

THE
CARTER CENTER



Ethiopia Public Health Training Initiative

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Introduction and Background

In 1991, former US President Jimmy Carter and Ethiopian Prime Minister Meles Zenawi discussed ways The Carter Center could help alleviate problems faced by post-war Ethiopia. One area identified as a priority was the need for supporting health science faculties, especially newly established ones that train professionals for staffing health centers that serve disadvantaged populations in remote parts of the country. Following several visits to the United States and Ethiopia by high-level delegations and a planning workshop held in 1997 in Nazareth, Ethiopia, several gaps were identified in the training of health professionals in the universities. The major gaps identified included: 1) a shortage of teaching materials of relevance to curriculum; 2) limited pedagogical, supervisory and writing skills for most junior instructors in faculties outside Addis Ababa; and 3) a lack of basic teaching aides and equipment.

The Carter Center in consultation with Ethiopian government partners in the Ministries of Education and Health started to work towards alleviating these deficiencies by setting the following objectives:

- 1) Development of teaching materials in-country;
- 2) Strengthen staff through training in pedagogical, supervisory and writing skills, and
- 3) Enhancement of the teaching-learning environment

In the initial years, workshops were organized using funding from sources other than USAID. In these workshops, strategies were defined on how to go about meeting the three major objectives. Intra- and inter-institutional workshops were conducted to gather faculty from all five universities (Addis Ababa, Alemaya, Debu, Gondar and Jimma) in order to develop teaching materials. Few modules were developed. In 2004, Mekelle University and Defence University College joined the Network. Figure 1 below identifies the location of the universities.

With time it was felt that more needed to be done to produce additional teaching materials such as modules, lecture notes and manuals, to train junior and senior faculty



Figure 1. Location of the seven Ethiopian universities

in pedagogical and writing skills, and to supply some faculties with basic equipment and teaching aides. USAID was approached because it was obvious that the seed money obtained from other donors would not meet the huge funding gap for this project. Appreciating the potential the project had for building the capacity of health science professional training universities in Ethiopia, USAID made generous funding available in September 2000. A Cooperative Agreement was signed between USAID and The Carter Center for a three year grant. This grant was later extended by two years without additional costs.

With this impetus, efforts in Ethiopia started to take shape, and the nucleus coordinating office on behalf of The Carter Center developed into the Ethiopia Public Health Training Initiative (EPHTI). Its role would be as a facilitator to help with activity implementation. EPHTI started functioning at the Addis Ababa Hilton, and later was moved into two small offices within the Ministry of Education (MOE) premises. Finally, in view of the expanding activities and the need for more space for conducting workshops and editorial activities for the teaching materials, EPHTI moved into its current site at Bole Road.

In 2001, a memorandum of understanding (MOU) was signed between the MOE and The Carter Center clearly stating that EPHTI functions within the umbrella of the MOE. This MOU was renewed in 2004 for an additional three year period.

While the implementation phase of this capacity building project was underway, USAID and Ethiopian government partners asked universities to deploy their senior health science students and instructors to areas affected by the 2002/2003 drought. The purpose was to respond to the non-food emergencies. These were primarily health problems that were aggravated due to famine. The additional result would be to equip university students with knowledge and skills to be able to respond to similar emergencies during their professional life after graduation. The Carter Center/EPHTI was approached to play a facilitating role. Proposals were developed by each university and compiled by The Carter Center for coordination of interventions, using additional funding from USAID.

The following sections briefly depict the implementation status of the Project. The narrative follows the USAID format established in the Cooperative Agreement.

Description of Activities Implemented

In this Section, we shall present all activities undertaken to meet the three primary objectives of the USAID funded EPHTI project: 1) development of curriculum materials; 2) staff strengthening; and 3) enhancement of the teaching-learning environment.

A Unique structure was established to provide technical guidance and follow-up activities on a continuous basis. The Ethiopia Public Health Training Initiative Council (EPHTIC) was formed in June 2001 at a meeting organized by EPHTI that gathered two representatives of each of the five partner universities. The EPHTIC developed its terms of reference (TOR). Its primary responsibility was to develop annual plans and monitor the implementation of activities by the universities and the EPHTI Resident Technical Advisor's (RTA) Office. Under the guidance of the Council, several technical committees were established to provide close follow up to the planned activities and report on findings (See Annex I for TOR of the EPHTIC). Annual consultative workshops and program reviews were held to supervise and monitor project progress. See Figure 2 for the Organizational Structure of EPHTI.

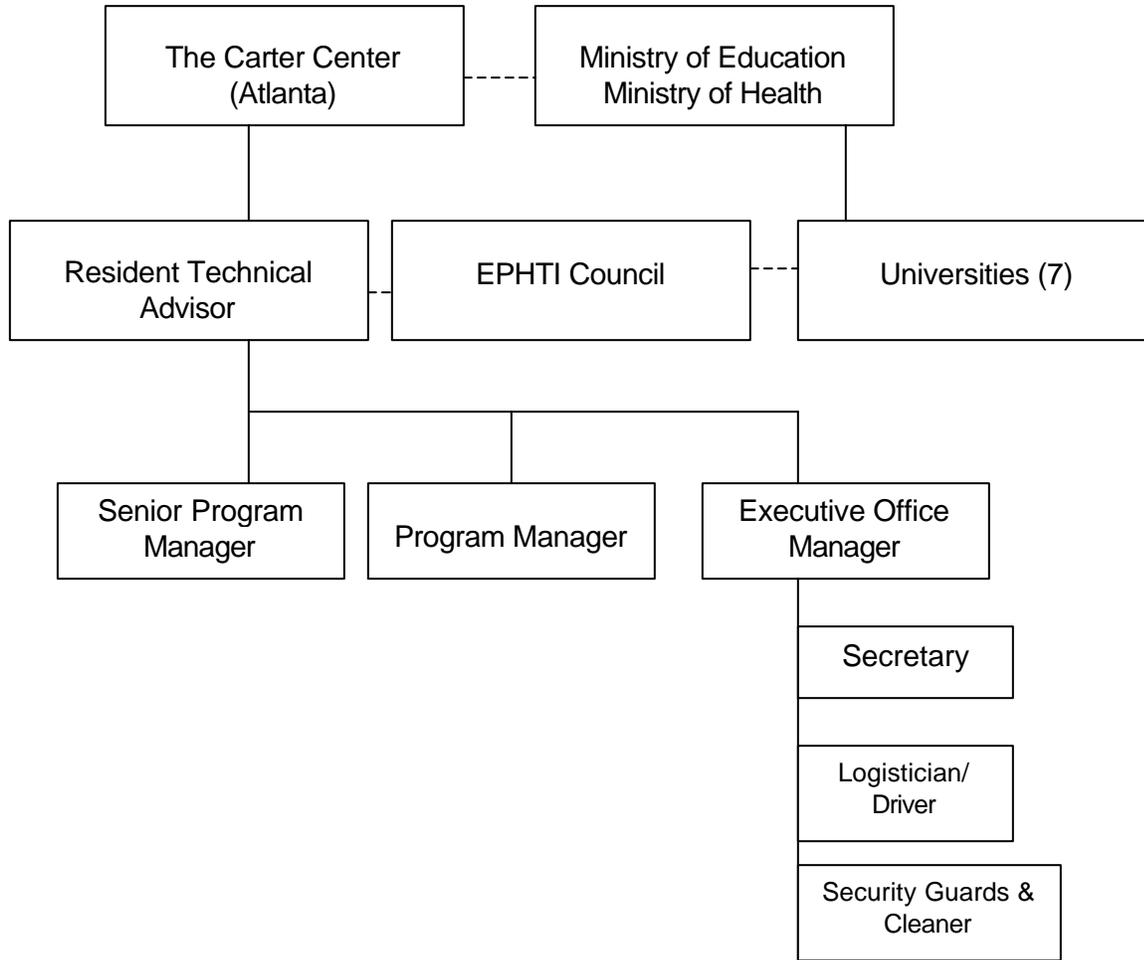


Fig 2. Organization of EPHTI

The details of implemented activities are given below:

Activities related to Objective One: Development of teaching materials

In order to meet this objective, various strategies and activities were employed. Discussions were held at annual major workshops, council and technical committee meetings and intra-institutional forums to identify health science topics based on set criteria including a) relevance to the Ethiopian situation; b) availability of other reference materials that could replace current texts; and c) availability of health science instructors with basic expertise in the field. As a result of intensified deliberations, it was agreed to develop 30 training modules, 80 lecture notes and several manuals. To develop training modules, lecture notes and manuals during this period, 214 intra-institutional workshops and 143 inter-institutional workshops were conducted.

a) Training Modules -- the training modules are structured to contain a core module that serves for training the whole ‘Health Center Team’ and satellite modules for each team member, including community level health workers. The satellite modules are based on the task analysis of each category of health science student. It also has a pre- and post-test to help students evaluate themselves.

The modules have been developed using the following process: One of the health science colleges/faculties took responsibility for developing one or more modules depending on the available capacity. The initial draft was written typically by a group of authors in the same university. The draft was then sent to the EPHTI office for forwarding to up to four external reviewers both in Ethiopia and abroad. Upon receipt of feedback from experts in the field, the module was sent back to the authors for incorporation of inputs. Once this was done, the RTA Office edited the module’s English. It was then printed in adequate numbers for distribution based on the needs of each health science faculty, affiliated training health centers, the MOE and regional health bureaus (RHBs) for use in training health science students at certificate, diploma and degree levels.

The plan was to develop 30 modules during this period, but time proved that more could be produced with continued acquisition of writing skills both through organized training and exchange of skills with fellow instructors during intra- and inter-institutional workshops for module development. Table 1 shows the number of modules developed during the period from 2001 to 2005.

Table 1: Number of modules developed each year (2001-2005)

Year	# of Modules Produced (%)	Remarks
2001	5 (9.6%)	Initial stage of learning writing skills
2002	3 (5.8%)	Initial stage of learning writing skills
2003	10 (19.2%)	Initial stage of learning writing skills
2004	3 (5.8%)	Commitment to drought response
2005	31 (59.7%)	Seven are revisions of earlier modules
Total	52 (100.0%)	

b) Lecture notes

Lecture notes are ‘mini-textbooks’ that can be upgraded to full blown textbooks in the future. They target specific subjects in applied health science, clinical and pre-clinical fields. The selection criteria for lecture note topics were similar to those of modules, but the development process followed a slightly different path. After intra- and inter-institutional reviews, the materials were sent to national experts for peer review. Once the comments and suggestions of peer reviewers were accommodated, English editing was followed by printing and distribution.

In 2003/4, the Ethiopian Government launched the Health Extension Package, a plan to train about 30,000 frontline health workers, over three years, which would be deployed to

health posts. There was an absolute shortage of teaching materials for this cadre of health workers. Therefore, the universities took the challenge positively and worked on 22 additional lecture notes to serve for training these health extension workers. The idea was not unusual to these instructors, since they were already used to developing satellite modules for the community health workers. Table 2 shows the number of lecture notes produced during this period.

Table 2: Number of lecture notes developed each year (2002-2005)

Year	# of Lecture Notes Produced (%)	Remarks
2002	9 (9.0%)	Initiated one year after modules
2003	14 (14.0%)	
2004	49 (49%)	Commitment to drought response
2005	28 (28.0%)	7 are revisions of earlier modules
Total	100 (100.0%)	

Annex II gives additional subject and institutional details on the modules and lecture notes produced during this period.

c) Manuals

No specific targets were established on the number of manuals to be developed. At best, statements were made that ‘several manuals will be developed’. Two manuals were produced during the project period: one on Reproductive Health and one on Post-abortion Care. These manuals required a significant investment of time to produce, mainly due to the larger number of experts that were needed to adequately develop them.

d) Comparison of Teaching Material Development by University:

The charts below present comparative figures of the number of materials developed by each of the six universities that participated in the development of training materials for this program.

Chart 1

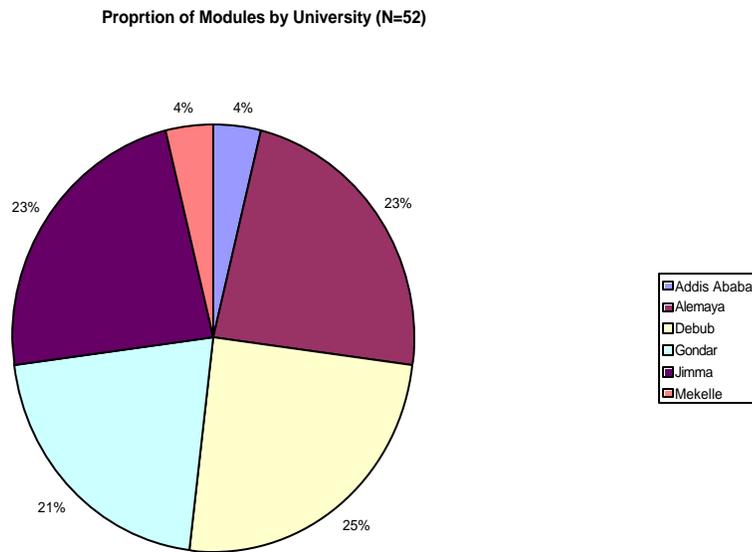
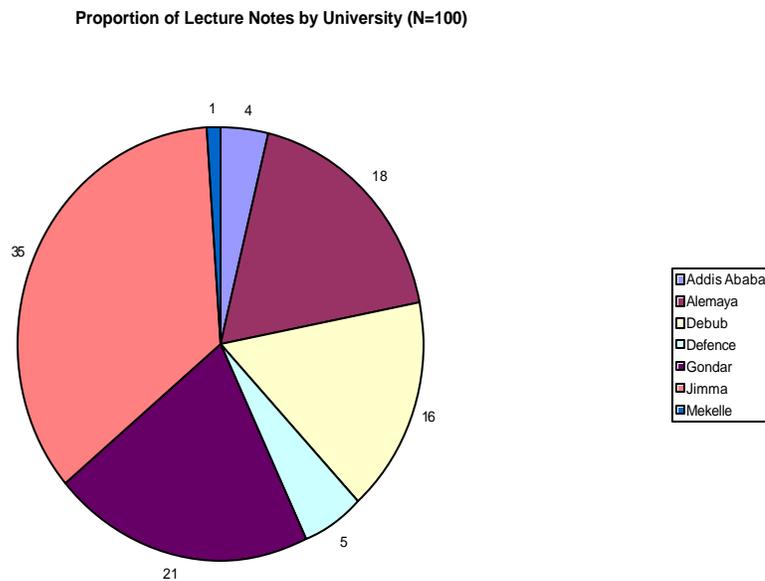


Chart 2



As can be seen, Addis Ababa University (AAU) has produced the lowest number of materials, especially in view of its long-standing participation in EPHTI. This is due to the fact that AAU gives more emphasis to graduate training and does not train complete ‘Health Center Teams’, *i.e.*, they do not provide training for health officers and

sanitarians. The most recent members of the EPHTI network, Mekelle University and Defense University are quickly gathering momentum. Future planning for the development of training materials will have to take this element into account.

e) Other related materials

In addition to materials developed by the health science instructors themselves, other materials were developed and provided to EPHTI by collaborating organizations. The Academy of Educational Development (AED)/LINKAGES, collaborated with EPHTI during this period to produce materials, based on a contractual agreement between The Carter Center and their Central Office in Washington. Some of the materials were developed and produced following intensive review to respond to the Ethiopian situation.

Activities related to Objective Two: Staff strengthening

Building the skills of instructors in the universities and health professionals in affiliated training health facilities (health centers and hospitals) has been an important component of the EPHTI. Instructors have been trained in pedagogical and supervisory clinical skills in selected areas such as nutrition, reproductive health (RH) and writing skills. In addition, staff participation in workshops to plan, develop, and review teaching materials has served as a mechanism for staff strengthening by creating opportunities for junior and less-experienced faculty to learn from those that had received training in writing skills and had participated in previous the development of materials.

a) Training in teaching methodology

It is common practice in Ethiopian universities to employ a graduate in a health science field as an instructor immediately upon graduation (this is also true for other fields). This situation threatens to compromise the process of passing knowledge and skills to prospective health professionals at a desirable level that is suitable for the academic environment. Therefore, it was deemed necessary to build the pedagogical skills of junior as well as 'senior' instructors. The latter often are named so simply based on the number of years they have served as teachers, and irrespective of the amount of pedagogical training they possess. To address this need, health science instructors were given training by international experts. The trainees would in turn train fellow teachers at their own university campuses to help them acquire skills in proper teaching methodology.

The major topics covered in these teaching methodology workshops included:

- Competency and Problem-Based Learning.
- Use of Instructional Medias.
- How to Lead a Discussion and Conduct a Lecture.
- How to Write an Exam Using Objective Questions.

Nine annual teaching methodology workshops were conducted during the summer months. These workshops have been conducted in collaboration with Emory University in Atlanta. Highly seasoned university professors came during the Ethiopian rainy season when most of the academic activities are reduced, allowing for more available faculty time for training. The training was supported by teaching guides, videos, books

and practical sessions. Senior instructors selected from each university attended the first two-week workshop. The second two-week workshop session was for junior faculty. This was done intentionally in order to encourage each group to feel comfortable among their peers

Upon successful completion of the training, participants were issued a certificate and were encouraged to practice what they had learned immediately upon return to their universities. In addition to implementing their newly acquired teaching techniques with their students, participants were also given the responsibility of training colleagues that were unable to attend the training methodology workshops. This strategy has led to cascade training workshops that have been conducted on the university campuses during the project period.

b) Training in nutrition

Training in nutrition was an essential component of the 2003/200 drought response by universities in Ethiopia, facilitated by the EPHTI. The methodology was to train university and training health facility staff in feeding practices for infants, young children and mothers. The trained instructors in turn transferred the knowledge and skills they gained to their fellow staff at each of the campuses, thus reaching a significant number of students. The students were then able to disseminate the information to the community during their studies and after graduation.

In order to carry out this project, collaborative efforts were undertaken with government and non-governmental organizations including UNICEF, AED/LINKAGES and other local and international NGOs. The project was launched based on the agreements signed between The Carter Center/Atlanta and AED/LINKAGES.

The topics covered in this nutrition training included:

i) Essential Nutrition Actions (ENA) - This training covered the state-of-the-art thinking on nutrition problems and effective approaches with which to combat them. Special attention was given to nutrition advocacy, quantifying the costs of malnutrition, and identifying specific actions and program approaches known to have a positive impact on mortality and morbidity outcomes. The following topics were covered during the training workshops pertinent to ENA:

- Why Nutrition Matters.
- Essential Nutrition Actions: The Why and the What.
- Infant & Young Child Feeding.
- Preventing Mother to Child Transmission of HIV.
- Maternal Nutrition.
- Control of Micronutrient Deficiencies in Vitamin A, Iron, and Iodine.
- Essential Nutrition Actions: Using Behavior Change Communication to Promote Optimal Nutrition Practices.
- Essential Nutrition Actions: How to Integrate Within the Health Sector.
- Essential Nutrition Actions: How to Integrate into Other Sectors.
- Planning Next Steps for Pre-service: Course Work and Field Practicum.
- Planning Next Steps for Regional Capacity Building.

The ultimate objective of the project is to achieve its institutionalization through the integration into the pre-service curricula of each of the respective universities. This effort is vigorously underway, and has already been accomplished in the newly designed health officers training curriculum.

ii) Behavior Change and Communication (BCC) – The BCC trainings were conceived as a complement the “Essential Nutrition Actions” (ENA) components. The purpose of BCC training was to train a pool of instructors already trained in ENA to further improve their knowledge and skills regarding the practical feeding of infants, young children and mothers. The actual training on BCC included strengthening participants' counseling and negotiation skills with mothers/caretakers, as well as enhancing community support groups for better feeding practices.

iii) Other programmatic issues - These cover other ENA/BCC pertinent topics addressed during the project period including:

- Lactation Management.
- Lactation Amenorrhea Method.
- Strategies of Establishing a Baby Friendly Hospital Initiative.
- How to prepare a lesson plan and conduct monitoring and evaluation regarding ENA/BCC and other issues.

International trainers and LINKAGES/AED staff gave the training at the national level while the cascade trainings were given in collaboration with trained staff at each university. Apart from some key technical up-dates, all trainings focused heavily on imparting practical skills through real-life practice with mothers and families.

For most of the courses provided, handouts and manuals were produced and distributed to trainees and trainers in hard copy and CD ROM versions. According to LINKAGES/AED guidelines, participants were tested and feedback from the field was incorporated.

During the project period (February 2003 to August 2005), a total of 761 university teaching staff and health service providers (staff from training health centers and hospitals) were trained.

c) Training in writing skills

In view of the fact that health science instructors in Ethiopia have little or no experience in writing modules and lecture notes, it was deemed necessary to equip them with some basic skills. An agreement was signed with the African Medical Research Foundation (AMREF) to train health science instructors on proper writing skills for the teaching materials that they would be engaged in developing in the future(modules, lecture notes and manuals). A two-week workshop was held in Jimma University, in March 2003. A total of 25 participants from the five universities attended.

The specific objectives of the writing skills workshops were:

- Share and exchange experiences with colleagues and other colleges/universities;
- Explain the terms *module, unit, manual, lecture notes, practical guide, student's handbook*;
- Reflect on the material that has already been written;
- Identify learner characteristics;
- Write objectives for a module;
- Write topic outlines for a module;
- Write using an appropriate language level and style;
- Apply active learning approach when writing;
- Identify suitable illustrations for the module;
- Write assignments, tests and exams;
- Explain what pre-testing involves;
- Develop pre-test instruments;
- Do some basic substantive and copy editing;
- Correctly apply the rules of cross-referencing, referencing and writing bibliography.

After completing this participatory training, the trained instructors returned and began to write various teaching materials, forming teams with other teachers. In the process they were able to share their newly acquired knowledge and writing skills with their colleagues who did not participate in the training program.

d) Intra- and inter-institutional workshops

As described under the Section on Development of Teaching Materials, instructors in each health science faculty formed teams of professionals with basic knowledge on a particular subject and took the primary responsibility to develop teaching materials. Further in the development stage of the material, inter-institutional workshops are also held to ensure the production of standard curriculum material for use in all institutions.

This exercise of intensive interaction in the curriculum material development workshops created an opportunity for sharing of experience in writing skills from faculty that had been trained through the AMREF writing workshop. This contributed towards the capacity-building of colleagues who did not participate.

e) Training in reproductive health and family planning (RH/FP) skills:

The primary purpose of the RH/FP Project was to equip instructors, service providers and health science students with the necessary knowledge and skills to effectively and efficiently impact the health of mothers and children. In order to meet this objective, the major strategy employed was training of instructors on RH/FP to enable them train other teaching staff at their respective universities and professional staff at the affiliated training health facilities (health centers and hospitals) who in turn train the students.

This project was financially supported by the David and Lucile Packard Foundation, although RH/FP was also one of the components of the drought response activities funded by USAID. The purpose of this section is to show that RH/FP was also materialized as part of staff strengthening activities conducted by The Carter Center and

EPHTI. It can be fairly said that the administrative and technical support received from USAID for all of The Carter Center and EPHTI activities has been instrumental in the planning and implementation of the project.

The major topics covered in the training of staff and students include:

- Norplant and IUCD insertion and removal.
- Post-abortion care.
- Family planning, STD and HIV/AIDS, nutrition and associated disorders.
- Building capacity for RH training and supervision skills in Ethiopia.

The training was given in collaboration with JHPIEGO and Ipas Ethiopia which also made several supervisory and supportive visits to the universities and the affiliated THFs (hospitals and health centers).

Table 3 below summarizes staff strengthening activities undertaken during EPHTI Phase I:

Table 3: EPHTI Staff strengthening activities

Type of Training	Number Trained	remarks
Pedagogical Skills	382	Includes on-campus cascade training
Writing Skills	25	Shared expertise in developing materials
Nutrition	761	Includes health service (providers)
Reproductive Health	1194	Includes health service providers and community health workers

Activities Related to Objective Three: Enhancement of the Teaching-Learning Environment

The majority of health science faculties required assistance in the form of equipment, teaching aides, books (texts and reference) and scientific periodicals. In addition, means of communication were either lacking or poorly functional, including telephone lines and internet access. Efforts have been made to enhance the teaching-learning environment in all of the partner faculties.

Procurement and distribution of much-needed office equipment has been made during this period. This includes: computers, printers, copiers, overhead and LCD projectors, and cameras. Instructors were able to use the equipment for preparation of teaching materials both individually and at the material development workshops indicated above; in classroom teaching of students and making presentations; and in the documentation of on-campus and field practicum site activities. The Field Office in Addis Ababa handled the purchase based on requests and specifications forwarded by the universities. Items worth US \$288,976 have been distributed. Details are shown in Annex III.

The EPHTI Field Office, in collaboration with representatives from the universities, has purchased and distributed laboratory and other medical equipment. Some teaching

aides/models have also been obtained from collaborating agencies such as JHPIEGO. These items have been used to establish skilled labs for practical training. The cost of this group of items purchased during the project period is US \$121,619 (See Annex III).

The Carter Center in Atlanta has been purchasing and sending books and journals for the health science faculties. Lists of books and journals were collected from the universities, discussed and then forwarded to the Head Office. Purchases were made, and the materials were shipped to the EPHTI Field Office. Upon notification of arrival of the literature, EPHTI communicated with the MOE to get tax exemption letters for fast Customs Clearance. This mechanism has been working smoothly. We were thus able to distribute books worth US \$303,143, and journals worth approximately \$45,000. See Table 4 for a summary of books received by the universities.

*Table 4: Number and cost of books distributed to universities (to be updated)*_[m1]

University	# of books	Cost (US \$)
Addis Ababa	582	\$36,228
Alemaya	838	\$44,841
Dehub	746	\$40,780
Gondar	1009	\$50,384
Jimma	739	\$40,910
Total	3,914	\$213,143

Another set of materials that served in enhancing the teaching environment are those that we received from partner NGOs and other organizations. Though the emphasis was on in-service training, such materials were still useful for pre-service training as well. Notable ones include those we obtained from AED/LINKAGES and Essential Services in Health for Ethiopia (ESHE).

The Drought Response Program:_[m2]

The drought response program started with five of The Carter Center and EPHTI networking universities in February 2003. Activities included the deployment of staff and senior (final year) health science students of six categories (medical students, health officers, nurses, environmental health, laboratory and pharmacy technicians) on a rotation basis.

The objectives of the program were:

- 1) To reduce morbidity and mortality associated with drought crises through the provision of quality and extended health and nutrition services to populations in drought affected areas where students were deployed.
- 2) To enable health science students to acquire the basic experiences necessary to deal with emergency and drought-related health and nutrition problems.

Each participating university conducted a situation analysis of the drought conditions in their respective vicinities following the unanimous positive responses from the concerned ministries and donors. Activities included the preparation of detailed program work plans to address the

ways each university would mobilize its students and faculty, and financial resources required for the intervention. The study also included a one-year timeline of activities (February 2003-January 2004), and the number and mix of students to be deployed. The role of The Carter Center and EPHTI was to facilitate the implementation of activities.

The drought response was divided into preparatory and intervention phases.

Preparatory Phase:

The following activities were undertaken during the preparatory phase:

- A series of consensus-building meetings on how to undertake the intervention;
- Identification and needs assessment of the affected communities. These included the supplies required and the available staffing pattern of the health facilities (hospitals and health centers) in deployment areas. The health institutions identified needed to have the capacity to serve as practical training sites for students. Information was also gathered on transportation means, accommodation, and budgetary requirements.
- Prioritization of the needs and problems in the deployment areas;
- Preparation of a proposal by each university and submission to the Carter Center/EPHTI Office for action;
- Assigning/employing program coordinators and establishing taskforces at each institution for managing drought response activities;
- Developing organizational structure for smooth communication;
- Sensitization of university staff and students regarding the program and deployment process;
- Creating collaboration with various private, government and non-governmental sectors including the health facilities at each administrative level;
- Establishing outreach services in areas where health facilities do not exist. It was planned that faculty and students would travel to these communities and give health and nutrition care. This would include proper feeding practices of mothers and children, conducting disease surveillance, improving water/sanitation services, conducting immunization and other related activities;
- Providing orientation training to students and frontline health workers at the deployment areas to enhance their knowledge and skills for responding to current and future drought related emergencies;
- Close supervision and monitoring of the implementation of project activities;
- Ensuring timely preparation and submission of reports;

The Intervention Phase:

The planned activities were executed in collaboration with the health institutions at each administrative level including the regional health bureaus (RHBs), zonal health departments (ZHDs) and woreda health offices, Disaster Prevention and Preparedness Commission (DPPC), administrative councils (ACs) and capacity building offices at each level, educational and agricultural bureaus, town municipalities, school teachers and students and other government and non-governmental organizations (Linkages-AED, MCDO, Concern, UNICEF, WHO, S/USA, MSF-Swiss, W/Vision, OXFAM, IMC, Project Mercy, and Meserete Christos Church, and Catholic Mission). Coordinators were assigned

and relief management taskforces (committees) established at each institution to plan and implement activities.

The specific activities undertaken were:

- Management of in- and out- patients (curative services): Common health problems that the students dealt with in most of the deployment areas were communicable diseases and nutritional disorders, malaria and other febrile illnesses, ARI, diarrhea of all causes, malnutrition, intestinal parasites, and infections of the eye, skin and subcutaneous tissues were prevalent, some of them causing high morbidity and mortality among adults and children. Malaria had the most serious impact accounting for more than 60 percent of the patients in health facilities in the deployment areas. Concomitant epidemics of measles, meningitis, relapsing fever and diarrheal diseases occurred in SNNPR, East & West Hararge and Waghimra Zones of Oromiya and Amhara Regions respectively. The students participated in the control of these diseases by collecting samples for laboratory analysis, patient management, recording and reporting of cases.
- Awareness creation through health and nutrition education, conducted mainly in schools, prisons, health institutions and public gatherings. The topics covered included malaria, STI & HIV/AIDS, environmental sanitation, waterborne diseases, harmful traditional practices, family planning methods, prevention of skin infections, common childhood diseases, diarrheal diseases, personal hygiene and home management of nutritional disorders.
- Participation in EPI programs at static and outreach sites including in growth monitoring, home visiting, family planning and reproductive health activities. During the immunization campaign, students gave TT2, measles, meningitis, polio vaccinations and Vitamin A supplementation.
- Conducting operational research (mini-project) and community diagnosis where the students collected and analyzed health data to identify the priority problems for the necessary interventions. For this purpose, students selected topics such as EPI coverage and its determinants; prevalence of protein energy malnutrition in children 6 to 59 months old; case detection and management of trachoma; nutrition; sanitation; prevalence of trachoma infection; HIV/AIDS and its prevention methods; control of epidemic meningitis; prevalence of intestinal parasites in elementary school children; family planning coverage; prevalence of relapsing fever, malaria and TB; efficacy of malaria treatment; prevalence of onchocerciasis and other skin lesions; and nutrition status of children under five.
- Inspection of food and drink establishments, drug shops, slaughter houses and butcheries, school and prison premises/compounds, latrine and waste disposal pits and water sources.
- Participation in screening and feeding of severely malnourished children (under 5 years of age) especially in the therapeutic feeding centers (TFCs).
- Collecting, recording and analyzing health information for interpretation and the necessary action: In this aspect, students and supervisors did a good job of analyzing stool samples of school children for parasites and de-wormed them accordingly. They had also studied the prevalence of malaria from health facilities documents.
- On-the-job training of health staff and others: health science students and their instructors trained health center staff, community health workers (CHWs), traditional birth attendants (TTBAs), hotel owners and food handlers, anti-AIDS and trachoma club

members, caretakers of children, prison staff, janitors and students. Topics covered included: detection of severe anemia; presentation and management of complicated malaria and diarrheal diseases; identification and management of severe dehydration; detection, management and referral of cases of malnutrition; epidemic control; emergency management of abortion; prolonged labor and puerperal sepsis; personal hygiene and environmental sanitation as well as health data recording, compiling and reporting.

- Participation in the efforts to develop water points, construction and repair of latrines and waste disposal pits.

Level of Project Impact

As discussed above, various capacity building activities have been undertaken to meet the three major objectives. What follows is a summary of the impact achieved as a result of these activities.

a) Networking

The EPHTI Council, whose members are drawn from the health science faculties of the seven universities, has achieved a strengthened sense of ownership and camaraderie. There is now a good working relationship in the form of joint planning, sharing of experience, and staff exchanges.

b) Teaching material production

- Production of materials locally has filled the gap that existed due to lack of text and reference books.
- Production of the lecture notes, modules and manuals following joint development through workshops and review has enhanced self-reliance among university instructors who were inexperienced in the writing exercise, but who developed confidence by going through the exercise in collaboration with those who were better prepared.
- Teaching staff have been motivated to continue in their profession because their contribution as authors was recognized through academic promotion.
- The joint development of teaching materials for use by all partners has created the opportunity for standardizing contents with the curriculum.
- Making printed teaching materials available has created room for the instructors to give more time for practical training, rather than wasting time in writing notes.
- Developing teaching materials locally has enabled health science students to acquire knowledge on health issues relevant to Ethiopia.
- The exercise of lecture note development for training Health Extension Package workers has created a unique opportunity of bringing university level teachers close to grassroots health service. This helps them shape their college students in providing the appropriate technical support to community health workers in their areas of deployment after graduation.

c) Staff strengthening

- Training hundreds of instructors in pedagogical skills both by expatriate experts and fellow instructors through the cascade training system has enabled teachers do their job more effectively.
- Subsequent to the “Writing skills’ workshops, instructors were able to develop teaching materials more scientifically. The first 25 trainees served as nuclei from which fellow instructors would acquire their writing expertise.
- The workshops held among instructors to develop teaching materials have also enhanced capacity building through exchange of knowledge in writing. Junior staff were able to catch up and (co-)author lecture notes and modules as a result.
- Instructors and training health facility staff that received training in nutrition and RH skills are now able to teach better and conduct effective supervision on clinical skills of students during their practical attachments. They are also able to train community based health workers (TTBAs, CBRHAs) thus expanding the horizon of primary health care.

d) Enhancement of the teaching-learning environment

- The arrival of books (text and reference) has filled an important gap, helping instructors to use standard materials as a source for producing teaching materials in the local context but in tune with universal scientific truths.
- Current scientific journals have helped authors and instructors to keep in touch with the ‘outer world’ while teaching their health science students, and also working on the development of teaching materials in the local context. This has thus reduced the risk of ‘in-breeding’ of ideas.
- The establishment of skills labs in the health science faculties has been instrumental to allow staff and students to use models during practical sessions and in extra hours. Users are now able to acquire skills prior to dealing with actual patients or clients, and as a result, discomfort due to mishandling is markedly reduced.
- Laboratory equipment has alleviated shortages that hampered practical training both in the faculties and field practice, since students were able to take them during their attachments out of the campus.
- Office equipment such as computers, printers, projectors, and copiers have solved serious problems that were plaguing the teaching environment. Instructors were able to prepare teaching materials and present their lectures efficiently thanks to the equipment made available through the Project.

e) Overall impact:

Since the EPHTI partnership was launched, about 5000 health science students of The Health Center Team have passed through training in the universities and deployed to serve in various parts of the country. Although it is difficult to claim to be the sole contributor, we can fairly affirm that the EPHTI has contributed to the improved quality of training, and therefore better health care, especially to under-served communities. However, this needs to be substantiated through an objective evaluation or study. On the other hand, we also know that health care cannot be improved through expansion of health facilities and increase in the number of professionals alone. There is also the need for adequate equipping and provision of drugs and supplies, among many other needs.

f) Impact of the Drought Response Program:

It is difficult to measure the impact of this undertaking due to the fact that the deployment areas were widespread and public health interventions require more time for impact to be seen. However, the interventions have had some immediate and medium-term impacts as indicated below. Annex V presents excerpts from a study that was conducted and gives views of students, faculty and beneficiaries.

i. Impact at the deployment area/community level:

- Curative and rehabilitative health and nutrition services that could not have been possible otherwise were made available to the drought affected populations, and this has resulted in aversion of morbidity and mortality, especially among the most vulnerable groups (children and severely malnourished adults).
- Serious disease outbreaks were controlled quickly before they claimed many lives and spread to neighboring areas.
- Preventive activities such as immunization, health education, water and sanitation activities have left behind a situation where the fight against communicable and nutritional health problems could be managed with population participation.
- Health professionals and auxiliaries that obtained training through the drought intervention program have been trained to handle similar emergencies in the future.
- Beneficiary communities were appreciative of the intervention and expressed their solidarity with all concerned to fight such emergencies in the future.

ii. Impact at the university level:

- The universities responded to the emergency national call through intra- and inter-institutional discussions, and joint planning. This has promoted interactions between universities and other stakeholders in the respective deployment areas, thus enhancing their level of confidence for future similar events.
- Health science students who participated in the drought response program have developed a sense of responsibility and responsiveness at times of crises. This trait will enable them work in harmony with the concerned people in their areas of assignment to alleviate community sufferings.
- With coordination by The Carter Center and EPHTI Field Office, universities developed a training module on health problems associated with drought emergencies and this is now in use for teaching health science students.

Results Achieved

Encouraging results have been achieved in the various capacity building component activities of EPHTI and its networked universities. The details are presented below.

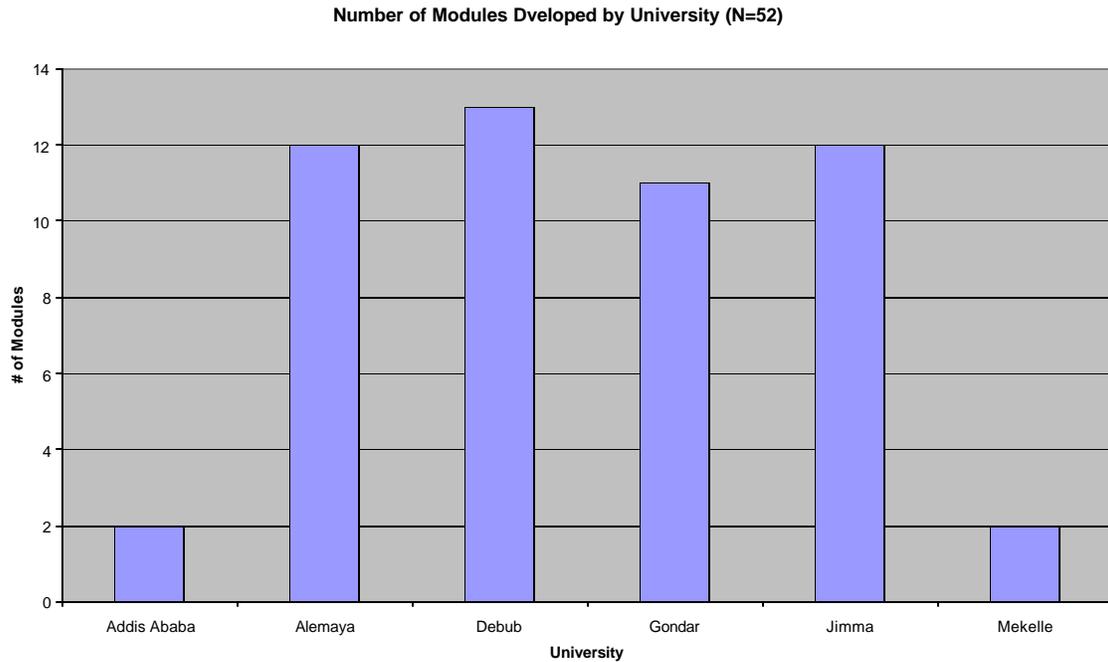
a) Teaching Material Production

Over the years, 45 new modules have been developed and seven earlier ones revised showing a 73 percent increment over what was planned. The reason for surpassing the plan could be the fact that there has been a two year extension of the Project. Overall,

more than 63,000 copies of modules have been developed and distributed. The graph below depicts the number of modules produced by each institution.

Chart 3 below shows the modules developed by universities.

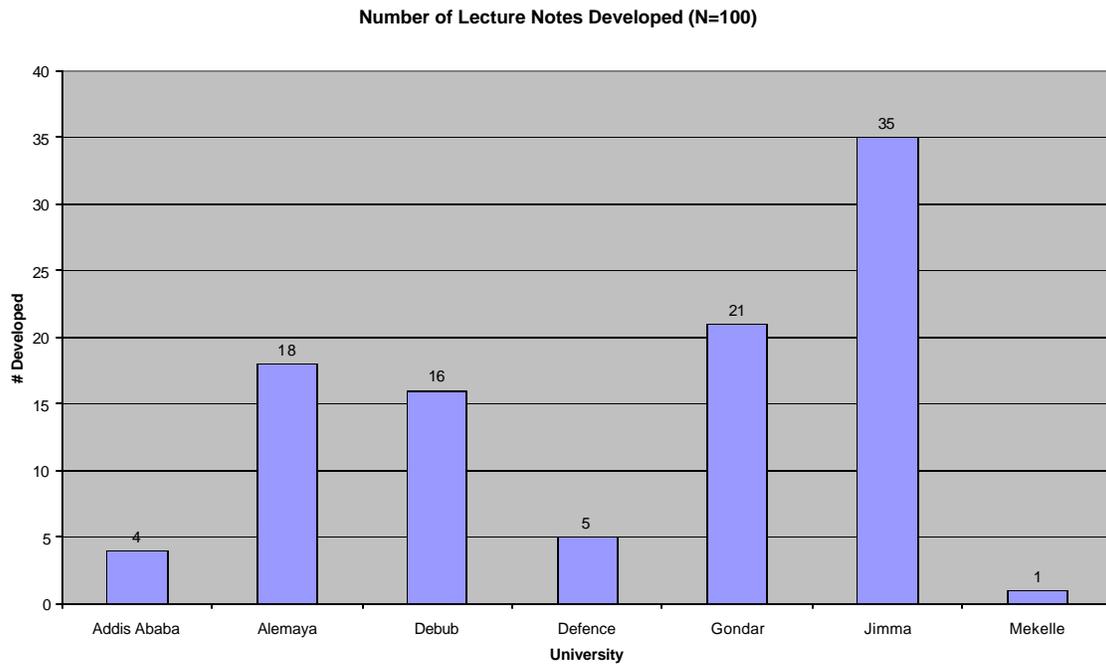
Chart 3



During the life of the Project, 100 lecture notes have been published and distributed, exceeding the plan by 25 percent, for the same reason as in modules above and in response to increased demands from the MOH and MOE for use in the regional health science colleges and health extension training.

Chart 4 below shows the modules developed by universities.

Chart 4



The number of *manuals* developed was low, at 2 over 4 years. This was mainly due to lack of clear planning and the complexity of manual development that required time and involvement of many professionals.

b) Staff strengthening

Several staff strengthening activities were undertaken during the project period. With the exception of training in pedagogical skills, this component was not limited to university instructors. It included service staff in training health facilities-health centers and hospitals. Table 5 gives details.

Table 5: Number of trainees by type of training

Type of training	# trained by international trainers	Cascade training-on campus/field
Pedagogical skills	230	210 individuals further trained
Writing skills	25	Experience sharing
Essential Nutrition Actions/BCC.	761	Integrated into curriculum
Reproductive Health	1194	Integrated into curriculum

c) Enhancement of the Teaching-Learning Environment

Universities have received much needed lab and office, teaching aides and literature, as indicated in earlier sections.

d) The Drought Response Program:

Health science students and their supervisors deployed from each participating university had the opportunity to gain knowledge and experience in handling health emergencies including preventing and controlling disease outbreaks under disaster conditions. In addition, the undertaking has benefited the victims of the drought crises, and the health professionals working in service providing facilities were able to gain new knowledge and skills of dealing with disaster associated emergency health and nutrition problems. The specific results achieved are as follows:

- 1) A total of 2541 students and faculty (2191 students and 350 instructors) participated in the drought intervention (see Table 6 for details)
- 2) The students and faculty were deployed to about 40 health facilities in drought affected areas of five regions in the country.
- 3) Health science students and faculty provided on-the-job training to about 2266 persons living in their areas of deployment. The participants include health center staff, community health workers, traditional birth attendants, hotel owners and food handlers, anti-AIDS and trachoma club members, caretakers of children, prison staff, janitors and school youth.
- 4) Close to 400,000 persons received health education.
- 5) Overall, around 10 million persons in the drought affected areas were beneficiaries of the program.
- 6) Participation in the efforts to develop water points, construction and repair of latrines and waste disposal pits (see Table 7).

Table 6: Number of Students Deployed by Category and Training Institution:

University	Medical Students	HO*	Nurses	EHT*	MLT*	PHT*	Total
Alemaya	-	171	128	104	114	-	517
Dehub	-	160	306	185	124	-	775
Gondar	52	151	62	72	76	-	413
Jimma	-	32	39	32	23	32	158
Addis Ababa	112	-	136	-	69	-	317
Total	175	514	671	393	406	32	2191

* HO= health officers; EHT= environmental health technicians; MLT= medical lab technicians; PHT= pharmacy technicians.

Table 7: Summary of Activities by Training Institution:

Activities	University					Total
	Alemaya	Dehub	Gondar	Jimma	Addis Ababa	
Number of Latrines Constructed	157	243	12	6	10	428
Number of Water Source Constructed	32	20	16	1	2	71
Number of Waste Disposal Pits Dug	50	467	44	28	5	594
Persons Received Health Education	50993	218550	24760	44904	35342	374549
Persons Trained/Oriented	1127	668	377	94	-	2266
Children managed in TFCs	563	2907	-	-	-	3270
Number of Sanitation Campaigns	5	33	-	-	-	38

e) Overall Results

- Over 500,000 copies of the teaching materials developed through EPHTI have been published and distributed.
- Books, journals, office and lab equipment, instrumental for enhancing the teaching/learning environment, have been procured and distributed.
- In addition to the staff and students that benefited from specific activities, the number of students that passed through the education system since the inception of EPHTI is over 5000 as shown in Table 8 below.

Table 8: Number of students by category who have benefited from EPHTI

University	Graduated students (2001-2004)				Currently being Trained			
	Health Officer	Nursing	MLT*	EHT*	Health Officer	Nursing	MLT*	EHT*
Gondar	230	512	265	231	329	330	192	170
Jimma	254	573	383	387	209	485	295	224
Alemaya	216	247	244	192	375	360	214	232
Dehub	196	193	189	203	221	169	157	159
Addis Ababa	-	82	130	-	-	553	270	-
Mekelle	34	-	-	-	114	-	-	-
Defence	46	69	38	34	225	130	36	32
Total	976	1676	1249	1047	1473	2027	1164	817

* EHT= environmental health technicians; MLT= medical lab technicians;

Means of Verification

Various methods have been and continue to be used to verify that major EPHTI objectives have been met. The primary ones include:

- Quarterly meetings by the EPHTI Council to address activities and reports;
- Annual program reviews in which university and EPHTI activities are presented, scrutinized and recommendations/directives are given for improvement;
- Quarterly reports submitted to USAID and other organizations;
- Briefings and presentations made at USAID-sponsored gatherings and other academic and scientific meetings;
- Site visits to universities, THCs and communities to evaluate the manner in which EPHTI activities are implemented;

Changes in Strategies and Approaches

As indicated earlier, EPHTI and the universities within its network have been engaged in capacity-building activities to help enable the health science faculties to improve their services. In the implementation of activities, various strategies were used with substantial flexibility as briefly listed below.

- At the beginning of the Initiative, activities were under the sole coordination of The Carter Center Field Office in Addis Ababa. After a short time, it was understood that this centralized approach would not promote ownership by the partner universities. Therefore, the EPHTI Council was established with two members from each university. The Council was then given the responsibility of planning and monitoring activities during its quarterly meetings. In addition, it established technical committees that address specific issues such as teaching material development, reproductive health and mental health.
- In view of the expanding number and variety of materials to be developed, focal persons were identified from each university to serve as facilitators to the intra-institutional development process of teaching materials.
- Initially, the various workshops organized by EPHTI between and within universities lasted two weeks. Time proved that this duration was not necessary, since the job could be done faster by experienced staff working with their less experienced colleagues. Therefore, it was agreed that the workshops would be held for a maximum of one week. This has not only improved efficiency in the production of materials, but it has also minimized faculty movement for EPHTI activities, making them more available for their other duties in the universities.
- Panel discussions at the annual major workshops were introduced to help broaden the horizon for collaboration between universities and partner agencies such as the Ministry of Health. One example is the Discussion on the Health Sector Development Program and the Role of Training Institutions.
- Speakers with specialties in areas relevant to health science faculties were invited to deliberate on topics of interest. Several examples are: the talks on the

- Millennium Development Goals, and the Role of Health in Socioeconomic Development. These presentations helped enrich the workshop experience for participants that would otherwise discuss routine issues and disperse.
- The mobilization of the university community for health-related interventions during the 2002/2003 drought in Ethiopia was a concrete response to the challenge from the Ethiopian government and USAID. Obviously, this was not among the original objectives or strategies. However it was an enormous accomplishment and became one of the fundamental initiatives of the program.
 - In 2003, the Ethiopian government introduced a policy of shifting diploma level training from universities to line ministries. In the case of health, training was moved to the Ministry of Health and regional health bureaus. In consultation with the Ministry of Education, adjustments were made to respond to MOH needs for running these health professional training schools by developing teaching materials to conform to these policy changes.
 - In 2004, the MOH approached EPHTI to help in the development of teaching materials for the newly launched Health Extension Package (HEP), in which nearly 30,000 grassroots health workers would be trained and deployed to work at the family and community levels. The idea of developing teaching materials by university instructors for trainees that would serve at the community level was endorsed by the MOE as an opportunity for universities. USAID was also supportive of addressing this new challenge. EPHTI and its partner universities worked closely with experts in the MOE. As a result, 22 lecture notes that were not in the original plan were developed and made available to the MOH for use in the Technical and Vocational Training Schools (TVETs) that run the HEP training. This timely adjustment was a great benefit to the TVETs. The additional benefit to the universities was that it helped the instructors understand what is needed at the grassroots level where their students will be required to give the necessary technical support after graduation.

Obstacles Encountered and Solutions Applied

There were no major obstacles while implementing the EPHTI project. Minor problems were encountered during the project period. The primary problems and the steps taken to remedy them are listed below:

- The problem of mobilizing university staff to participate in teaching material development workshops and meetings raised serious concern among university officials and was almost a threat. This was alleviated through discussions and reduction in the frequency and duration of absence of faculty from their respective campuses.
- The deteriorating situation of the training health centers affiliated with the universities compromised the practical training of health science students. Basic equipment and supplies have been erratic at best. Service staff were not motivated enough to be role models for senior health science students participating in their field attachments. In general, the buildings are in poor shape and the rooms and compounds of the THCs are unclean. Attempts were made to define these problems through an assessment of the THCs in October and

November 2004. Short-term solutions were agreed upon for implementation by universities and THCs for items like cleanliness and some degree of motivation through better discussions between universities and health authorities. Other major deficits will be handled more aggressively and in an elaborate manner, hopefully in the next phase of EPHTI.

- There were some delays in getting feedback on teaching materials that were sent for review to international experts. To solve this problem, the pool of experts was expanded, and those who did not respond were removed as reviewers.
- There has been a sense of exclusion by some departments, especially clinical and pre-clinical ones, from EPHTI activities. This has also existed at the individual level. This has adversely affected the smooth execution of activities and the development of a team spirit. This issue was discussed by participants at major workshops and by the EPHTI Council. The consensus was to be as inclusive as possible, and a problem-solving approach was adopted which was found to be successful.
- It was discovered that the mechanisms of most of the university libraries made it difficult for EPHTI materials to be accessible to students and staff both on-campus and in the THC. This was again addressed through the same avenues had been used with other challenges. Materials were specifically earmarked to the THC and modalities of making materials accessible were agreed upon. This has improved the situation.
- There was poor institutional communication in the initial stages, and it was often individual instructors or department heads that would handle communication with the EPHTI Field Office in Addis Ababa. It was very difficult to trace equipment, material and literature donations. As a result, university officials had very little information in order to make sure that the items obtained through EPHTI were accessible to all relevant users. The issue was discussed at the EPHTI Council and it was agreed that strong measures toward institutionalization should be taken. Consequently, lists of items were developed and shared with university officials and any new shipments were addressed to these officials for their information and follow up.

Outstanding and Unresolved issues

The most significant outstanding issue is the strengthening of the practical training sites, specifically the THCs. The problem also has to do with the issue of ownership. The THCs are run by the regional health bureaus of the MOH, and are used by universities (under the MOE) for practical training of their senior health science students. The government budget allocation follows that of the line ministries. Consumption of supplies escalates when health science students come to the THCs creating pressure for the MOH. There is an urgent need to discuss and resolve the issue of budget allocation between the two ministries. The MOH and the MOE need to work more closely and rehabilitate the THCs so that they can serve as model training sites. Issues of discussion and collaboration should include the material as well as the human elements.

When funding for our reproductive health (RH) activities from the Packard Foundation came to an end, there was difficulty in ensuring the continuity of this component of the program. The RH coordinators employed by three universities had to be terminated. We hope the problem will be resolved soon since we included RH in our grant application to USAID for EPHTI Phase II.

Annex I: Guidelines and Terms of Reference of the EPHTI Council

Working Guidelines of the Council

The Coordinating Committee established at the Alemaya Workshop will be named “Ethiopia Public Health Training Initiative Council (EPHTIC)” and will be referred to as such both in written and verbal communications as of June 2001.

Frequency of meeting – Consensus was reached that the Council shall meet every three months in the first year.

Place of meeting – The meeting should be held in Addis Ababa starting at the end of the week in order to reduce overlapping institutional commitments of the Council members.

Duration of Meetings – The duration of meeting was decided to be not more than three days unless otherwise deemed necessary. It was also suggested that the agenda of the meeting be prepared ahead of time and circulated to each member and the minutes of the meeting be delivered to each member to facilitate the efficiency of the meetings.

Composition of the Council – The Council shall have two delegates each from the five institutions and members of the RTA office, i.e., the RTA and the Business Manager. The RTA has also agreed to be a member of the EPHTI Council. The working relation between the RTA and the rest of the Council shall be such that the RTA takes on the decisions of the Council and implements them. The RTA will also keep the Council informed on the financial status of the Initiative in a transparent manner.

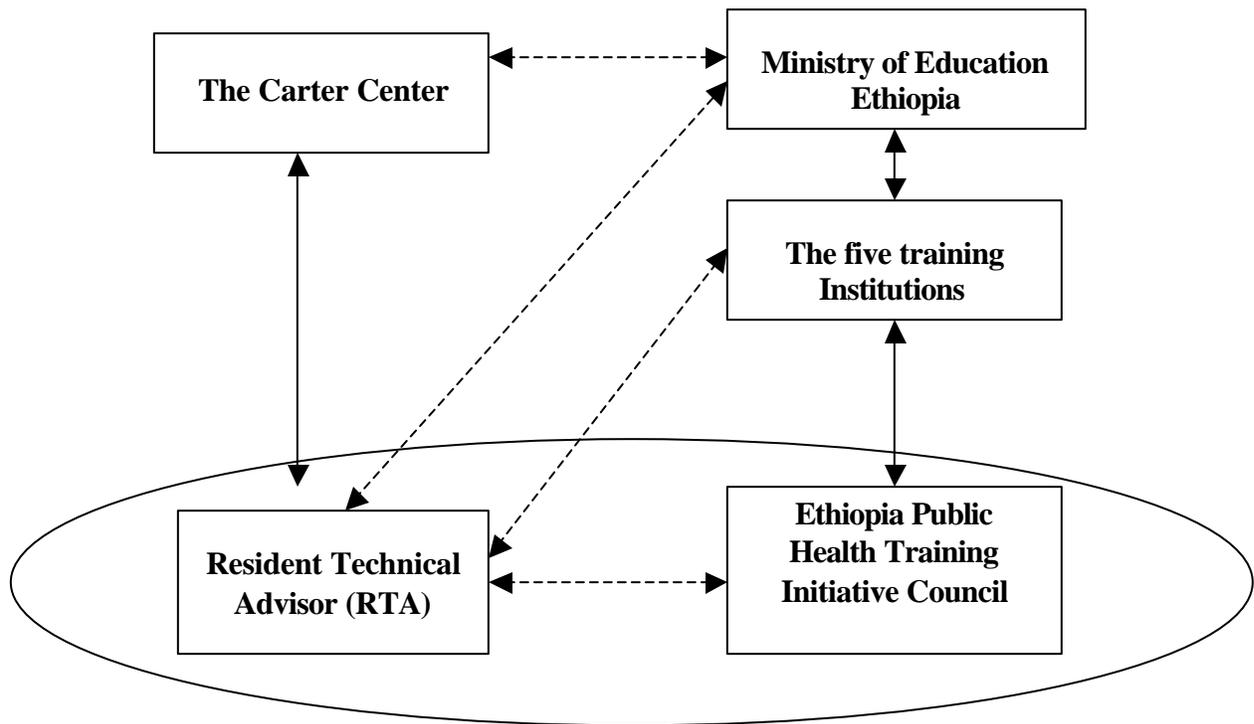
Terms of office – The Council members will serve for two years and will be able to be reelected once by the General Assembly. The Chairperson and the Secretary shall serve for one year and can be reelected once.

Alternate members – Every institution shall delegate two alternate members for the Council. These alternate members should be well informed and possibly involved in the EPHTI activities.

Quorum – Quorum will be maintained if there are 50 percent plus of members. Decision can not be made unless the stated quorum is achieved.

Accountability – The Council will be accountable dually to the institutions which have delegated it and to the Initiative. Through the RTA, the Council reports to The Carter Center and the funding agencies. The following structure indicates the line of communication and chain of command between different stakeholders involved in the EPHTI.

Organizational Structure



Terms of Reference (ToR) for the Council

Purpose:

It was agreed that the Council is established for the following purposes:

1. To coordinate the different activities of the EPHTI;
2. To integrate the activities of the different institutions concerning EPHTI;
3. To assist and work closely with the RTA;
4. To guide the activities of the Initiative based on needs of the institutions;
5. To create communication and networking between the institutions;
6. To facilitate staff exchange between the different institutions;
7. To facilitate joint decision-making, planning and evaluation.

Duties and Responsibilities of the EPHTI Council

Based on the needs for the establishment of the Council, it was agreed that the Council will have the following duties and responsibilities:

Scheduling of annual meetings including: meetings of technical committees, intra and inter institutional meetings, Council meetings, major workshops, the training programs

and monitoring evaluation activities. The Council will also decide as to when and how frequently they should be conducted, the type and number of participants and the venue.

Equipment and Teaching Materials – The Council shall prioritize identified needs and submit requests for purchase of equipment and their distribution. Regarding the teaching materials, The Council will follow-up on the progress of their development, completion, and printing and will ensure the distribution to the respective institutions.

Distance Learning – The Council shall rectify the composition of the distance learning committee, shall further develop the distance learning proposal and shall follow the implementation of the proposal. The Council shall also identify and rank needs; then approve and follow-up on the implementation. It shall also identify schools, allocate budget, and investigate the alternatives for the development of distance learning in Ethiopia in the future.

Reproductive Health and Family Planning Programs

1. The Council shall follow the development, approval, control and coordination of the reproductive health/family planning activities in a transparent way. It shall establish a standing committee for coordinating its activities, determine the budget allocated, schedule trainings, tours, purchase of equipment, and follow the implementation of the project, through monitoring and evaluation.
2. The Council shall follow the development of essential tasks and indicators for evaluation of skills of health center teams by each professional category and their utilization.

Communication and Networking – The Council shall facilitate and follow up the installation of internet networking and training of the utilization of the internet in each institution.

Staff exchange – The Council shall facilitate staff exchange between the member institutions in the Initiative. The Council shall also facilitate the integration of the activities of the EPHTI into those of the respective institutions.

The Council shall make major decisions related to all activities of the Initiative.

Annex II: List of teaching materials developed by universities

A) Modules

Modules Published	Responsible Institution	Year
1) Pneumonia in Under-Five Children	University of Gondar	2001
2) Malaria (Uncomplicated)	University of Gondar	2001
3) Protein-Energy Malnutrition	Jimma University	2001
4) Diarrheal Disease	Jimma University	2001
5) Trachoma	Alemaya University	2001
6) Pulmonary TB	Alemaya University	2002
7) HIV/AIDS	Addis Ababa University	2003
8) Measles	Debut University	2002
9) Anemia	Alemaya University	2003
10) Expanded Program on Immunization	University of Gondar	2002
11) Breast Feeding & Weaning Practices	Debut University	2003
12) Acute Febrile Illness	Jimma University	2003
13) Intestinal Parasitosis	Debut University	2004
14) Sexually Transmitted Diseases	Alemaya University	2003
15) Waterborne Disease	Alemaya University	2003
16) Health Consequences of Disaster	Alemaya University	2003
17) Severe Mental Illness	Alemaya University	2003
18) Harmful Traditional Practice	Debut University	2004
19) Family Planning	Debut University	2003
20) Infectious Control in Health Care Facility	Debut University	2003
21) Infectious Waste Management	Jimma University	2005
22) Micronutrient Deficiency	Jimma University	2005
23) Lifestyle and Personal Health	Jimma University	2004
24) Safe Motherhood	University of Gondar	2005
25) Bacterial Meningitis	University of Gondar	2005
26) Health Surveillance System	Jimma University	2005
27) Onchocerciasis	Jimma University	2005
28) Maternal Bleeding	Jimma University	2005
29) Schistosomiasis	Alemaya University	2005
30) Substance Abuse	University of Gondar	2005
31) Accident and Injury	University of Gondar	2005
32) HIV/AIDS in English Learning Skills	Alemaya University	2005
33) Food Borne Diseases	Alemaya University	2005

34) Maternal Nutrition	University of Gondar	2005
35) Rheumatic Heart Diseases	Debub University	2005
36) Common Skin Diseases	Jimma University	2005
37) Leishmaniasis	Debub University	2005
38) Diabetes	Debub University	2005

Modules Ready for Publishing

39) Sexual Violence against Women	Addis Ababa University	2005
40) School Health	Debub University	2005
41) Vitamin A Deficiency	Mekelle University	2005
42) Adolescent Reproductive Health	Mekelle University	2005
43) Antenatal Care	Debub University	2005
44) Leprosy	Debub University	2005
45) Team Work	University of Gondar	2005[SB3]

B) Lecture Notes

1) Basic Nursing Arts	Debub University	2002
2) First Aid/Accident Prevention	Alemaya University	2003
3) Family Health	Jimma University	2003
4) Occupational Health and Safety	UOG, JU	2002
5) Vector and Rodent Control	Alemaya University	2002
6) Human & Other Liquid Waste Management	JU, AU, UOG, DU	2002
7) Medical Bacteriology	University of Gondar	2002
8) Introduction to Medical Laboratory Technology	Alemaya University	2002
9) Parasitology	Jimma University	2003
10) Hematology	Jimma University	2003
11) Ethics & Legal Medicine	Jimma University	2002
12) Health Education	University of Gondar	2003
13) Housing and Institutional Health	DU, JU, UOG, AU	2002
14) Urinalysis	Debub University	2002
15) Public Health Nursing	University of Gondar	2003
16) Nutrition	Jimma University	2003
17) Health Planning	Jimma University	2003
18) Ecology and Environmental Health	Jimma University	2003
19) Maternal and Child Health	University of Gondar	2003
20) Health Service Management	JU, UOG, AAU	2003
21) Biostatistics	University of Gondar	2003
22) Sanitary Construction II	Jimma University	2003
23) Sanitary Construction I	Alemaya University	2003
24) Water Supply I	Alemaya University	2004
25) Water Supply II	Debub University	2004

26) Food Hygiene I	Alemaya University	2004
27) Solid Waste Management	University of Gondar	2004
28) Environmental Health Law	Jimma University	2004
29) Pediatrics and Child Health Care Nursing	Jimma University	2004
30) Communicable Disease Control for Nurses	Debub University	2004
31) Human Anatomy and Physiology for Nurses	JU, AU	2004
32) Obstetric and Gynecology for Nurses	Alemaya University	2004
33) Health Lab. Mg't & Quality Assurance for Lab T.	University of Gondar	2004
34) Immune Hematology for Lab Techs	Debub University	2004
35) Immunology and Serology for Lab Techs	Alemaya University	2004
36) Clinical Chemistry for Lab Techs I	University of Gondar	2004
37) Health Economics	University of Gondar	2004
38) Epidemiology	UOG, JU	2004
39) Food Hygiene II	Debub University	2004
40) Clinical Chemistry for Lab Techs II	Jimma University	2004
41) Psychiatric for Nursing	Alemaya University	2004
42) Microbiology	JU, UOG, DU, AU	2004
43) Parasitology	DU, JU, UOG, AU	2004
44) Pharmacology	UOG, JU, DU, AU	2004
45) Ophthalmology	University of Gondar	2004
46) Biochemistry	UOG, JU, DU, AU	2004
47) Clinical Lab Methods	JU, DU	2004
48) Surgery	UOG, JU	2004
49) Teaching Methodology	Debub University	2004
50) Anatomy Part I	UOG, JU, DU, AU	2004
51) Physical Diagnosis	UOG, JU, DU, AU	2005
52) Hazardous Waste Management	Debub University	2005
53) Environmental Quality Control I	Jimma University	2005
54) Health Assessment for Nurses	Jimma University	2005
55) Vector Biology	Addis Ababa University	2005
56) Pathology	UOG, JU, DU, AU	2005
57) Air Pollution	University of Gondar	2005
58) Virology and Rickettsology	University of Gondar	2005
59) Pediatrics	JU, UOG, DU, AU	2005
60) Medical Sociology and Anthropology	Debub University	2005
61) Psychology for Health Science Students	Defence University C.	2005
62) Engineering and Drawing	Alemaya University	2005
63) Surveying	Alemaya University	2005

Lecture Notes for the Health Extension		
64) Community Health Documentation	Alemaya University	2004
65) Anatomy and Physiology	Alemaya University	2004
66) Disease Prevention and Control	Debut University	2004
67) Anthropology	Debut University	2004
68) Psychology	Defense University College	2004
69) Sociology	Defence University College	2004
70) Personal Hygiene	Jimma University	2004
71) Water Supplies & Safety Measures	Jimma University	2004
72) Healthy Home Environment	Jimma University	2004
73) Safe Excreta Disposal System	Jimma University	2004
74) Solid & Liquid Waste Management	Jimma University	2004
75) Control of Insects, Rodents		2004
& Other Stinging Animals	Jimma University	2004
76) First Aid & Accident Prevention	Jimma University	2004
77) Food Hygiene and Safety Measures	Jimma University	2004
78) Nutrition	University of Gondar	2004
79) Epidemiology	University of Gondar	2004
80) Bio-statistics	University of Gondar	2004
81) Health Education	Jimma University	2004
82) Health Planning Management	UOG, JU, AAU	2004
83) Family Health Care Provider	Jimma University	2004
84) Health of Ethics & Health Law	Jimma University	2004
85) Gender issues	Jimma University	2004
Lecture Notes Ready for Publication		
86) Population and Development	Alemaya University	2005
87) Anatomy Part II	UOG, JU, DU, AU	2005
88) Mycology	Debut University	2005
89) Nursing Ethics	Addis Ababa University	2005
90) Nursing leadership Management	AAU, DUC	2005
91) Introduction to Public Health	Mekelle University	2005
Lecture Notes in Editing Stage		
92) Gynecology & Obstetrics	DU, JU, UOG, AU	Not yet
93) Physiology part I	UOG, JU, DU, AU	Not yet
94) Physiology part II	UOG, JU, DU, AU	Not yet
95) Internal Medicine	JU, DU, AU	Not yet
96) Environmental Health	Defence University College	Not yet

97) Research Methodology	University of Gondar	Not yet
Lecture Notes Ready to be Reviewed		
98) Oral Rehydration Techniques	University of Gondar	Not yet
99) Molecular Biology and applied genetics	Jimma University	Not yet
100) Medical Entomology	Alemaya University	Not yet

Annex III. Office equipment procured and distributed to universities

Item No	Item	Quantity
1	Desktop Computer (Dell Optiplex Gx240)	53
2	Laser Jet Printer (HP2200D)	15
3	Laser Jet Printer (HP4200D)	2
4	Laser Jet Printer (HP4100N)	4
5	Color Printer (HP1125C)	4
6	Dot Matrix Printer (Epson LQ2180)	12
7	HP LaserJet Printer (1300)	15
8	Photocopy Machine (Canon 6512)	16
9	Photocopy Machine (Canon 6317)	5
10	Scanner (HP 7450C)	8
11	Overhead Projector (3M9080)	53
12	UPS (Backup650VA)	57
13	Voltage Regulator (1000WA)	27
14	Screen (Standing)	15
15	Power Point Presenter (SonyVPL-CS4)	4
16	LCD Projector	3
17	Fax Machine (Canon Fax L200)	4
18	Typewriter – English	2
19	Typewriter – Amharic	1
20	Sony Mavica Digital camera with accessories	6
21	Sony video camera with all accessories	4
22	35MM Cameras with zoom Lens	4
23	Lap top Computer (Toshiba Satellite Intel Pentium IV 3.2GHZ)	13
24	Electro stencil cutter	2
25	External CD writer	2
26	Zid drive External	2
27	Flash Memory	12
	TOTAL	345

Annex IV: Clinical, lab and teaching aides procured and distributed to universities

Item No	Item	Quantity
1	Labor Delivery Models	5
2	Nurse Training Baby, Newborn	2
3	3 B scientific patient care	5
4	Mayo Instrument Tray Stand	2
5	Bowel Stand	1
6	Stethoscope Model 133	10
7	Trinocular Research Microscope, model MCX	1
8	Micro-pipettes 5-50ml one channel	4
9	Micro-pipettes 0-5ml one channel	4
10	Micro-pipettes 40-200ml one channel	4
11	Micro-pipettes 200-1000ml one channel	4
12	Multi-Channel micro pipette 50-300ml -8 channel	2
13	Micropipette (carousel stand) for 5 mech pipettes	4
14	Micropipette tips - yellow tips-1-200ml - 1000 tips	5
15	Micropipette tips - blue tips 200-1000ml 1000 tips	5
16	Refrigerator, auto cooling system, 342L	1
17	Deep Freezer, lockable,370L capacity	1
18	Glucometer	2
19	Sensitive Balance	1
20	PH Meter Bench Top/temp meter/ #3114	1
21	Potable Turbidity Meter #3000	1
22	Potakit I for Micro & Physio chem tests	1
23	Deluxe dual-sex muscle torso - 31 part	1
24	Neuro-Anotomical Brain, 4 port	1
25	Bed (Hi-Lo Latch Bed with mattress, collaps rails)	1
26	Spectra Photo Humalyzer 2000 with Incubator/Printer	1
27	Bilirubin D+T liqin Color 200ml	2
28	Total Protein Liquid Colors 1000ml	2
29	Glucose Liquid color 200ml	1
30	Creatinine Liquid Color 200ml	3
31	Uric Acid Liquid Color of 4x30ml	2
32	SGOT Liquid UV of 8x50ml	2
33	SGPT Liquid UV of 8x50ml	2
34	RPR of 100 test	1
35	Pregnancy test of 150 strips	1
36	Combina 10 urine strips/50 tests	5
37	Hexagon HIV rapid test device/40 tests	1
38	Portable Water Testing Lab.(Micro/Physio Testing)	1
39	Water Sample Bottles (300ml/pak of 20) Glass	1

40	Water Sample Bottles (250ml/pak of 10) Plastic	1
41	BP Apparatus (Aneroid Sphygmomanometer)	30
42	Stethoscope (Stethoscope Dual Head)	150
43	Fetoscope (Short)	15
44	Fetoscope (Long)	15
45	Hammer (Percussion Hammer with Brush)	80
46	Tuning Fork	10
47	D&C Set	3
48	Dental Extraction Set	2
49	Otoscope	10
50	Laryngoscope	2
51	Parker Diagnostic Set	2
52	Infant resuscitation with ambu bag transplant	2
53	Stethoscope (Double Scope AB Type/140)	40
54	Ophthalmoscope (Halogen/Drybattery Handle)	4
55	Bed (Hi-Lo Latch Bed with mattress, collaps rails)	1
56	Wheelchair (Folding w/ pneumatic tired rel wheel)	1
57	Labor Delivery Models	1
58	3 B scientific patient care	1
59	Olympus Microscope	4
60	PH Meter Bench Top	1
61	Incubator - 90 liter (2004)	1
62	Pro Table Autoclave (9002)	1
63	Flexible Skeleton (H+F Flex - 5 feet roller stand)	1
64	3 B scientific patient care	1
65	Otoscope (Auriscopes) Set	5
66	Tracheotomy Tubes	3
67	Ophthalmoscope with plastic case - Set	5
68	Sysmex KX21 Hematological Analyzer(2 reagent system with 18 par)	1
69	DPD Reagent for chlorine test/200 tablets	2
70	Potakit for Micro and Physio Chemical Test - Set	1
71	PH Meter WT3100	1
72	Digital Thermometer	2
73	Binocular Microscope	11
	TOTAL	504

Annex V: Drought Response Case Study, University of Gondar

Extract from a Paper by Professor Yared Wondimkun (Gondar University President) Presented at the May 2004 EPHTI Program Review: Quotations from an evaluation of the drought intervention by Gondar University.

Students:

- Effective transitional program from school based teaching to the real working environment.
- I am happy to assist fellow citizens rather than just helplessly following media broadcasts about the situation.
- I realized that we are capable of working under different circumstances and manage societal problem of substantial complexity from the seemingly little health science knowledge we have.
- I feel that I have developed humanistic interaction with different category of college students, and academic staff.
- I know now how rural Ethiopia and real poverty look like. I got the impression about my future working condition and realities look like.
- I realized that I can make a difference in people's life.
- I appreciate my college that move away from the usual and strive to improve the well-being of all, with especial attention to the least advantaged by exploring the application of knowledge and skills to practical problems.

Faculty:

- Very satisfying to see the immediate impact of transfer of our knowledge and experience (power, know-how, and process skill) on students' performance and community benefit.
- Encountering hardship by living in areas where all basic facilities (housing, electricity, running water, telephone, transportation) are lacking was demanding.

However, I recommend every one to have such unique experience to understand how we are privileged in this poor country.

- It is a monumental proof about the validity of the educational principles of our institute.
- It strengthened the relationship of the medical school with the health services and community.
- The twinning of TTP with drought relief shall be seen in light with the ability of the institute to remain relevant and responsive to the health need of the public, because it is one criterion for assessing quality of education in modern educational system.
- Realized citizenship initiative and local partners' coalition have far greater impact than simple aid and relief work would.

Community:

- The students are very friendly and helpful.
- Students tried to lessen our burden. I never thought that university students come to this area and live our life.
- They are just like family member, sharing our problems and concerns. I wonder if it is part of their education!
- They listen what we are telling them. Next day they come back with ideas and helping hands, and of course with MEDHANIT (drugs!).
- Please, come every year and visit us.
- It gives me strength that some one is there who is willing to address my worries and concerns.