1	5.8
House 2	28.8	1.9
House 3	4.0	3.3
<i>Total</i>	<i>48.9</i>	<i>11.0</i>
Luangwa (control)	March 1998	March 1999
House 1	8.1	1.5
House 2	5.6	1.9
House 3	1.9	4.0
House 4	1.0	8.0
<i>Total</i>	<i>16.6</i>	<i>15.4</i>

The data in Table 8 clearly show the impact of the intervention on reducing breeding sites within Riverside dambo. Because the pre-intervention baseline was established during the dry season and again quantified in the wet season, it was anticipated that the number of breeding sites would increase. This was, not the case however. Both the reduction in the number of *Anopheles* breeding sites (potential and confirmed) and changes in the spacial distribution of sites reflect positive impacts. Confirmed *Anopheles* breeding sites in Riverside dambo were reduced by 63%, while confirmed *Culicine* breeding sites remained essentially unchanged. This would indicate that the observed reduction in *Anopheles* sites was not due to climatological conditions, but rather to the intervention which focused on the freshwater *Anopheles* breeding sites rather than contaminated *Culicine* sites. This conclusion is reinforced by the spatial distribution of *Anopheles* sites which was observed as moving from predominantly clay mines to predominantly edges of pools. The environmental management intervention focused on clay mines and drains. Whereas before the intervention, 87.8% or 36 of the confirmed *Anopheles* breeding sites were in these locations, only 13.3% or 2 of the confirmed sites were found in these locations after the intervention.

The data in Table 9 indicate that the mosquito population in Ipusukilo was reduced concurrent with the environmental management intervention. These data show a 78% reduction in trapped mosquitoes in Ipusukilo. In Luangwa, which was put forward as a control location where no environmental management intervention was carried out, the data show a 7% reduction in trapped mosquitoes. Therefore, no argument can be made that the significant reduction observed in Ipusukilo can be attributed to climatological or other macro-level environmental conditions. At the same time, however, the significant reduction observed in Ipusukilo concurrent with the intervention cannot be conclusively attributed to the intervention itself due to the limited number of houses monitored and other variables. For example, increased community awareness or localized environmental conditions may be alternate causes of the large reduction.

Both data sets show positive results concurrent with the intervention. It is possible to attribute significant breeding site reduction in the Riverside dambo to the intervention. This is the case even though the water-intensive trees which were planted as part of the intervention have yet to grow to sufficient size to contribute significantly to reduction of the number of breeding sites. The conclusion is that environmental management can reduce both the number of vector breeding sites and the presence of vectors in households. It is strongly recommended that a similar study be carried out in the future after the water-intensive trees have grown sufficiently and other dambos in Ipusukilo have been similarly managed.

5 LESSONS LEARNED

5.1 Capacity Building and Decentralization

Health reforms and decentralization usually provide a good opportunity for capacity building. However, “delinkage” can create job insecurity that makes capacity building difficult.

Normally, a period of decentralization provides a good time to do capacity building. Decentralization involves the shift of decision-making powers from a central to a peripheral level for planning and implementation of activities and budgets. If properly done, the devolution in responsibilities also increases program ownership and effectiveness at the local level. These increases in responsibilities usually provide a good opportunity for capacity building of district health management teams. That is, increased responsibilities for planning and implementation can be accompanied by increased training and capacity building in planning skills.

In the case of Zambia, however, decentralization was accompanied by a delinkage in the employment structure of health personnel. The CBoH policy to delink MOH personnel and have them compete for each position created job insecurity and instability that made capacity building difficult. Delinkage typically meant that the entire DHMT changed. EHP decided to wait until the delinkage process was completed and new DHMT job descriptions and personnel were in place before beginning capacity-building programs. Unfortunately, the MOH “froze” the delinkage process for most of this activity, and it is unclear if or when it will be completed.

In the case of Kitwe, opportunities for capacity building were further confounded by the fact that some health personnel in Kitwe work for the MOH, while others are employed by the Kitwe City Council. With unclear lines of responsibility, it was difficult to know who was responsible for which aspect of KUHP. Also, frequent changes in DHMT leadership did not provide the continuity necessary for capacity building.

5.2 Urban Area Partnerships

Urban areas have a variety of partnerships not found in rural areas. However, local authorities must continually nurture partnerships, once they are established.

Dr. Panduka Wijeyaratne provided EHP technical assistance that was instrumental in exploring potential partnerships for KUHP. This included establishing contacts not only with the DHMT, KCC, and ZCCM, but contacts in the private and social service sectors, including Lion’s and Rotary Clubs, Lever Brothers, and Gamma Pharmaceutical. (See Appendix D for a list of selected contacts with various organizations.) These contacts bore fruit at the KUHP start-up workshop, which was attended by many private sector and NGO partners who expressed a keen interest in working with KUHP.

However, DHMT, as the lead local facilitator of health-related partnerships in Kitwe, did not sufficiently nurture those initial contacts. One of the first partnership activities, for example, was with Lever Brothers, which printed a large poster calendar for 1997 titled “Monitoring the Six Health

Thrusts in Kitwe.” Once established, this partnership could have continued as an annual activity. However, DHMT’s failure to maintain the partnership resulted in Lever Brothers, and other private sector and NGO partners, losing interest.

KUHP needs to identify strategies to nurture and improve these partnerships with minimal external assistance. For example, the DHMT might consider splitting responsibilities among DHMT members; emphasizing direct contact among NHCs, health center staff, and partners; and transforming the Working Committee into a district partnership committee.

5.3 Working through an Intermediary Project

Working through an intermediary project has advantages and disadvantages. Logistical support and direct access to local knowledge are distinct advantages of cooperation, but EHP objectives can be neglected when the intermediary project focuses on meeting other contractual obligations.

Since 1997, all EHP assistance was provided through, and in the name of, the Zambia Child Health Project. The advantage of this arrangement was that ZCH staff were designated to monitor and assist KUHP on a continual basis. The disadvantage, however, was that those staff persons could be easily distracted or “detoured” to give priority to other ZCH objectives. The ZCH project was under a great deal of pressure to meet its contractual obligations to USAID. EHP’s objectives were sometimes not given the attention or resources they required. For example, the ZCH Kitwe contact person was obliged to spend the last six months of 1998 building growth monitoring posts and had little time to work on EHP-related activities.

5.4 Compensation of Liaison Personnel

Liaison personnel working directly within the program should not be given special compensation as this raises the expectation of other local health workers to receive similar treatment.

EHP’s work in Kitwe began in 1996 with the rapid assessment of urban malaria. At that time, EHP did not expect to work through ZCH. EHP negotiated a contract with TDRC to conduct the assessment, including compensation for TDRC staff and support personnel. In 1997, when EHP was asked to work through ZCH, no ZCH staff person was available to work closely with Kitwe. EHP therefore decided to continue the contract with TDRC to provide ongoing technical assistance to KUHP and to serve as the principal local contact. At the same time, however, the new contract renewed compensation for TDRC and local staff to continue as EHP’s contact within KUHP. This arrangement eventually created a problem because people working with EHP wanted compensation for their efforts.

5.5 Team Building at the Health Center Level

Partnerships between health centers and communities should include the health center matron and team-building activities for all health center and community representatives.

One gap identified by the Working Committee was that health center staff were not involved in the neighborhood health committees’ work. Designating a community focal person on the health center staff has the advantage of clearly identifying who is responsible for the program. The program,

however, can become overly dependent on that one person. NHC members reported, for example, that in the absence of the focal person, no one else at the health center knew about the program or seemed to care about the NHCs' community-based work.

This situation could have been avoided had EHP and ZCH included more team-building activities for health center staff, NHC members, and joint committees that included both health center and community representatives, e.g., the health center finance committee.

5.6 Presence of Urban Malaria

It is possible to confirm the existence or non-existence of urban malaria through relatively inexpensive field studies.

Through a relatively inexpensive series of field studies, baselines of breeding areas, household vector presence, positive malaria identification, and personal habits of mobility, the presence of malaria can be established and preventive interventions proposed. This procedure was followed in Kitwe, confirming autochthonous urban transmission of malaria.

5.7 Community-Based Environmental Health Improvement

Participatory assessments should examine a broader range of alternatives to prevent and reduce diarrheal disease and malaria.

Community assessment methodologies do not always give communities a full range of clinical and extra-clinical options to decrease diarrheal disease and malaria. It was originally proposed, for example, that the participatory learning and action process in Kitwe would give communities a limited "menu" of 14 essential health behaviors. However, the PLA team eventually modified this plan to offer a broader range of alternatives. To prevent and treat malaria, for example, the team presented for the community's consideration a site-specific combination of community-based interventions including early treatment, prophylaxis, insecticide-treated materials, and environmental management.

6 PROSPECTS FOR SUSTAINABILITY

6.1 Integrated Planning and Funding of Community-Based Interventions

Integrated planning at the health center and community level has improved dramatically in Kitwe during the past two years, but to sustain this planning, several concerns must be addressed. CBoH planning instructions for developing the health center and district action plans are detailed and emphasize planning of the Essential Health Care components of the health center and community-based activities. Even though they are conceptually sound, when community interventions are integrated into the health center action plan, they tend to be “absorbed” and lose their identity as community-based interventions. As a result, the health center, rather than the community, becomes the manager and financial accountant for the activities.

Several possibilities exist for strengthening and sustaining integrated planning at the health center and community levels.

First, any planning process whose content and format are rigidly driven from the central level will result in plans that look alike at the decentralized level. When a district action plan exceeds 700 pages, as did Kitwe’s in 1998, its usefulness is suspect, especially when the district receives only 31% of its approved budget. CBoH should allow demonstration districts to experiment with alternative ways of developing integrated plans to create local ownership of the plan and maintain the community-based partnerships. This is an area where collaboration between two of the three contracts which comprise USAID’s Zambia Integrated Health Project (ZIHP) could be facilitated. Collaboration between the holder of the contract dealing with community partnerships (ZIHP 1) and the holder of the contract dealing with policies and planning (ZIHP 3) around this topic would be beneficial.

Second, the CBoH should consider significantly increasing the percentage of the health center budget allocated for community partnerships. Currently, these partnerships are designated to receive 5% of the health center budget and are usually the first area to go unfunded when the center’s income is lower than planned. While a separate fund does exist at CBoH that could support community partnerships, the probability of obtaining this funding appears slim. See Section 6.3 for an additional proposal relating to funding community partnerships.

6.2 Working Committee Partnerships and KUHP Expansion

KUHP should identify strategies to nurture and improve partnerships with the private sector and NGOs. This work should not be dependent on one person or organization. The DHMT or Working Committee might consider splitting responsibilities among members; for example, a member of the Lion’s Club could be responsible for promoting partnerships with Lion’s and Rotary clubs. The Working Committee should emphasize direct contact between NHCs and health center staff and partners. For example, Ipusukilo lost 5,000,000 Kwacha that the Rotary Club had promised for a borehole because documentation for the grant was handled by KCC rather than directly between the health center and the Rotary Club.

As KUHP prepares to scale up activities to additional high-risk communities, the structure and operation of the Working Committee should be re-examined. If each new community sent an NHC and health center representative to the Working Committee, the size of the committee would become

unmanageable. KUHP should consider transforming the Working Committee into a district partnership committee that would include representatives from local partners, e.g., CHEP, Lion's Club, Lever Brothers, as well as NHC and health center representatives from selected health areas. Restructuring the Working Committee could strengthen contacts with local partners, at the same time preserving links to NHCs.

6.3 Alternative Support for Preventive Environmental Health

As noted in Section 6.1, only 5% of the health center budgets is allocated to community partnerships and environmental health interventions. CBoH might establish an alternative funding source by designating part of the health center cost-sharing income for community partnerships. The current policy is that 80% of health center receipts may be used by the health center. In practice, this policy is not well implemented because health centers must “beg” the district to requisition purchases using their funds. Managing these funds to give more control to the health center finance committee, which should include NHC representatives, and designating at least 20% of those funds for community partnerships could empower local ownership and sustain community-based activities.

Income-generating activities and NHC contributions are another funding source for preventive environmental interventions. “Matching” or supplementing these local resources with resources from local and external partners is necessary, however, if community-based interventions are to expand as KUHP envisions.

USAID will continue some activities of the Zambia Child Health Project through the new Zambia Integrated Health Project (ZIHP). However, direct funding of interventions is not foreseen. The Integrated Malaria Initiative, which USAID began in Eastern Province, was reorganized in late 1998 to include five districts, including Kitwe. In collaboration with funding from JICA, this expanded initiative will create the Copperbelt Integrated Malaria Initiative with an office in Kitwe. Through ZIPH and CIMI, therefore, USAID has laid the groundwork to continue and expand activities in Kitwe and to provide assistance to KUHP.

6.4 Recommendations

Several activities occurred in the past two years that could possibly slip through the cracks if ZIHP and CIMI do not give them special attention. EHP recommends, therefore, that USAID consider the following next steps.

1. Provide technical assistance to continue environmental management for malaria reduction as part of KUHP.

This would involve maintenance support and impact studies in Ipusukilo and scaling up environmental management to other health areas if it continues to show potential. The cost of environmental management as carried out in Ipusukilo is modest. The cost of programs for Luangwa and Mindolo would be even less since their dambos are not as complex. TDRC and EHP could continue to work together to provide technical assistance through ZIHP and CIMI. With USAID coordination, the bednet-for-work arrangement, which was successfully applied in Ipusukilo, could be expanded to prevent malaria through two complementary interventions.

2. Encourage the development of locally produced IEC materials.

If decentralization means shifting decision-making to local levels, it also means accepting—and encouraging—a variety of approaches. USAID should encourage ZIHP to devote more resources

to the local production of IEC materials than was done under ZCH. This would decrease reliance on the centralized production of IEC materials, at the same time increasing local adaptation and ownership of IEC materials.

3. Encourage operations research in integrated planning.

USAID and the CBoH should allow demonstration districts to experiment with alternative ways to develop integrated plans at the health center and district levels. This would create local ownership of the plan and maintain the identity of community-based partnerships. Collaboration between ZIHP 1 (community partnerships) and ZIHP 3 (policies and planning) would then be especially important. Doing this as operations research is a good way to field test potential policy improvements.

4. Encourage alternatives for funding community-based partnerships.

USAID should encourage CBoH to increase significantly the percentage of health center budget allocated to community partnerships and designate a significant amount of health center cost-sharing income for community partnerships (see Section 6.1 for details).

5. Require CAs and consultants working in Kitwe to liaise closely and regularly with the Working Committee to ensure local input and coordination of activities and to respect local ownership of programs.

Both ZCH and Society for Family Health (SFH) created situations in which they were perceived as taking a KUHP activity and “re-labeling” it a ZCH or SFH product. ZCH was justified in finalizing and printing the NHC booklet at the central level, as was SFH for printing “Chlorin” labels that could be used by several chlorine producing projects. However, taking these actions without providing explanations or involving the Working Committee was unacceptable. In both cases, a small change in approach could have avoided hard feelings. For example, listing the ZCH IEC coordinator as “editor” rather than “major contributor” and the KUHP members as “contributors” rather than as “other contributors” would have been acceptable to the Working Committee.

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APPENDIX A: The Participatory Learning and Action Process (from reports by CARE, PCI, and BASICS)

[This material is excerpted from *Kitwe Health Profile: A Compilation of Data and Recommendations from Selected Studies and Reports in Kitwe District, Zambia.*]

One of the primary data collection activities (in Kitwe) was the Participatory Learning and Action (PLA) conducted in collaboration with BASICS, CARE, and PCI. This methodology is also known in reports as PUA (Participatory Urban Appraisal) and PA (Participatory Appraisal) process.

The purpose of the PLA is to assist the district, health centres, and communities to explore health problems and causes, prioritize health needs, collect qualitative in-depth information, formulate a quantitative behavioural baseline, and develop health centre-community work plans and budgets.

The various types of data collected during the PLA process are summarized in Table 1. Baseline indicators are given in Table 2.

Table 1
PLA Tools and Information Required

Transect walk	To give the PLA team a feel of the area where they will be working and an opportunity to introduce themselves to community representatives.
Resource Map	To understand local infrastructure as perceived by community members
Historical Time-line	To understand major past events that took place, the effect these events had on community members, and how these affect the current settlement problems.
Social Map	To classify households by wealth categories and to identify sample households.
Wealth Ranking	To enable community members to develop wealth criteria for the settlement and apply it to individual household classification.
Body Mapping	To gain an understanding of community knowledge of the reproductive system
Ranking	To allow community members to prioritise issues and make comparisons.
Focus Groups	To allow in-depth discussion of topics of interest.
Venn diagrams	To identify community institutions and allow community members to show importance and/or significance of institutions to their lives.

From the "Luangwa Baseline Study" prepared by CARE International in Zambia, 1997.

Table 2
Baseline Indicators from the KUHP Participatory Learning and Action Process

Indicator	Luangwa		Ipusukilo		Mindolo	
	Proportion	%	Proportion	%	Proportion	%
# Caretakers (# children <2)					71 (77)	
1. Infants 0-6 mos. exclusively breastfed	5/15	30	12/19	63	8/30	27
2. Children 12-23 mos. who received one Vitamin A in past 12 mos.	38/43	88	54/55	98	41/41	100
3. Children 12-23 mos. failing to thrive (weight checked in last two mos.)	10/49	20	15/66	22	22/51	43
4. Children 12-23 mos. who received >=5 snacks/meals in past 24 hours	11/43	26	12/54	22	11/41	27
5. Caretakers using iodized salt in home	21/71	30	25/80	31	31/82	38
6. Caretakers pregnant and using iron supplements	0	0	0	0	2/4	50
7. Caretakers who know >=2 signs for seeking care for sick infant/child	67/71	94	78/80	98	81/82	99
8. Households with children <2 owning a mosquito net	8/71	11	7/80	11	13/82	16
9. Children <2 who slept under mosquito net in last 7 nights	3/77	4	7/80	7	17/82	21
10. Households with children <2 (wc<2) who get water from stream/river/spring	2/71	3	2/80	3	0/82	0
11. Households with kids <2 use unprotected well as primary drinking water source	66/71	93	2/80	98	0/82	0
12. Caretakers with kids <2 store drinking water in narrow-necked covered container	47/71	66	57/80	71	60/82	73
13. Households with kids <2 having either flush system or well maintained latrine	21/71	30	15/80	19	52/82	63
14. Caretakers with soap and hand washing location	6/71	9	23/80	29	50/82	62
15. Children with illness in past two weeks treated at home	33/51	65	24/76	32	32/48	n/a
16. Children <2 with diarrhea in last two weeks who received ORS or home fluids	11/20	55	12/19	63	17/24	71
17. Children <2 with fever in past 2 weeks who received an antimalarial		26	15/31	48	10/28	36
18. Children <2 with cough, fast or difficult breathing who received an antibiotic		65		45	5/36	14
19. Children <2 with watery diarrhea who received antibiotic		65	11/19	57	5/24	21
20. Children <2 who received medicine correctly in previous 2 weeks		9	1/29	3	7/25	28
21. Children <2 who were sick in previous 2 weeks and received appropriate fluids		14	2/43	5	9/48	n/a
22. Children <2 who were sick in previous 2 weeks and received appropriate food		24	1/43	2	9/48	n/a
23. Households which treat drinking water		n/a	9/80	11		n/a
24. Households which treat drinking water with chlorine		n/a	9/80	22		n/a
25. Households which treat drinking water daily		n/a	0	0		n/a

APPENDIX B: Kitwe Working Committee Evaluation Results

Self-Evaluation of KUHP

Score (5 max.)	Activity
4.85	Growth monitoring and counseling cards
4.56	KUHP start-up workshop (Feb 97)
4.55	NHC Essential Health Care booklet (begun Mar 97)
4.54	NHC member training
4.42	Growth monitoring posts
4.42	KUHP Working Committee (Feb. 97 to present)
4.40	Ipusukilo dambo management
4.33	PLA process in 3 pilot health areas (Aug.-Oct. 97)
4.33	Identification badges for NHC members
4.33	Chlorination and cholera prevention materials
4.33	Psychosocial counselling training for HIV/AIDS
4.33	IMCI training of health center staff
4.31	Household chlorination project
4.23	DHMT supervision/support of KUHP
4.18	1998 Kitwe District and HC Plans
4.15	NHC structure and meetings
4.11	1997 Kitwe District and HC plans for 1997
4.10	TDRC follow-up studies on urban malaria (Mar. 98-99)
4.08	Home-based care program
4.00	Counseling for orphans and vulnerable children
3.91	Partnership meeting of NHCs and partners (Dec. 97)
3.82	Community-based distributors
3.67	Rapid assessment of urban malaria (1996)
3.67	Mindolo chicken-raising project
3.67	Mini-posters and pamphlets from NHC booklet (Oct 98)
3.64	Latrine construction in market (Luangwa and Ipusukilo)
3.57	DHMT self-assessment and planning exercise (Jul. 97)
3.55	Calendars and T-shirts from Lever Brothers
3.50	Luangwa block-making project
3.44	Peer education program
3.42	NHC household registers (revised Jun. 97)
3.36	NHC household registration (1996)
3.25	1997 implementation of the district/HC plans
3.17	1998 implementation of the district/HC plans
3.00	Community schools for orphans and vulnerable children
2.89	Ipusukilo block-making project
2.33	Improve water and sewerage system (Mindolo)
2.30	Increase awareness and use of bednets

APPENDIX C: Ranking of EHP Indicators

Score (5 max)	Indicator
4.31	1.2: Completion of IEC and training materials for an integrated Essential Health Care package
4.17	6.1: Percent of communities that have completed a participatory assessment process
4.00	2.3: Increase in the number of wall graphs with current data to monitor the six thrust indicators
3.91	1.1: Completion of written integrated district action plans that include support systems strengthening, environmental prevention, and participatory assessment/planning
3.91	4.3: Completion of integrated action plans for the three start-up health centers with input from all CAs
3.86	6.2: Percent of communities that have identified and implemented interventions such as a protected water source, latrine location, handwashing stands, and vector breeding places to change high-risk environmental conditions
3.83	5.1: Percent of communities having completed a participatory assessment process
3.82	2.4: Rates and trends for diarrhea and malaria are monitored by health centers and DHMT
3.75	3.1: Increase in the number of partnership activities which are planned and the percentage implemented
3.64	3.2: Increase in the number of IEC materials prepared through partnerships with the private sector or NGOs
3.58	4.1: Percentage of working group meetings attended by a representative of a cooperating agency
3.43	5.2: Percent of communities that have identified and implemented interventions to change high-risk behaviors such as use of bednets, proper hand washing, proper latrine use of under-fives
3.36	4.2: Completion of IEC strategies and training materials regarding the six health thrusts with input from all CAs
3.08	2.1: Percent of NHCs that complete the revised register and use it for local planning
2.54	1.3: Provide training to selected DHMT and Working Committee members in planning, GIS, HIS, IEC, etc.
1.83	3.3: Establishment of a revolving fund for bednets in collaboration with a service agency
1.17	2.2: Strengthen or develop DHMT's HIS and GIS

APPENDIX D: List of Selected Contacts

Cleto Chashi, Director of Public Health, DHMT
Mary Mkandawire, Acting District Director of Public Health
Promise Kaminsa, Chief Health Inspector, KCC
Dalley Kafwimbi, IEC Officer, KCC
Colly Sovi, Previous Kitwe Program Officer
Mary Sieta, Kitwe Program Officer
Peter Kalenga, Health Officer, KCC
Paul Hartenburg, USAID
Paul Zeitz, USAID
Remi Sogunro, ZCH
Elizabeth Burliegh, Community Mobilization, ZCH
Bruce Mukwato, ZCH
Golden Bolla, Regional CBoH
Galvin Silwamba, National CBoH
Thomas Sukwa, TDRC
Christine Manyando, TDRC
Violet Yanduli, Community Liaison, Luangwa Health Center
Joyce Ndhlovu, Community Liaison, Ipusukilo Health Center
Rosalie Maguswi, Community Liaison, Mindolo Health Center
Florence Bota, NHC, Wusakile
Michael Mwila, NHC, Kwacha
Richard Mwanza, NHC, Ipusukilo
Shadreck Munkanta, NHC, Luangwa
Mary Mwale, NHC, Mindolo
Juliet Kunda, NHC, Mindoldo
Lynn Walker, CHEP
John Zyambo, President, Lion's Club
Chilunga Putahm, Deputy Director, TDRC
Morgan Musongele, Gamma Pharmaceutical
Masauso Mzima, PCI
Deborah Bickel, PCI
Grace Phiri, CARE
Nick Osborne, CARE
Dr. Musyani Simukonde, Chief Medical Officer, ZCCM
Jere Kambole, Chief Health Officer, ZCCM
Roy Kapembwa, Lever Brothers
Bernard Bwalya, NHC, Ipusukilo
Fred Masaninga, TDRC

**APPENDIX E: Health Care Within The
Community: A Booklet For
Neighborhood Health Committees**

photocopy of the Essential Health Care booklet: *Health Care within the Community: A Booklet for Neighbourhood Health Committees.*