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# **Evaluation of the Environmental Training and Management Project**

# BEST AVAILABLE DOCUMENT

## **Evaluation of the Environmental Training and Management Project**

Prepared for the Office of Regional Affairs, Bureau for Africa,  
Agency for International Development, Washington, D.C.

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## PREFACE

The work on the final evaluation of the Environmental Training and Management in Africa Project (ETMA) began in May 1985 with the recruitment of the team leader, Mr. William M. Feldman. Three more specialists were added to constitute the evaluation team. They were: Mr. Peter Freeman, a geographer; Dr. James T. O'Rourke, a range management scientist and training specialist; and Mr. Michael McGahuey, an agronomist with a strong training background. The team was brought together on July 8-9, 1985 for orientation in Washington, D.C. by Mr. Val Mahan, Project Manager, Office of Regional Affairs, Bureau for Africa, AID; Dr. Earle Buckley, the Project Manager for SECID; and the three Regional Representatives during the life of the project -- Dr. Richard Ford, Dr. Vernon Gilbert and Mr. Julien Engel.

The evaluation team wishes to acknowledge the help they received that made this study possible. We wish to thank Mr. Val Mahan, AID/AFR/RA and his staff; Dr. Richard Ford, Dr. Vernon Gilbert and Mr. Julien Engel, the three Regional Representatives; Dr. Earle Buckley and his staff at SECID especially with respect to the ETMA reports he made available for the team's orientation; REDSO/CWA and REDSO/ESA and the USAID's and U.S. Embassies in the countries visited; the counterpart institutions and organizations who gave much of their time, including IES and Department of Geography, University of Sudan; NES, LBDA, and other agencies of the Government of Kenya; Dr. A. William Weber, ETMA project manager for the Ruhengeri Resource Analysis and Management project (RRAM) in Rwanda; and representatives of the donor community. The list of personnel interviewed appears in Appendix I.

I. EXECUTIVE SUMMARY

A. Introduction

The Environmental Training and Management Project in Africa (ETMA) was a \$7 million five year regional project which began in October 1980 and, except for the Rhueugeri Resource Analysis and Management (RRAM) project in Rwanda, ended September 30, 1985. It was designed to carry out training in environment and resource management and to strengthen African institutional capabilities in identifying priority environmental problems and monitoring environmental trends.

Over the five year period, activities under the project took place in 14 countries. A total of 46 different training events were organized and held: 10 in West Africa and 36 in East Africa: A total of over 1500 pesons participated in these sessions. (See Appendix IV).

Work in the category of resource management was undertaken only in East Africa (Sudan, Tanzania, Kenya, and Rwanda). This work consisted essentially of environmental monitoring, field studies and planning surveys.

A four person team undertook a final field-level evaluation of ETMA over a four week period during October-November, 1985. Six countries were visited: Sierra Leone, Ivory Coast, Congo, Sudan, Kenya, and Rwanda.

1. West Africa Training

Training events held in Sierra Leone, Ivory Coast and the Congo were evaluated.

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Sierra Leone. Two seminars were held: land use planning for rural development (1982); the role of extension in environmental management and agriculture (1983). Interviews with participants revealed that:

- The seminars created an awareness of the importance of the environment by providing a forum for professionals to discuss it.
- Inter-disciplinary and inter-institutional links were facilitated by the seminars.
- During the second workshop, the Environmental Management Association of Sierra Leone was set up.
- A paper on swampland development given at one of the seminars turned out to be a precursor of an eventual pilot project in swampland rice development supported by FAO.
- The seminars reported spawned or were supportive of several environmentally related government actions: National Tree Day(1985), integrated pest management, and attention on medicinal plants.

Ivory Coast. Two seminars, two weeks long, were held in the Ivory Coast: on techniques of environmental assessment(1982) and ecological consequences of river basin development(1983). Overall, the reactions were very positive, especially in terms of making participants from government aware of the various issues treated.

The seminars were important opportunities for cross-institutional contacts and multi-disciplinary discussions. They were reported to make environmental concerns an issue.

Some positive results of the seminars included:

- An agricultural officer became aware of the health aspects of irrigation and dam projects, which he now takes into account in planning irrigated agriculture.

- Ministry of Industry officials noted the impacts of industrial development on coastal and lagoon fisheries.
- The President of Ivory Coast spoke on the theme of monitoring the environmental impacts of development.

Congo. In 1983 a regional seminar on urban environmental management was organized by ETMA. It was hosted by the Director General of the Environment(DGE) and was the first major seminar to be given by the DGE.

The seminar helped sensitize the participants to a range of urban environmental problems; a number of recommendations for action were drafted; and a seminar was carried out subsequent to the termination of ETMA support hosted by the American Ambassador. It had been recommended in the 1983 seminar and employed the organization format used at that time.

## 2. East Africa.

Sudan. A variety of activities were pursued in Sudan. ETMA worked exclusively with the Institute for Environmental Studies, U. of Khartoum, and through it, with the Geography Department.

ETMA financed and assisted in:

- environmental monitoring studies by multi-disciplinary teams in eight sites.
- baseline trend analyses with maps and remote sensing imagery.
- a diversity of training events, including seminars or conferences on the topics of environmental impact of development, combatting desertification, water for human needs, monitoring and controlling desertification, planning for environmental education, and indicators of environmental change and desertification.

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- several regional workshops to discuss the outcome of environmental monitoring studies made in the regions.

In the course of undertaking these various activities, IES staff and associated university personnel acquired practical skills and competence in field work, and planning and workshop management that resulted in a substantial strengthening of the organization. Having demonstrated its competence, the IES is now working with an AID-Supported PVO(Africare) and has been promised financial support from UNESCO. AID was developing a local currency grant to support the IES.

The IES believes that it no longer needs outside technical assistance and that it is fully competent to carry out contracted research and field studies, as well as graduate level training.

The regional workshops proved to be very effective vehicles for local planning to solve environmental and natural resources management problems. The concept of village intervention programs evolved from the experience. IES will carry out fifteen such programs for Africare, under contract.

ETMA's impact on the government of Sudan was minimal, partly because environmental and natural resources management concerns are not subject to coordination or coherent policy. Most people interviewed considered the government to be weak and unable to address local problems.

Kenya. In Kenya, ETMA developed a greater variety of activities and worked with more institutions than in any other African nation.

At the National Environment Secretariat (NES), ETMA financed and assisted in the undertaking of:

- eleven district environmental assessments (basically local level environmental profiles), many of which were followed by district level workshops to discuss the studies.
- soil erosion monitoring in two districts.
- computerized projections of population and resource demands.
- national conference on water supply and pollution control.
- national workshop, and later a strategy conference on endangered plant resources for development.
- short term training on soil degradation, computer operations, and rare plant identification.

NES grew bureaucratically during the ETMA project, but declined in political importance. ETMA's impacts were, therefore, manifest at the technical levels but not the political ones, with the notable exception of the strategy conference on endangered plant resources, which received presidential endorsement. NES is now capable of managing and executing the variety of activities supported by ETMA. NES planned to continue the district environmental assessment work.

Soil erosion monitoring began with ambitious goals (monitor erosion in 25 districts), but was drastically modified to become a methodology trial and demonstration in only two districts, after NES support the work declined. The survey constitutes an important contribution to the knowledge of soil erosion in Kenya.

At the Lake Basin Development Authority (LBDA), ETMA funded the equipping and operation of a water quality analytical laboratory; field work and surveys for monitoring water quality; and baseline studies of Winan Gulf and adjacent waters of Lake Victoria. The resulting technical competence and credibility in the region is most important to LBDA's efforts in water pollution control, since it has no regulatory power and must work with

persuasion. The LBDA is now accorded a yearly allotment to carry on the monitoring work started under ETMA. Also UNEP is supplying \$600,000 to construct a water quality laboratory.

One outcome of the enhanced technical competence is the leadership role being played by LBDA's Dr. Perez Olindo in the creation of a regional Lake Victoria Research Foundation, with participation of the lakeshore states as well as Sudan and Egypt. This effort was begun with an ETMA-sponsored regional technical conference on lake water quality problems resulting from development in the Lake Victoria basin.

Rwanda. ETMA activities in Rwanda included:

- a five-day conference on energy and environmental management (1983)
- a nation-wide sampling and computation of soil erosion loss, performed in parallel with an AID-supported national agricultural census.
- the Ruhengeri Resources Assessment and Management project (RRAM).

The ETMA project has been extended to allow completion of the RRAM project, scheduled for December, 1986. Also the soil erosion computations had not been completed and delivered to Rwanda as of the end of October, 1985.

The RRAM project entails a multi-disciplinary diagnosis of a variety of resources and environmental problems in the Ruhengeri district, in eastern Rwanda. It had only been underway 3 months at the time of the evaluation hence little can be concluded. External events had delayed project initiation, and difficulties with project design had resulted in certain weaknesses. These problems can be resolved in some measure. However, the fact that

the government of Rwanda had not yet appointed a counterpart entity to work with the project, does not augur well for the usefulness of the results.

A number of recommendations were proposed so as to improve the project by adjusting it to the reduced time frame and to various changes that bear on the project. In particular, arrangements for a Phase II implementation should be more clearly thought out.

### 3. AID Missions

Overall there was modest involvement of the USAIDs. There were some notable exceptions. For the most part, the program impact was minimal as well, although it is premature to come to any firm conclusions, many of the ETMA outputs remain to be absorbed.

In West Africa, the USAID attitude was positive but unlike East Africa, ETMA activities were minor, thus expectations were lower.

In East Africa, USAID Sudan was satisfied with the institutional competence of IES for contract work. USAID Kenya was not influenced by ETMA's activities and generally was not knowledgeable about them. REDSO/ESA was supportive and facilitated its activities. USAID Rwanda, due to the personal program interest of the AID Representative, provided a base for the RRAM project and a commitment for a \$500,000 follow-on project during FY1986.

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## B. Conclusions and Lessons Learned

1. The experience of ETMA was for the most part positive and its impact beneficial. It was the right kind of project at the right time.

2. It perfected various instruments (seminars, workshops, conferences) to involve the grass roots in the solution of environmental problems and it taught the counterparts how to use them. It made very clear that environmental monitoring, trend analyses, field studies, training, and other activities in natural resources require a long-term commitment to have a lasting impact.

3. Governmental institutions with whom the ETMA project worked lacked political and regulatory strength for want of clear policy or legislative mandate. ETMA may have succeeded in increasing awareness at politically high levels, but its most immediate contribution was at the technical level within governmental agencies. Technical strengthening appears to be a more feasible goal for institution building than does political or policy-level strengthening.

4. The project fell far short of its original training goals. Greater emphasis should have been placed on long term, degree or non-degree training as part of the institution-building process. There is a professional incentive to participate in degree programs. Short term training programs are generally not attractive to government employees because salaries and promotions are based upon formal education alone in current civil service systems.

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5. An important part of the seminar, conference or workshop mechanism proved to be the formulation of recommendations. An action orientation was invariably sought and an additional effort to translate recommendations into practical proposals became a clear need, not anticipated in the original workshop process.

6. Greater recognition must be given to the extension system in a country for transmitting technical information to the land user, especially when stimulated by action recommendations flowing from local workshops. Training in extension methodology is needed.

7. For project management, the discipline of memoranda of understanding, annual working agreements and collaborative financial planning are indispensable to satisfactory progress in institutionally based programs. Pre-workshop planning seminars are essential to successful workshops.

8. Because of regional, and perhaps language, differences, "Environment" is still a useful and meaningful term in Francophone West Africa while in East Africa it has become a somewhat trite generality, needing more specific explanation. The reason is because more progress has been made in addressing specific problems relative to East Africa.

9. African expertise was found to exist in many of the environmental sciences required for the training events or field studies. In certain instances, Africans were more qualified than outsiders. Nevertheless, Africans scientists and technicians welcomed interactions with peers from outside the continent.

10. Political and policy commitment by a government to combat environmental degradation generally grows from a technically competent human resource base that training and

technical assistance have helped to establish. The sensitization of policy makers to these issues is also an essential need which the seminar/workshop process can effectively meet.

11. Baseline studies in environment and natural resources are essential for understanding the natural resource base but are lacking in most African countries.

12. Regional projects by the Africa Bureau are justified for a number of reasons: promotion of regional cooperation; quick response to new agency initiatives; special legislative concern; etc. ETMA satisfied these. The USAIDS should be the primary impact system for environment and natural resources as a post-ETMA activity in order to give continuity and long-term support to the successful investment already made.

### C. Recommendations

The effort in natural resources management is being narrowed because the crisis in agriculture has been linked with it. For all practical purposes, support for the maintenance of the natural resource base translates into support for food production. This implies a re-focussing of the emphasis and perhaps the institutional outreach of future work in Africa in natural resources management.

1. Except for regional (multi-national) problems requiring regional actions, e.g., river basin development and desertification, natural resources work in Africa should take place at the mission level.

2. AID missions in Africa should support conferences or seminars on natural resources management themes for which they intend to develop actions.

3. AID missions should consider using the field study/local workshop sequence as a principal tool in the design of rural development projects that require natural resources management.

4. AID missions should provide financial and technical support for research and field studies of important natural resources topics by local institutions as a simple and effective way of bolstering institutional capability.

5. The Africa Bureau should consider the creation of a new regional program to assist missions with the technical support and management required to implement the recommendations made.

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## II. INTRODUCTION

### A. Background of the Evaluation

The implementation of the ETMA project formally began with the execution of the prime contract between A.I.D. and SECID as of September 29, 1980 and officially ended on September 30, 1985 with the exception of the Ruhengeri Resource Analysis and Management (RRAM) project in Rwanda. During the life of the project two interim evaluations were conducted. The first, by the International Science and Technology Institute, Inc., (ISTI), was submitted in June 1982. It made fundamental recommendations for redefining the management structure and the implementation process for project activities. The second evaluation was undertaken by Associates in Rural Development, Inc. (ARD), and submitted in February 1984. It evaluated the technical quality and appropriateness of the ETMA country programs in Kenya, Sudan and Tanzania.

The project paper does not specifically call for a final evaluation but it does present an elaborate evaluation plan (pp. 56-57). The plan seeks to measure the impact of the project on: providing competence in activities related to environmental management; upgrading the ability of local institutions to work in the ecological sciences; affecting the national policy of the host countries with reference to resource use and management; and measuring the degree to which the project influenced farmers and other "users" of the environment. The final evaluation took its cue from the those considerations.

## B. Objectives and Scope

During May and June of 1985, the scope of work for the ETMA evaluation was prepared and approved by the Bureau for Africa, Agency for International Development (AID/AFR). Its purpose was to examine the range of activities in environmental training and resource management and to assess the extent to which they achieved the objectives of the project taking into account the: various approaches used; the impact of these activities on the management of the natural resource base; the relationship to the natural resource activities carried on by AID missions and the African countries involved; the influence of the management mode in implementing the project; and, finally, conclusions based on the five years of the ETMA experience. In addition, recommendations were called for on future A.I.D. Bureau for Africa initiatives in natural resources. (See Appendix III for Scope of Work).

Although the activities under ETMA took place primarily in fourteen countries in East and West Africa, the time frame and funds available for the evaluation only permitted a sampling of six of the countries involved. They were: Sierra Leone, Ivory Coast and the Congo in West Africa and Sudan, Kenya and Rwanda in East Africa.

## C. Execution of the Evaluation

### 1. Evaluation Team

The Evaluation Team was made up of four professionals. The Team Leader, Mr. William M. Feldman has long experience in the U.S. foreign aid program; Mr. Peter Freeman has extensive experience in Africa and the developing world generally as a consultant/geographer; Dr. James T. O'Rourke has extensive

African experience as a range management scientist and training specialist; and Mr. Michael McGahuey, is an experienced agronomist with training experience in Africa as well.

## 2. Orientation in Washington, D.C.

The team was assembled in AID/AFR in Washington, D.C., for a two day orientation (July 8-9, 1985). Briefings were presented by all the key managers in the project. They included Mr. Val Mahan, Project Manager, Office of Regional Affairs, Bureau for Africa (AFR/RA); Mr. Jerry Wood, Chief, Project Division II, AFR/RA; Dr. Earle Buckley; Project Manager for the South-East Consortium for International Development (SECID); Dr. Richard Ford, first Regional Representative for East Africa, (1/81-12/82); Dr. Vernon Gilbert, second Regional Representative for East Africa; (12/82-9/84); and Mr. Julien Engel, the Regional Representative for West Africa (11/81-12/83).

The Evaluation Team reviewed a series of ETMA documents (Appendix IV). These were made available by Dr. Earle Buckley, SECID Project Manager. The briefings and the ETMA documents served as the primary information source for the Team prior to departure for Africa on September 1, 1985.

## 3. Field Itineraries

The two training specialists spent approximately two weeks (9/1-9/15/85) visiting Sierra Leone, Ivory Coast and the Congo in West Africa evaluating the impact of the various training activities in that region. After a two week period, Mr. McGahuey returned to Washington, D.C. while the Dr. O'Rourke planned to meet Mr. Feldman and Mr. Freeman in the Sudan to start their review on September 16, 1985 and leave Sudan on September 20, 1985 for Nairobi, Kenya. (Mr. Feldman and Mr. Freeman departed Washington, D.C., 9/13/85).

Due to the closing of the Khartoum airport, Mr. Feldman and Mr. Freeman, after consultation with AID/AFR/RA, proceeded to Nairobi, Kenya arriving there the evening of September 17, 1985. The intention was to arrange for a Khartoum visit later in the trip.

Dr. O'Rourke arrived in Khartoum prior to the strike of the communications workers and spent two and a half days there joining Mr. Feldman and Mr. Freeman in Nairobi on September 20, 1985. Mr. Freeman visited Mombasa, Kenya September 19-21 to attend the workshop for the review of the Mombasa District Environmental Assessment. During the period September 22-24, Mr. Freeman and Dr. O'Rourke visited the Lake Basin Development Authority at Kisumu, Kenya. Mr. Feldman arranged appointments and initiated interviews with Government of Kenya (GOK) officials, U.S. Agency for International Development (USAID), Regional Economic Development Service Organization/East and South Africa (REDSO/ESA) and United Nations Environment Program (UNEP) personnel for the week of September 22 through September 30, 1985.

Dr. O'Rourke departed for the U.S. on September 26, 1985 to begin writing his report and the Mr. Feldman and Mr. Freeman left for Kigali, Rwanda on October 1, 1985. Prior to their departure for Kigali, arrangements were sought to split the two-man team and provide more in-depth coverage for the ETMA program in Sudan. Unfortunately, travel could not be arranged and a cable was sent to USAID Khartoum informing the mission accordingly.

In Rwanda, Mr. Feldman and Mr. Freeman visited with the ETMA Project Manager of the Ruhengeri Resource Analysis and Management Project and others associated with this initiative, including USAID and GOK personnel. The team departed for Washington, D.C. on October 4, 1985.

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#### 4. Methodology

##### a. Scope of Work and Report Outline

The first task for the team leader was the preparation of a scope of work for the evaluation. He was provided with basic ETMA documents, including the project paper, annual reports, the two evaluations, etc. On the basis of this review and consultation with the Project Manager (AID/AFR/RA), he prepared the first draft of the scope of work.

The team leader consulted with the SECID Project Manager in Chapel Hill, North Carolina and with the former ETMA Field Representative for East Africa at Clark University, Worcester, Massachusetts. In addition, he met with other AID/AFR Bureau and AID/S&T Bureau personnel who had some knowledge of the ETMA effort. As a result of these meetings, the team leader prepared a second draft which was approved by AID/AFR/RA.

On the basis of the scope of work, he prepared a tentative outline of the evaluation report. These two documents served as the basis for structuring the interviews both in Washington, D.C. and in the countries to be visited.

##### b. Sources of Data

The data for the evaluation were derived either from the written documents produced by the project or from interviews and consultations with those involved with or who knew of ETMA. The written documents included:

- project paper;
- annual and mid-year progress reports;

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- evaluation reports;
- country-specific reports on training and resource management;
- seminars and workshop documents;
- prime and subcontract documents;
- country strategy papers; and
- budget and expenditure reports.

Interviews were held with a large cross-section of individuals both in the United States (Washington, D.C.; Chapel Hill, North Carolina; Worcester, Massachusetts) and in the countries visited (nationals, USAID and various contract-related personnel) (See Appendix I.)

c. Interviews

The principal methodological tool used to build on the written materials was the interview. The scope of work served as guide for phrasing the questions and disciplining the areas to be covered. A perceived or formally written check-list or questionnaire helped to assure that, for each interview, the essential information was sought. A flexible approach was used to permit the persons interviewed to elaborate the details as much as possible.

d. Preparation of the Report

Upon the team's return to the United States, the proposed outline of the report was modified based on the test it received in the field. In broad terms, the outline reflected four major areas:

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- the findings in West and East Africa;
- evaluation of the impact of ETMA, country-specific and overall;
- conclusions; and
- recommendations for the future.

Since the team did not draft the report in one location, one day was set aside in Washington, D.C. to bring the members together to correlate its views on the essential elements of the evaluation.

#### D. Limitations

Certain limitations in carrying out this evaluation should be noted.

1. The team was not able to directly interview many of the faculty members of Clark University and the University of North Carolina who participated in various activities of the project.

2. More time would have been desirable in West Africa. Taking into account time spent in travel, the review in each country was limited to about two and a half days.

3. Only one team member was able to arrange a two-day visit to the Sudan, a major ETMA participant, which reduced considerably a measure of ETMA impact. (The airport was closed due to a communications workers strike. A later attempt also failed.)

4. A lack of overall and country final financial and project funding data.

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5. A number of the ETMA project activities were incomplete at the time of the evaluation:

- a. The final report by the University of North Carolina on LBDA.
- b. The coastal environmental assessment by Clark University.
- c. The pamphlet on population and natural resource trends being produced by Clark University for NES.

6. It should be acknowledged that a fuller measure of ETMA's impact will be appreciated two or three years after the end of the project on September 30, 1985.

### III. OVERVIEW OF THE ETMA PROJECT

#### A. Antecedents

ETMA represents the blending and extension of prior training activities in Africa and carried out by two U.S. institutions -- the University of North Carolina (UNC) and Clark University (CU). The University of North Carolina funded primarily under the then Office of Science and Technology in AID's Technical Assistance Bureau was conducting training seminars in the U.S. and Africa on the environmental aspects of urban and industrial development during the mid-1970's. Clark University as early as 1976 had begun activities in eastern and southern Africa initially on its own and later with some AID funding which identified local institutions with whom the university worked on environmental problems.

The Africa Bureau, building on these two prior initiatives, solicited and received positive mission interest during the 1977-1978 period for such activities. Through the collaboration of SECID, the University of North Carolina, Clark University, and local institutions in about 13 African countries AID/AFR proposed a program in environmental management and training over a five year period in the form of ETMA. The project was approved in August 1980. It was implemented under a Collaborative Technical Assistance contract with the South-East Consortium for International Development (SECID) and their two subcontractors, University of North Carolina and Clark University.

#### B. Objectives

Overall, the goal of the project was to achieve an improved African capacity to deal with major environmental problems particularly "desertification, soil erosion, water supply and health".

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The purpose of the project was to establish training in Africa in environmental planning and resource management and strengthen African institutional capabilities to: (1) improve their environmental information base; (2) identify priority environmental problems and (3) monitor environmental trends. To carry out this broad purpose, the project was structured into two elements: training and resource management.

The training element of the project proposed to carry out the following training activities in 13 African countries;

1. Twenty one-week national or regional seminars throughout Africa to inform and sensitize 600 policy-level government officials on major environmental problems/issues and means by which they can be resolved.

2. Twenty-eight medium term (4 to 6 weeks) training programs throughout Africa for 840 working-level technicians to improve their capability to plan, manage and monitor environmental programs and activities. These courses were to be based upon three basic topic themes selected by the African steering committee.

3. Academic training (average 6 months) for 105 government and university personnel to upgrade their capability in environmental sciences and practices.

The resource management element would provide four East and Southern African countries with technical assistance and training to initiate country specific environmental programs which these countries have identified as high priority. Funds were also requested to assist two additional countries starting in the third or fourth year of the project. The primary focus of four identified activities were as follows:

- Kenya: Local environmental planning to include development of district resource profiles, establishment of a district monitoring system, soil erosion analysis, and the development of a national resource plan.
- Tanzania: Environmental Health, to include environmental health monitoring and the creation of an environmental policy unit within the GOT and environmental and resource mapping.
- Botswana: Drought monitoring and response systems to include strengthening of the drought watch system, preparation of a national resource profile, training of district officers in drought planning and management and decentralization of drought response systems.
- Sudan: Establishment of environmental units at three universities, review of environmental conditions and trends in Kordofan and Darfur, monitoring of trends in desertification, and training.

### C. Organization and Management

#### 1. Original Project Management (1980-1982)

##### a. Management Structure/Contract Administration

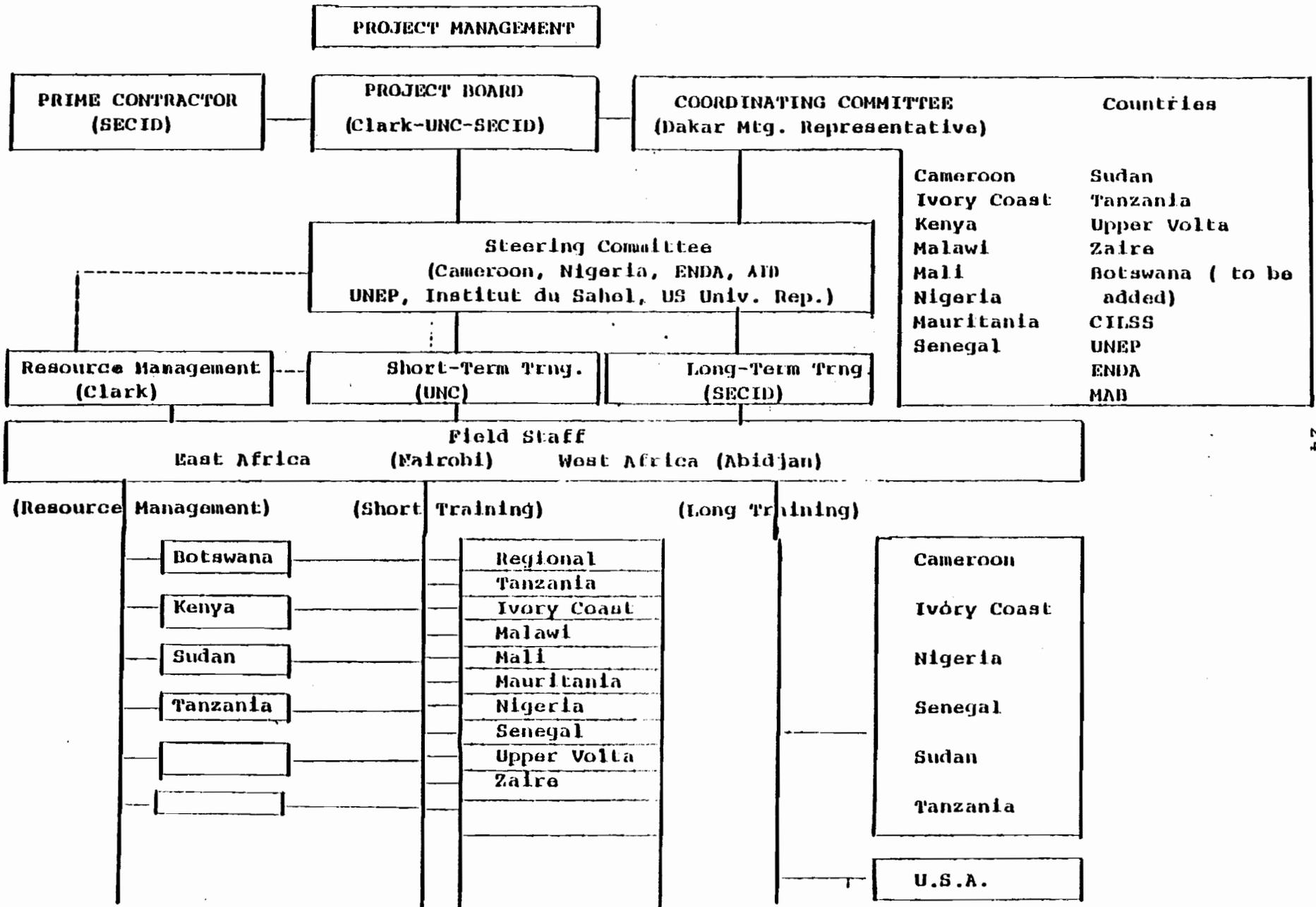
The management structure of the ETMA project at its initiation in 1980 was defined in the prime contract between AID and SECID (September 29, 1980). Figure III.1 shows the components. It provided for a Coordinating Committee, Steering Committee, Prime Contractor and Project Board (also referred to as the Contract Management Committee), U.S. contractor responsibilities (Clark, UNC & SECID) and Field Staff. Responsibilities included:

- Coordinating Committee

The countries, as represented at the March 1979 working seminar in Dakar were to provide overall policy and guidance for the project. The group was to assemble periodically to review work of the program and make recommendations for the future. (It met only once).

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Figure III.1. Original EIMA Project Management Structure



Regional & International Resources: ENDA, Institut du Sahel, UNEP, PAID, MAB, African Development Bank, etc

- Steering Committee

The Steering Committee was named at the Dakar meeting and consists of representatives for Francophone Africa, Anglophone Africa, African regional organizations, Africa-wide organizations, and international organizations. It waste provide direction and guidance in the management of the training component.

- Prime Contractor and Project Board

SECID, as Prime Contractor was responsible for contract negotiations, preparation of sub-contracts with each of the universities, monitoring of budgets, providing cash disbursements to the subcontracting institutions, and for other fiscal and central managerial functions. Twenty percent of a senior SECID administrator was provided for managerial direction.

A Project Board (Contract Management Committee) consisting of one representative from the University of North Carolina, one from SECID, and one from Clark was to meet six to eight times each year to guide SECID in the execution of these coordination responsibilities.

- Coordination of the Training Component

The University of North Carolina already developed short seminars and medium length courses and was to manage the organization and administration of them.

- Coordination of Long-Term Training

SECID had already surveyed the capabilities of a number of African institutions and was in touch with organizations that had information about such African institutional competence.

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- Coordination of the Environmental Resource Management Component

Clark University was responsible for the coordination of the resource management activities and for integrating training into resource management activities in the four countries initially involved in management.

Furthermore, the prime contract provided that:

The two regional representatives stationed in Africa were responsible to and received guidance from the Project Board (Contract Management Committee).

- b. Management Evaluation of 1982

An evaluation of the original management arrangements in 1982 by the International Science and Technology Institute, Inc. (ISTI) found that the management was poorly designed. It noted that:

- It provided for a Project Board (Contract Management Committee) consisting of SECID, UNC and Clark to guide SECID, the Prime Contractor in the execution of contract coordination and implementation. SECID did not have the authority to perform as a manager under the contract.
- It provided for two regional representatives stationed in Africa and made them responsible to the Project Board (Contract Management Committee) not the Prime Contractor further under-cutting the latter's management authority.
- Neither of the subcontracts with Clark and UNC mentioned quantity of work to be accomplished or level of effort.
- SECID, even if it wished take on the supervising role as the Prime Contractor, did not have the tools or manpower to manage the contract and assure that the objectives were achieved.

## 2. Transition Period (1983-1984)

A.I.D. instructed that the recommendations of the ISTI evaluation be implemented. This transition occupied much of the 1983-1984 period and the new structure and method of operation was put in place (Amendment No. 9).

### a. Management Structure/Contract Administration

- SECID was formally given the responsibility for over-all contract management.
- Clark University and UNC would continue to provide technical expertise and guidance under the contract but the prime responsibility for coordination and management of all activities would be with SECID.
- The Project Board (Contract Management Committee) was abolished.
- New subcontracts with Clark University and UNC were issued on a task basis, that is, separate subcontracts for a training seminar or one year of resource management work in the country.
- Additional support staff was hired by SECID.
- Both Regional Representatives became SECID direct hires and reported directly to the SECID Project Manager.
- Yearly plans and budgets of Clark University and UNC received greater scrutiny; host country institution input was sought.
- The African Steering Committee was abolished and a Technical Advisory Committee was created to provide technical advice on policy and substantive issues.

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### 3. Final Project Management (1984-1985)

The transition to the new management structure was completed and refined. The host country institutions were playing a larger role in defining project activities; the positions of the Regional Representatives were abolished; and the subcontractors' responsibility narrowed to the provision of technical assistance.

#### a. Management Structure/Contract Administration

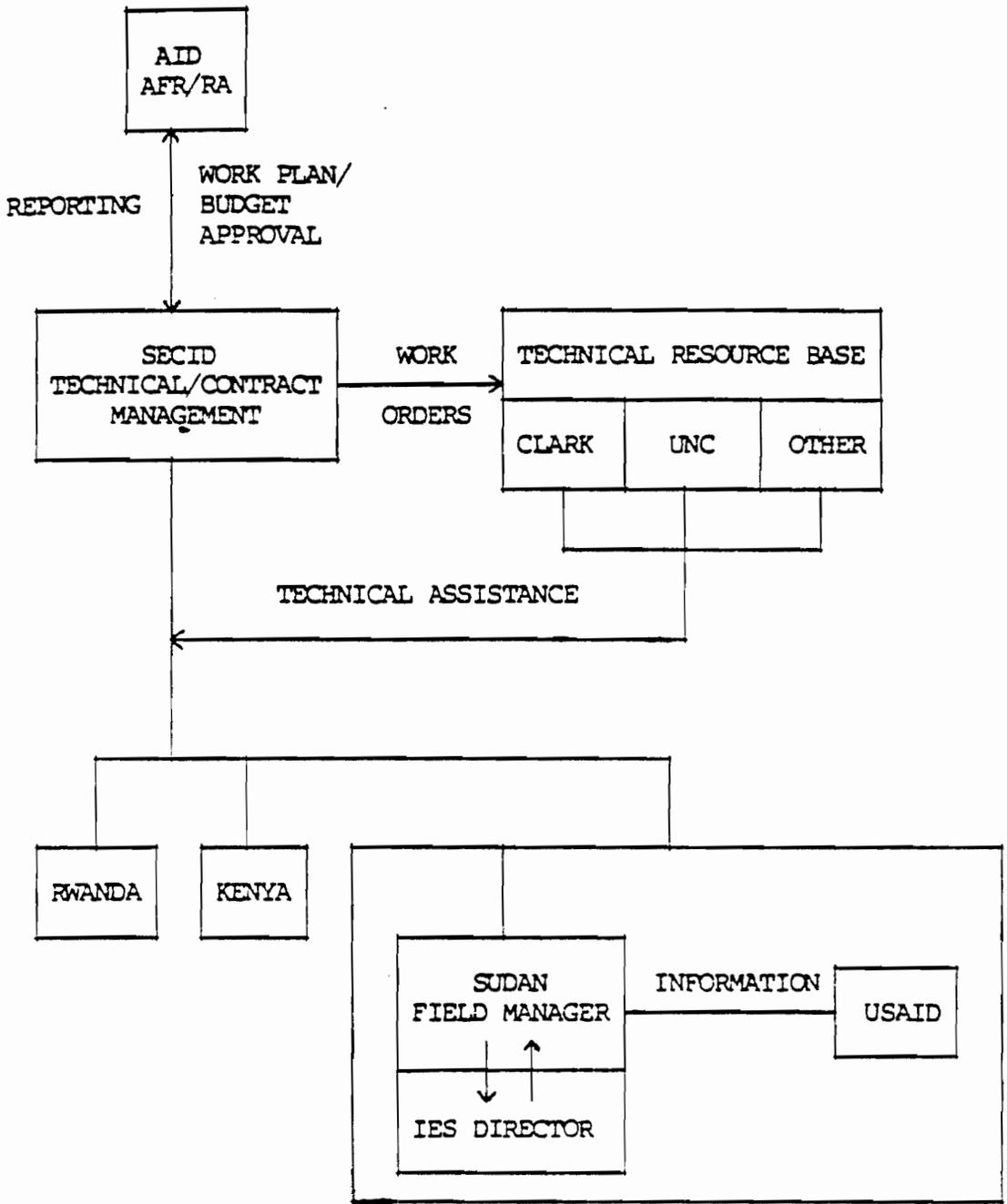
- SECID had full responsibility for technical management and contract/fiscal administration of the project. The SECID Project Director was the single point of contact for AID/AFR (See Figure III.2)
- SECID Project Director was supported by three full-time staff.
- Field Managers in each country assumed responsibility for liaison between SECID and field programs. Regional Representatives were dropped.
- Annual work plans and budgets were defined by the host institution, Field Manager and Project Director. The product was submitted to AID/AFR/RA for approval. Once approved, the work plans and budgets were incorporated into a working agreement for a year. Changes became formal amendments to the working agreement.

#### D. Finances

The ETMA project costs were originally estimated at the \$11.3 million level. It anticipated total A.I.D. financing of \$8.5 million (75% of the costs), representing 100% of the project's foreign exchange and 29% of the local currency requirements. The participating host countries were to provide approximately \$2.8 million or the equivalent value of services for local cost financing. This represented 71% of estimated local project costs and 25% of overall project costs.

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Figure III.2.

Current ETMA Management Structure and Implementation Process



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A series of budgetary events occurred in the Spring of 1983 that foretold the reduction of the total availability under the project -- from \$8.5 million to approximately \$7 million, a significant cut-back in the program. A series of program cuts were undertaken. Perhaps the most significant among them was the end of soliciting new proposals for workshops immediately in West Africa and implementing all previous commitments there by no later than December 1983.

The latest ETMA budget reflecting the status of funds for the period 1980-1986 appears as Table III.1. It shows a project level of approximately \$7 million. Although this budget does not provide the details on specific program support provided by ETMA, it does provide information on the division of effort based on obligations by contract line items.

As anticipated, the largest proportion of direct costs - \$1,967,829 or 28% was obligated for Domestic and International Salaries. This item covered domestic personnel at SECID headquarters connected with ETMA; Clark and UNC personnel whether stateside or overseas; the former Regional Representatives, field managers, host country or other personnel hired under contract and working overseas.

The sum of \$1,417,558, the second largest allocation for direct costs or 20%, was obligated for Subcontracts related to seminars (included all costs incurred for experts and consultants for seminar activities and the overhead and other costs for U.S. and host country institutions).

The third largest amount or \$811,790 was obligated for Other Direct Costs representing 12% of the total. Other Direct Costs included expenses for materials, supplies, telex, equipment and communications generally.

Table III.1

Contract Budget vs. Forecast & Actual Costs  
Environmental Training and Management in Africa (ETMA)  
1980-1986

| CONTRACT LINE ITEM   | FY80-81 | FY81-82 | FY82-83 | FY83-84  |            | FORECAST & ACTUAL |         | SURPLUS VS. BUDGET |         |           |
|----------------------|---------|---------|---------|----------|------------|-------------------|---------|--------------------|---------|-----------|
|                      |         |         |         | ACCRRUAL | ADJUSTMNTS | FY84-85           | FY85-86 | COSTS              | FUNDS   | (DEFICIT) |
| A. SALARIES          | 296507  | 448540  |         |          |            |                   |         | 1975677            | 1967829 | -7848     |
| DOMESTIC             |         |         | 234766  | 114492   | 9936       | 89032             | 31342   |                    |         |           |
| INTERNATIONAL        |         |         | 302820  | 197302   | 9832       | 155068            | 86040   |                    |         |           |
| B. FRINGE            | 32068   | 58017   |         |          |            |                   |         | 327394             | 324888  | -2506     |
| DOMESTIC             |         |         | 51378   | 33603    | 2212       | 29517             | 11282   |                    |         |           |
| INTERNATIONAL        |         |         | 55671   | 30772    | 1336       | 10230             | 11308   |                    |         |           |
| C. OVERHEAD          | 78340   | 62053   |         |          |            |                   |         | 349757             | 343874  | -5883     |
| DOMESTIC             |         |         | 100126  | 20018    | 7470       | 9415              |         |                    |         |           |
| INTERNATIONAL        |         |         | 52646   | 13132    | 1092       | 5465              |         |                    |         |           |
| D. TRAVEL            | 60721   | 124959  | 168190  | 131003   | -39270     | 104366            | 46772   | 596741             | 639522  | 42781     |
| E. ALLOWANCES        | 53121   | 125355  | 134648  | 73635    | 11680      | 99802             | 38735   | 536976             | 521297  | -15679    |
| F. ODC               | 46205   | 100526  | 178818  | 153180   | 17141      | 209735            | 30600   | 736205             | 811790  | 75585     |
| G. SUBCONTRACTS      | 144545  | 274530  | 634925  | 188105   | 34897      | 91972             | 31500   | 1400474            | 1417558 | 17084     |
| H. PARTICIPANTS      | 2996    | 12359   | 27596   | 4922     | 2937       |                   |         | 50810              | 50810   |           |
| I. PROCUREMENT       |         |         |         |          |            | 41956             |         | 41956              | 36000   | -5956     |
| J. PROC. CONT. COSTS |         |         |         |          |            | 5400              |         | 5400               | 5400    |           |
| K. T. DIRECT COSTS   | 714503  | 1206339 | 1941584 | 960164   | 59263      | 851958            | 287579  | 6021390            | 6118968 | 97578     |
| L. G & A             | 26475   | 93919   | 266442  | 138739   | 3272       | 130958            | 74771   | 734576             | 760594  | 26018     |
| M. FIXED FEE         | 5982    | 11158   | 24450   | 27280    | 136        | 994               |         | 70000              | 70000   |           |
| N. T. EST. COSTS     | 746960  | 1311416 | 2232476 | 1126183  | 62671      | 983910            | 362350  | 6825966            | 6949562 | 123596    |

A total of \$639,522 or 9%, the fourth largest allocation, was devoted to Travel and includes all travel, domestic and international.

These four categories make up 69%, of Total Direct Costs (\$6,118,968 million). The remaining 19% of direct costs in descending order include: Allowances (7%), Fringe Benefits, (5%), and Overhead (5%), and the residual categories of Participants, Procurement Contract Costs and Procurement (latter relates to the Rwanda program only).

The remainder of the budget includes a General and Administrative Fee of approximately \$761,000 or 11% of the total budget and a Fixed Fee of \$70,000 which is charged for the life of the project.

#### E. ETMA Program Activities

The varied nature of the activities under ETMA cannot be fully appreciated if the basic two element classification of training and resource management initially used in the project paper and in the first two annual reports (1981 and 1982) is used. We have taken a more analytical approach to the actual experience under the project from 1980 to 1985 and classified it into eleven categories reflecting the reality of this effort and at the same time providing a more meaningful generic home for the activities.

Table III.2 elaborates this approach by country and examples are listed in the text for each category in order to better convey its meaning. (Appendix II defines "training" as used in this evaluation and lists the training events that took place).

Table III.2

## ETMA Program Activities

|                    | Short-<br>Term<br>Seminars | Medium-<br>Term<br>Courses | Work-<br>shops | National<br>Seminars | Regional<br>Seminars | Courses | Long-<br>Term<br>Train-<br>ing | Environ-<br>mental<br>Monitor-<br>ing | Field<br>Studies<br>& Surveys | Trend<br>Analysis | Other |
|--------------------|----------------------------|----------------------------|----------------|----------------------|----------------------|---------|--------------------------------|---------------------------------------|-------------------------------|-------------------|-------|
| <u>West Africa</u> |                            |                            |                |                      |                      |         |                                |                                       |                               |                   |       |
| Cameroun           | X                          |                            |                |                      |                      |         |                                |                                       |                               |                   |       |
| Congo              |                            | X                          |                |                      |                      |         |                                |                                       |                               |                   |       |
| Ivory Coast        |                            | X                          |                |                      |                      |         |                                |                                       |                               |                   |       |
| Mali               |                            | X                          |                |                      |                      |         |                                |                                       |                               |                   |       |
| Niger              |                            | X                          |                |                      |                      |         |                                |                                       |                               |                   |       |
| Senegal            | X                          |                            |                |                      |                      |         |                                |                                       |                               |                   |       |
| Sierra<br>Leone    |                            | X                          |                |                      |                      |         |                                |                                       |                               |                   |       |
| Togo               |                            | X                          |                |                      |                      |         |                                |                                       |                               |                   |       |
| <u>East Africa</u> |                            |                            |                |                      |                      |         |                                |                                       |                               |                   |       |
| Kenya              | X                          | X                          | X              | X                    | X                    | X       | X                              | X                                     | X                             | X                 | X     |
| Rwanda             | X                          |                            |                |                      |                      |         |                                | X                                     | X                             |                   | X     |
| Somalia            | X                          |                            |                |                      |                      |         |                                |                                       |                               |                   |       |
| Sudan              | X                          | X                          |                | X                    | X                    | X       | X                              | X                                     | X                             | X                 | X     |
| Tanzania           |                            | X                          |                |                      |                      |         |                                |                                       | X                             |                   | X     |
| Zimbabwe           | X                          | X                          |                |                      |                      |         | X                              | X                                     |                               |                   |       |

1. Short-Term Seminars

- Somalia: Energy and Environmental Needs in Somalia (1982).
- Kenya: Environmental Enhancement and Resource Management (Eastern Province) (1982).
- Cameroun: Environmental Management: Cameroun Realities (1983).

2. Mid-Term Courses

- Tanzania: Environmental Considerations in Regional Planning (1981).
- Sudan: Water for Human Needs (1982).
- Togo: Issues of Resource Management (1983).

3. Workshops

- Kenya: Kisii District Resource Assessment Workshop (1983).
- Kenya: Kitui District Environmental Assessment Workshop (1984).
- Kenya: Mombasa District Environmental Assessment Workshop (1985).

4. National Seminars

- Sudan: Indicators of Environmental Change and Desertification (1984).
- Kenya: Plant Communities in Kenya (1984).
- Kenya: Strategy Conference on Management and Protection of Kenya's Natural Resources (1984).

5. Regional Seminars

- Sudan: Gedaref District Regional Seminar on Environmental Education (1984).

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- Sudan: Keddada District, Eastern Darfur Regional Seminar on Environmental Education (1985).
- Kenya: The Current and Future Implications of Development to the Aquatic Environment of Lake Victoria (1985).

#### 6. Courses

- Sudan: Training Course on Environmental Education (1984).
- Sudan: Development of Instructional Materials for Bakht-El-Ruda Environmental Education (1985).
- Kenya: Limnological Training Course (1985).

#### 7. Long-Term Training

- Kenya: Wycliffe Mutero - Computer training for population/resource trend analysis, Clark University.
- Kenya: Margaret W. Sartoti - Kenyatta University College, University of Nairobi for a Master's degree in environmental education (1982).

#### 8. Environmental Monitoring

- Tanzania: Development of a model for monitoring environmental health at the village level (started 9/81).
- Kenya: Development of a monitoring system for soil loss (started 1981).
- Sudan: Monitoring trends in environmental change (started in 1981).
- Rwanda: Pilot soil erosion monitoring program (started in 1982).

#### 9. Field Studies and Surveys

- Kenya: District Environmental Assessments (started 1981).
- Sudan: Nile Water Quality Study (started 1982).

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#### 10. Trend Analysis

- Sudan: Development of a Matrix of Indicators of Environmental Change for Land Use and Land Cover for Central Sudan (started 1981).
- Kenya: Population/Resource Trend Monitoring (started 1981).

#### 11. Other (primarily institution - building)

- Tanzania: Development of a Documentation Center for Environmental Materials (started 1981).
- Sudan: Strengthening the Capability of IES in Applied Aspects of Environmental Analysis (started 1981).
- Kenya: Upgrading Natural Resource Planning Capability in the NES (started 1981).

#### F. Impact of Earlier Evaluations

Two mid-project evaluations were undertaken during the 1980-1985 life of the project: one by the International Science and Technology Institute Inc. (ISTI), June 1982 and the other by Associates in Rural Development, Inc. (ARD), February, 1984.

The ISTI evaluation discussed earlier had a major impact on the management design of ETMA and needs no further comment here. The ARD evaluation was more concerned with program content and appraised the technical quality and appropriateness of the country programs in Kenya, the Sudan and Tanzania. The highlights of the ARD findings are summarized below to give a sense of its substantive influence on the country programs described. They also provide a link to the findings of this report.

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In general, the findings of the evaluation were positive.

In Kenya:

- ETMA was found to be a vital force in the development of the National Environment of Human Settlements Secretariat (now NES) capabilities. Steps were recommended to give it greater visibility and credibility.
- The DEAP provided useful information for all types of local resource managers and had great potential for the future.
- The soil erosion monitoring program was judged to have technical flaws. Continuation of the program required technical modifications.
- The district projections of population and natural resources were seen to have a great educational value.
- ETMA workshops were judged to have strengthened the LBDA. Continued support was recommended.

In Sudan:

- ETMA had made important contributions to the development of IES in all aspects of the project purpose.
- The field studies of environmental change had been carried out effectively. A second phase for designing intervention policies and plans was viewed as a high priority for support.

In Tanzania:

- It was the judgment of the evaluation team that the lack of a clear country program was largely responsible for the failure to meet the project purpose in Tanzania.
- The Rukwa regional atlas was viewed to have a low priority within IRA.
- The documentation center had not been of much assistance to local resource managers.

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In general, the evaluation identified:

- continued management problems having a negative impact in Sudan.
- the impact of reduced ETMA project funds and a need for consistency in terms of funding levels.
- a need for increased regional exchanges between ETMA country programs through activities of the Regional Representative and annual meetings of those involved.

The evaluation was an endorsement of support for the NEHSS (now NES) and Lake Victoria program in Kenya and the IES program in the Sudan.

The following chapters set forth the findings of this evaluation and the related assessments of the ETMA program impacts in West and East Africa.

#### IV. FINDINGS IN WEST AFRICA

##### A. Sierra Leone

ETMA sponsored two seminars in Sierra Leone. One, in 1982 devoted to land use planning for rural development with special attention to environmental management and the second, in 1983, on the role of extension in environmental management and agriculture. The results of this relatively small effort are presented below.

Most participants interviewed felt that ETMA initiated links between a wide variety of people in Sierra Leone and created a national awareness of the importance of the environment. Other participants could cite specific actions created by the workshops. At a minimum, ETMA helped to make the environment an issue and provided a forum which gave the issue substance. At its best ETMA spawned ideas and actions which have had an enduring impact.

##### 1. Institutional Links.

Participants indicated that lack of institutional linkages in the Government of Sierra Leone (GOSL) structure has been a major constraint to developing and implementing effective development programs. Apparently there are institutional barriers between professionals of different disciplines and between professionals and policy makers within the same ministries. For instance, agronomic research activities are carried out under the Ministry of Education, but the Ministry of Agriculture is responsible for the extension of the findings. It was felt that researchers and extension people had little opportunity to make contact, and that much research done at the stations had little impact on agricultural productivity.

Contacts made during ETMA helped to break down institutional barriers and facilitated linkages between multidisciplinary professionals.

Shortly after ETMA, the GOSL set up the National Agricultural Research Coordinating Council (NARCC), an advisory group to formulate research policy and whose membership affiliations spanned agencies and ministries. The Council includes people from the Land and Water Development Division (LWDD), an implementing agency in the Ministry of Agriculture and Natural Resource and Njala University, a research agency in the Ministry of Education. Reportedly, ETMA provided professionals from both ministries the opportunity to discuss issues of common interest during the workshops, and that discovery of common interests facilitated the melding of disciplines. In a second example provided to us, the Environmental Management Association of Sierra Leone, an interdisciplinary committee, was established during the second workshop on the role of extension.

Further influence of ETMA in facilitation of linkages occurred when the Ministry of Natural Resources and the Ministry of Agriculture and Forestry were combined into one ministry. While the decision to integrate the ministries had nothing to do with ETMA, participants felt that ETMA facilitated collaboration among multidisciplinary professionals subsequent to the merger.

ETMA reportedly helped to establish links between the private sector and GOSL agencies. Since ETMA, the LWDD has received an increasing number of requests to apply its expertise from both the private and public sectors. For example, LWDD will be doing feasibility and soil conservation management plans for the Sierra Rubite Mining Cooperative and for two private agricultural firms.

Papers presented during the workshops were cited as having specific impacts. Swampland development for rice culture was introduced as an environmentally sound alternative to upland food production and as a means to reduce shifting cultivation. Reportedly, the 1984 Swampland Development Workshop funded by FAO was a result of the interest generated by the paper. Subsequent to the Swampland Development Workshop, funds were released to develop 500 hectares of swamp as a pilot.

In another example of the effects of a multidisciplinary professional forum, a university professor told us that ideas in his presentation on environmental impacts of fuel demand subsequently appeared in reports from the Forestry Service. It appeared doubtful that these ideas would have been disseminated across the institutional barriers without the ETMA forum.

Links established by ETMA between ministries and individuals has forwarded the cause of the ever-increasing number of Integrated Agricultural Development Projects (IADP's).

## 2. Making Environment an Issue.

Cessation of ETMA funds did not halt concern for environmental activities. A workshop, (referenced above) along the lines designed by ETMA, was conducted in 1984 under FAO sponsorship. This activity was pursued, organized, and conducted by LWDD within the Ministry of Agriculture and Natural Resources following their experiences as the Sierra Leonean contact with ETMA. The LWDD has also requested continued support for similar activities from USAID which are in accord with the CDSS of the USAID. Ideas formulated by ETMA may also have contributed to the continuation of FAO, IITA and Japanese aid projects.

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ETMA also had an effect on subsequent GOSL/USAID projects. For example, environmental concerns were highlighted in the Adapted Crop Research and Extension (ACRE) project of USAID following attendance at ETMA seminars by future ACRE project personnel.

Issues introduced during the ETMA seminars have been instrumental in formulating national programs. National Tree Day was initiated in 1985, and speeches made for the occasion reportedly reflected ideas that originated during the workshops. Additional environmental issues being acted upon by the GOS are integrated pest management (vs. total pest control), and the importance of identifying and studying medicinal plants. Evidence of additional support for environmental issues was reflected in the number of environmental professionals reportedly being hired by GOSL agencies.

### 3. Conduct of Workshops.

LWDD personnel were satisfied with the control that they exerted over seminar planning, preparation and execution. Papers were submitted to LWDD prior to the seminars for their review. It was felt that more lead time and a more critical review would have helped keep some papers on-track. Too little time may have been devoted to discussion of papers presented. The overall length of the seminars was judged to be adequate. The publication of seminar proceedings and final reports has allowed dissemination of the information to a wider audience. Results reported are showing up in subsequent project activities. The establishment of a list of recommendations from each seminar permits a point of departure for future activity. Since the list is a result of consensus-building achieved during the conference, a wide range of personnel can be expected to be committed to the ideas on that list.

Eighty percent of the papers presented were from Sierra Leone personnel and were appropriate to the problems being addressed. Although the papers by U.S. personnel were of a theoretical nature, they were judged to have been appropriate in the Sierra Leone context. Attendance at the workshops was made up of individuals actively involved in environmental issues, mostly government employees. The regional nature of the seminars was nearly unanimously endorsed as desirable. Similar problems in and solutions suggested for neighboring countries far offset any logistical problems encountered in arranging travel, etc.

ETMA provided workshop management experience for many participants. While it was obvious that the extensive technical expertise to effectively address environmental issues resides in Sierra Leone, few models existed for bringing together a wide range of disciplines for open discussion, and few GOSL personnel had experience in conducting large round-table workshops. ETMA provided both the model and management experience for a number of GOSL personnel. It should be noted that the ETMA model was not a pre-cast program so much as an iterative process developed by GOSL and ETMA personnel during the course of the proceedings. Personnel from the LWDD and ETMA met nightly to assess the day's proceedings and make necessary adjustments.

ETMA provided two exposures followed by one experience funded by FAO. Additional experience would be welcome. One forum that exists for such an opportunity and which would benefit from outside assistance, is the annual workshop conducted by the Agricultural Society of Sierra Leone. This organization, at present, touches only a segment of those involved in environmental issues and would benefit from a wider range of expertise and interests.

In the initial seminars it was felt that inclusion of a wide-range of audiences (policy makers, administrators, technicians, farmers) was desirable in order to forge a broad-based concern for environmental issues. In future activities, it was suggested that individual audiences be targeted, that more field trips be included, and that the workshops be held at Njala University College. In-service training for extension and agricultural/natural resource personnel was commonly cited as a priority need. When a primary target is the land user audience, caution was expressed about involving such a wide regional approach that the local concerns of these users is lost in technicians talking to technicians. Some participants felt that policy makers should have attended more sessions in order to benefit from the professional discussions.

Rather than employing a coordinator for West Africa in any future ETMA type activities, it was suggested that coordination come from within Sierra Leone, perhaps from the newly formed National Agricultural Research Coordinating Council or the University Research and Development Services Bureau within the Ministry of Education. The existence of a West African coordinator was critical in making initial links with other regional institutions and guiding the first workshops.

In sum, sensitization was the key word heard in Sierra Leone. The first seminar (Land Use Planning) addressed dangers to the environment from agricultural development programs. While increasing food production is the priority for development programs, it is the judgement of the evaluators that ETMA permitted professionals the opportunity to formulate concerns about the impact of production systems upon the environment, and ultimately, the impact of a deteriorating environment upon food production.

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## B. Ivory Coast

ETMA put on two seminars in the Ivory Coast. The first in 1982 was on techniques of environmental impact assessment followed in 1983 by ecological consequences of river basin development.

The influence of ETMA was extremely positive from all viewpoints solicited in the Ivory Coast and from the Regional Economic Development Service Organization's (REDSO/CWA) regional viewpoint. Once again the key word was "sensitization." It sensitized people in key positions of authority. The fact that high level personnel from the various governmental services spent two weeks at each seminar away from their jobs indicated the importance and interest assigned to environmental issues. Interest in the seminars was growing, with the second event (River Basin Development) attracting a larger audience and both seminars sustaining their attendance throughout the two-week time period. The seminars facilitated linkages between technical services whereby personal contacts were made, expertise in specific technical areas was recognized country-wide, and an atmosphere of cooperation between services was created.

As in Sierra Leone, ETMA helped to make environment an issue. Participants felt that the workshops and the coverage in the national media created an awareness that the environment is important and that national and personal livelihoods are tied to it. In addressing environmental issues, the workshops permitted a wide range of disciplines and interests to come together to identify environmental problems and to formulate plans of action.

Since ETMA, the Ministry of Environment has been dissolved with former personnel and responsibilities of that ministry assigned to three Ministries: 1) Agriculture, Water and Forests; 2) Marine Affairs; and 3) Ministry of Industry. Within the



Ministry of Marine Affairs rests the National Commission of the Environment which has final authority over environmental affairs. The Ministry of Industry, through the Environment, Normalization and Technical Direction, is concerned with industrial development and the impact of industrial development on the environment. The Ministry of Agriculture, Water and Forests is a technical group dealing in agriculture, only with cash crops and doing no research. The Ministry of Rural Development deals with food crop issues, while the Ministry of Education and Research conducts all research. The dissolving of the old Ministry of Environment was due simply to the financial crisis in the Ivory Coast in 1984 and the need for efficiency in government. Issues of the environment are still very much recognized and are being dealt with by the respective production-oriented ministries and monitored by the National Commission of the Environment.

#### 1. Institutional Links.

ETMA reportedly increased the effectiveness of the Environmental Commission under the ministerial reorganization. Typically, governments in francophone Africa tend to be highly centralized and function on a top-down basis with minimum opportunities for contacts between professionals within different ministries. Presentations and round-table discussions during ETMA provided professionals with opportunities to discuss common problems regardless of ministerial or professional affiliation.

Many practical examples were found of the impact of ETMA on exchange of ideas across agencies and ministries. One agricultural officer in the Office of Planning first heard about the health considerations of irrigation dams. He considers this knowledge to be important in planning projects but felt that he may not have gotten this point of view without the ETMA workshops. During ETMA, professionals in the Ministry of Industry

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and in the Ministry of Marine Affairs were apprised of the impact of both (1) industrial pollution and (2) lagoon sand excavation on Ivory Coast's fishing industry. Apparently the Ministries are cooperating in conducting impact studies.

## 2. Making Environment an Issue.

ETMA helped promote the recognition that the environment is important, and that a country's livelihood depends upon the condition of the environment. A wide range of professional interests was brought together at ETMA seminars which permitted a synthesis of ideas and building of consensus. Environmental issues of particular current concern were lagoon sand exploitation, industrial development, desertification, deforestation, fire control, and fresh and salt water pollution. Traditional practices that are environmentally sound were also brought to the attention of seminar participants. The REDSO/CWA office feels that concrete action programs are now needed to follow-up on the round table discussions created by the seminars. The public-at-large was made aware of the environment issues through daily coverage by the media during the seminars. There has been an attempt to decentralize environmental concerns throughout the country by working through cooperatives.

Government policies toward environmental issues was strengthened as evidenced by stronger environmental components and conscience in development programs. ETMA provided an opportunity for government officials to develop their thoughts on environmental issues. The President of the Ivory Coast gave a speech on the importance of monitoring the impact of development upon the environment (the theme of the first ETMA seminar) and declared that development and environmental protection must proceed in harmony. The second seminar (river basin development) produced recommendations that served as a basis in formulating

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environmental policy. Heated but useful discussions took place between administrators and technicians. The new 5-year plan included environmental codes.

Professionals (research biologists, oceanographers, etc.) who organized and/or attended the seminars and who gave papers are now in administrative positions. During conversations with these individuals it was apparent that it is their will that development proceed in harmony with environmental concerns. As they have both training and authority, there is an excellent chance that environmental concerns will be considered.

The cessation of funds for ETMA activities after 1983 was disappointing to both Ivory Coast personnel and to USAID regionally. Both felt that the public issue of environment would have been better sustained by continued ETMA activity. This does not mean that environmental concerns were dropped with ETMA. To the contrary, an Environmental Week was begun in 1985 and an organization called the "Green Cross" has been organized to assist with environmental programs. Regular radio broadcasts are given on environmental issues. (We heard two such broadcasts during our short stay in Abidjan on forestry and health.) The Ivory Coast is prepared to hold further conferences with international participation. (In fact, five of the eight West African countries -- Sierra Leone, Ivory Coast, Congo, Togo, and Cameroon -- were willing to continue ETMA-type activities with at least partial host-country funding. The Ivory Coast has also been singled out as an example of a mature approach to African river basin development activity. It should be studied for its past successes and shortfalls to develop sound, empirically based, and relevant guidelines to many similar activities in which USAID is becoming involved.

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### 3. Regional and International Linkages.

Attendance at the workshops by professionals from neighboring countries was appreciated by Ivory Coast officials. They are keenly aware that stewardship of the environment is a regional matter. It was widely recognized that industrial pollution outside the borders of Ivory Coast can seriously affect the fishing industry, and they fear that desertification in the Sahel will impact on their agricultural and forestry base. They felt that regional action is necessary, and that ETMA provided one such opportunity.

Officials welcomed international participation as well. They felt that environmental problems being faced by North America and Europe will be their problems tomorrow. Desires were expressed to hold sub-regional conferences with international participation, particularly on the subject of desertification with Sahelian country input.

### 4. Conduct of Workshops.

Papers presented in the seminars were given with great pride. In most cases, technical professionals had their first opportunity to present their ideas to such a wide and diverse audience. U.S. participation was regarded as helpful in developing themes for the seminars. Papers presented by U.S. personnel were appropriate (one said interesting but inappropriate) and delivered in the French language. Some concern was expressed that the conferences were too general with not enough sessions in which subjects were presented in detail. Others felt that the sessions were too specialized with too little discussion because of the narrowness of the topic. The West African representative of ETMA was a valuable addition to planning the logistics of workshops.

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An interesting concept of training approaches was discussed. Recognizing that education must extend to the basic grass-roots level, it was suggested that a cadre of technicians be formed who would transmit environmental education in the form in which driver's training is taught locally.

C. Congo

In 1981, the Director General of the Environment (DGE) was appointed within the Ministry of Tourism, Leisure and the Environment. The role of the office is to coordinate all activities influencing the environment, including water, air and soil factors.

ETMA support included the organization of the first seminar as a joint effort by the ETMA West African representative and the DGE. Papers were also given by U.S. personnel supported by ETMA. The seminar was attended by a wide range of audiences--union members, technicians and administrators. Attendance at the second conference in 1985 with support from the U.S. Ambassador doubled.

The one ETMA seminar given in 1983 in the Congo dealt with urban environmental problems. The conference was regional in nature -- the Ivory Coast, Cameroon, Central African Republic and ORSTOM were represented. This international input was important in obtaining ideas on how others solve similar problems and how these ideas can be extrapolated for use in the Congo. Regional models and expertise were identified in mass media programs currently being conducted in both Cameroon and in the Ivory Coast. A regional conference for Ministers of the Environment is being held in November, 1985, in Bangui.

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1. Influence of ETMA.

ETMA's impacts were manifold. It identified problems and existing technical services in the Congo that could address the technical problems associated with the environment. As a matter of procedure, it is necessary for the DGE to coordinate with a number of governmental ministries. The views of these other various technical services was aired during the seminars bridging the gap between agencies. However, there was question as to the extent to which other agencies attended since the Ministry of Health and Ministry of Water and Forest personnel interviewed were not present at the ETMA seminar.

As in other countries visited by the evaluation team, the project sensitized people to environmental problems. Also, as was done in other seminars, a list of recommendations was put forward for action priorities. These included issues of pollution, conservation of natural resources, and impact studies. The conference also created a working definition of the environment based on a synthesis of ideas from workshop discussions.

The recommendation for impact studies was pursued. In 1985 (ETMA funding had ceased for activities in the Congo at the end of 1983), a conference was held on impact studies. The format was along the same lines as designed by ETMA. DGE and the U.S. Embassy were so convinced of the positive impact of ETMA that the U.S. Ambassador made available U.S. funds from the African Manpower Development Program (AMDP) to hold a second conference. The Congolese now plan a workshop that would evaluate the appropriateness of the recommendation of the 1983 urban environmental management seminar. Conferences are viewed by the Congolese as consensus-building forums for future action.

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Quite likely for the immediate future, progress made on these recommendations will prove to be inadequate due to the lack of funds. Numerous examples were given of programs planned (e.g., urban garbage disposal, urban sewage, urban drainage ditches, mosquito control, potable water). Even when donor funds have been available, the required matching funds from the Government of the Congo (GOC) have not been forthcoming. At the same time, however, ideas presented at the seminars are showing up in political speeches and other initiatives and the DGE is getting requests from various ministries to do impact studies.

Since ETMA, the Ministry of Water and Forests has created the first National Tree Day (March 6) in 1985 when every Congolese must plant a tree in recognition of the fact that they must guard their heritage of forests for use by future generations.

There is no shortage of action that has some ETMA spinoff. The DGE would like to carry out a public education program to reduce the damage caused by the cutting of forests for fuelwood. There has been public participation in the cleaning of urban drainage ditches. A program of mosquito control is planned for the city of Brazzaville by the Ministry of Health but has not been reviewed by the DGE for an impact study and monitoring pointing out the problem of coordinating the various agencies involved in environmental issues.

## 2. Ideas Generated by the Workshop.

It was suggested during the evaluation that environmental technicians need to be trained in project administration in order to insure that administrative policy is made on the basis of sound technology. Journalists, trained in environmental issues, would be able to accurately report on the environment and thus form an effective link between government and the general public.

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Environmental education is needed for extension agents. It was suggested such a topic would be appropriate for a seminar. The Director General of the Environment would like to open a dialogue on the definition of and reason for environmental regulations.

The next five-year plan will include a decree requiring impact studies be done prior to development activities. Each ministry will be responsible for using its technical services to enforce the code while the Ministry of Tourism, Leisure and the Environment will serve as consultants. Although codes exist, these policies are not supported by law.

Project size and complexity were described as a problem. Smaller, sustainable projects are needed. Better coordination is required between government agencies on environmental issues. An example is the effectiveness of mosquito control without a functioning system of urban drainage ditches.



## V. FINDINGS IN EAST AFRICA

### A. Sudan

Due to air transportation problems, the evaluation site visit to Sudan was limited to 2 1/2 days. Only Dr. James O'Rourke was able to travel to Sudan.

ETMA support focussed exclusively on the Institute for Environmental Studies (IES) at the University of Khartoum, and through it, the Geography Department. This is explained by Clark University's earlier work with the Geography Department as well as the fact that within the government of Sudan there was no single entity or program charged with environmental management. Instead there had been a piece-meal, poorly coordinated approach characterized by over-lapping responsibilities and an absence of clear policy. Notwithstanding, there is general agreement in and out of government that environmental management is a priority need in the development process.

It is noteworthy that during the last two years of ETMA activities in Sudan, the nation was suffering one of the worst droughts in recent history. This lent an element of immediacy to ETMA studies and an urge to develop remedial actions for problems identified in the studies.

#### 1. ETMA in the Institute for Environmental Studies (IES)

The IES was created in 1979 to conduct both training and research at the post-graduate level. Since that time it has accumulated a vast base of environmental data in Sudan, supported strongly by ETMA, and is now able to tap that data base and apply it in providing specialized consulting services on the environment.

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ETMA-supported activities carried out through the IES included (only some of the training was evaluated):

- Environmental monitoring studies at eight sites in Eastern and Western Sudan.
- Baseline/trend analyses with maps and remote sensing imagery.
- A diversity of training events as itemized in Appendix II, ETMA Training Activities.

Confusion in management characterized the first two years of ETMA activities in Sudan. Improvements in management as well as the availability of additional funds resulted in a more satisfactory arrangement. The hiring of an AID employee's wife as the local manager for ETMA was a key improvement.

Training programs did not involve other countries or regions with similar problems (as opposed to training program in other countries where several nations would be represented). The IES was satisfied with outside expertise brought in for the training courses. Inability to communicate in Arabic was not a problem.

## 2. Impact of the ETMA Program

The clearest benefit of ETMA-supported work was the overall institution building that it fostered. ETMA financing made it possible for competent but inexperienced researchers in IES to carry out field work and develop a real capability as well as confidence. The result has been a strengthened institution (at a time when the University of Khartoum is weakened), now working with AID and AID-supported PVO's and with a recent offer from UNESCO for financial assistance.

Great importance was accorded to the regional workshop process that was employed on four occasions to follow up on the environmental monitoring studies. This process, which actively engaged local farmers and herders as well as local social and political leaders grew out of earlier experiences in Southern Sudan by the Geography Department, with elaborations made possible through the studies and workshop exercises. Following each of the four regional seminars, local committees were set up to present the recommendations to regional governmental representatives.

Out of this work emerged the concept of Village Intervention Programs, championed by the geographers, and based upon extensive planning consultations with local farmers, herders and political leaders. The planning results in an action plan which is thoroughly studied by the local people before presentation to regional governmental authorities. USAID brought this IES work to AFRICARE's attention and AFRICARE subsequently commissioned IES to carry out fifteen such studies as a means of preparing projects.

The ability of IES to work at the local, village level seems to coincide with the growing commitment of donors to work with villages more directly. Sudanese associated with the IES are vocal in their belief that the Central Government can do little through its existing structures to assist villages and remedy local environmental ills.

Extensive media coverage of ETMA activities was accorded in the magazine SUDANOW, a high quality periodical published in Khartoum.

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Criticisms of ETMA centered on questions of money and its management. The Geography Department felt that too little money was made available through ETMA relative to the work that was agreed upon. They also criticized the yearly programming process, which excluded those who were to carry out the field work. Others felt that publications should have been done in Sudan, not at Clark University. Finally it was pointed out that regional personnel (as opposed to researchers from Khartoum) could have been used to greater effect in data collection and compilation. (Regional people did participate in the regional seminars, however.)

The USAID Sudan employees interviewed about ETMA were in general laudatory of the work done and the effect on IES. They commented on the cumbersome nature of ETMA management during the first two years, which seem to have produced more dissatisfaction and stresses than in any other country where ETMA was active.

At the time of the evaluation, USAID Sudan was preparing a local currency grant to IES that would facilitate the contracting of its services for work needed by USAID. This is a clear indication of AID's perception of IES's capabilities which prior to ETMA were potential but not real.

### 3. Conclusions on Training

A number of general observations about training are made which bear on this aspect of ETMA's work in Sudan.

Training for local and regional (sub-national) technicians is a real need but ideas on priorities and approaches differ.

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Training priorities mentioned included:

Training of trainers: This received highest priority by IES and has been conducted in four regional seminars and one national seminar with ETMA support. Training is for primary and secondary school teachers on environment issues. IES is developing teaching materials to be used by these teachers.

Training for local technicians and planners. IES presently provides this type of training on university campuses but believes it needs to be conducted in the local setting. The Geography Department sees this as a need to be supported by the donor community but including local land users as well. The Ministry of Agriculture believes it should be done by IES at IES facilities on-campus. USAID does not currently support training of field extension agents in Sudan because of the difficulty these technicians will have implementing programs under the current policies.

The Ministry of Agriculture believes that extension work is possible and could be fruitful but there was no plan recognizing the concept, methodology, or value of extension education. Any extension work currently being conducted is very informal and sporadic. They also made the point that since promotion in rank and salary is not affected by short-term training, there is little career incentive to attend such courses.

Training of local herders and farmers. IES sees this done by local technicians. This audience also needs an incentive to attend in the form of project goods and services. Funding must come from the donor community.

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Training for non-environmental students. Courses need to be added to liberal arts, business, etc., curriculum at the university level.

#### 4. Other Conclusions

The Geography Department believes that the major problems have been recognized by the research community, most of them known prior to ETMA. A further phase of research is not needed. What is needed are actions and implementation programs. Ministry of Agriculture personnel consulted agree that implementation programs must begin but are concerned about a lack of certain research information.

All elements of Sudanese expertise on environmental matters believe that without funding for implementation of projects recommended as a result of ETMA seminars, conferences, and courses, the whole ETMA exercise will have been academic. They doubted that funding would be forthcoming from their own Central Government. Any programs that take place would have to be funded by donor agencies or from Sudanese regionally generated revenues. Political support for environmental activities will only come from pressure that the donor community can bring to bear on national policy makers and from pressure that local land users can bring to bear on regional policy makers, and they in turn can exercise on national policy makers.

The Geography Department will be preparing a short, comprehensive document summarizing recommendations from the various seminars, conferences, and workshops that the donor community can use as its "shopping list."

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## B. Kenya

A greater variety of activities were developed in Kenya than any other country in Africa: local resource profiles (eventually termed environmental assessments), soil erosion monitoring, water pollution monitoring and baseline surveys of Lake Victoria, a major effort to survey and develop a strategy for endangered plant resources, and a number of conferences, workshops, seminars and overseas training tours related to the above.

A second important distinction in Kenya is that ETMA worked with several institutions: The National Environment Secretariat (NES), the Lake Basin Development Authority (LBDA), and the National Museum, and in addition drew on the two universities for collaboration.

### 1. Antecedents

Kenya is one of six East African countries in which Clark University's Program for International Development had been working since 1976. Work was underway with the Ministry of Agriculture, the University of Nairobi, and the National Environment Secretariat (NES).

### 2. Organization and Evolution of ETMA Activities in Kenya

During 1981-1982, Dick Ford, the first Field Representative from Clark University worked within the offices of the NES at the Kenyatta Conference Centre, where he managed ETMA activities in Kenya as well as other countries in East Africa. Dr. Ford travelled extensively during this period initiating various activities throughout East Africa.

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Vernon (Tommy) Gilbert was the second ETMA Field Representative in East Africa. He chose to remove his offices from NES and locate them adjacent to the Energy Initiatives for Africa project offices in the International House, several blocks from the Kenyatta Centre. During his management in 1983 and 1984, Tom Downing a doctoral candidate in geography from Clark U. worked within NES, managing the various activities underway and working directly on the District Environmental Assessments. During this period, project finances were drastically cut from the level that had been planned, and many initiatives had to be abandoned.

In 1985, the last year of the project, during which many activities in Kenya came to a conclusion, there was no senior management capability, since Mr. Gilbert had returned to the USA upon completion of his 2-year contract. His former assistant, Rita Bowry (a Kenyan citizen) became ETMA's regional office manager.

### 3. ETMA in the National Environment Secretariat.

#### a. Organization and Management

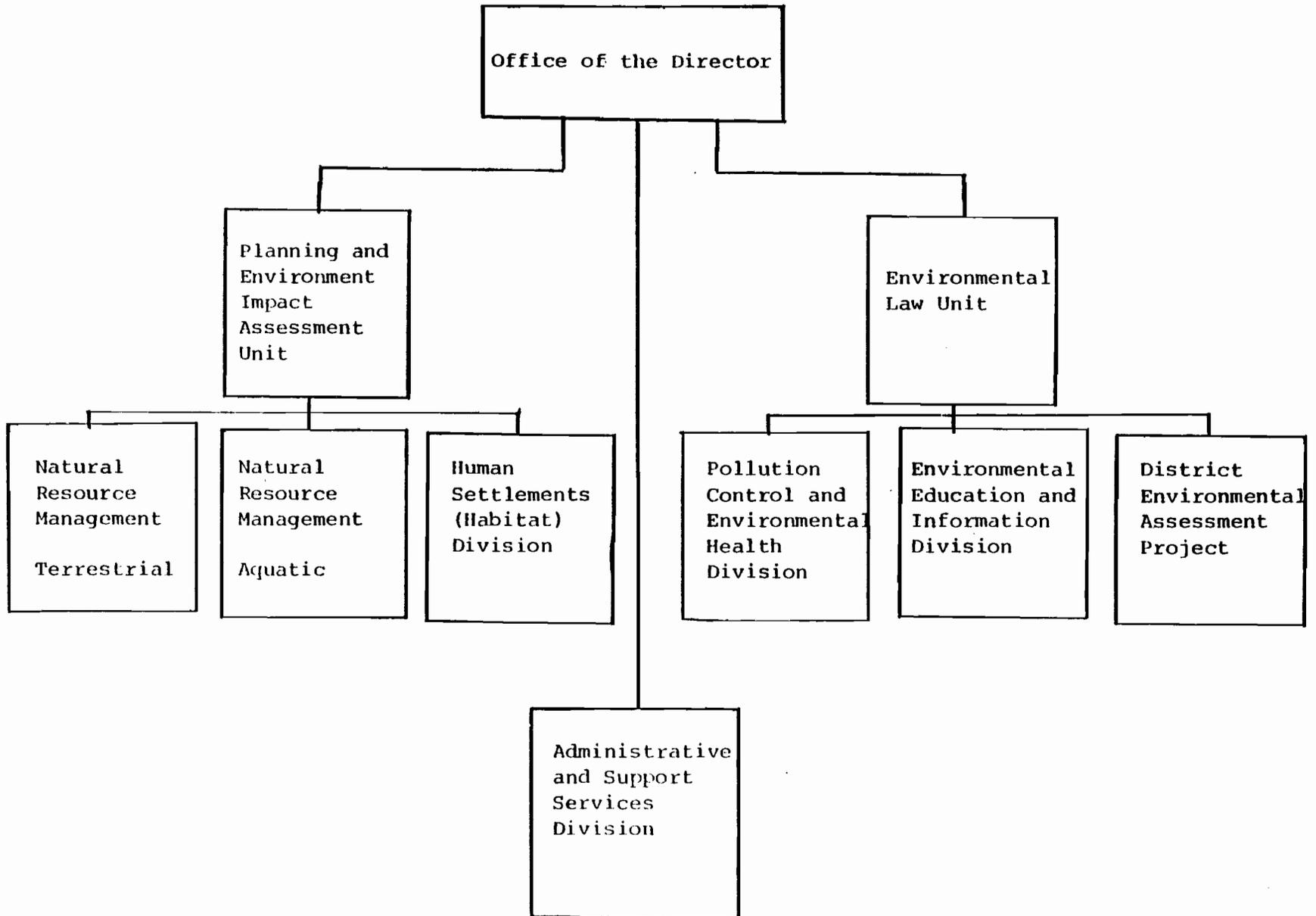
In 1979, the NES was moved from the Office of the President to the new Ministry of Environment and Natural Resources. (See Figure V.1 for organization chart.) This move together with the fact that as of 1985, NES continued to lack a legislative mandate point to an apparent weakening of political commitment to NES and its work. Thus, NES lost some of the strategic political strength that was assumed during the design of the ETMA project.

ETMA activities undertaken with NES were:

- district environmental assessments (also termed resource or environmental profiles)
- soil erosion monitoring

Figure V.1

Organization Chart of the National Environmental Secretariat (NES)



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- population and resource trends projections (originally termed environmental monitoring)
- a national conference on water supply and pollution control
- a national workshop, followed by a strategy conference, on Resources for Development (focus on plant communities).
- short term training in soil degradation, computer operation, and plant identification.

These activities were planned jointly by the ETMA/East Africa Representative and the Director of NES. In general, lower level staff, including Division Chiefs did not participate in decisions on the yearly work plans, or their modifications. This was a source of dissatisfaction in the later stages of the project, when NES leadership had changed.

Each year a working agreement was formalized with NES, specifying the various tasks to be accomplished and the corresponding budget. Table V.1 shows the yearly and total budgets from the various yearly working agreements. Budgets became progressively more specific and detailed over time.

#### b. District Environmental Assessments (DEA's)

Eleven DEA's had progressed to the final draft or final publication stage by the end of September 1985 (Fig. V.2 and Table V.2). The DEA's inventory natural resources and the human environment and diagnose the various environmental problems found to exist.

The process of preparing the DEA's evolved over the five years of ETMA involvement with NES. As experience was gained, the following five-step process evolved:

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Table V.1.

ETMA Program with National Environment Secretariat, Kenya:  
Yearly and Total Scheduled Costs, 1981-1985

(Source: Yearly Working Agreement Budgets)

|                  | District<br>Environmental<br>Assessments     | Soil<br>Erosion<br>Survey | Analysis of<br>Population<br>and Resource<br>Trends | Training | Other  | U.S. Management | Total     |
|------------------|--|---------------------------|---|----------|--------|-----------------|-----------|
| 1981             | (In 1981 no detail was prepared by activity) |                           |   |          |        | (not shown)     | \$ 66,400 |
| 1982             | 21,100                                       | 10,200                    |   | 63,149   |        | (not shown)     | 94,449    |
| 1983             | 66,300                                       | 38,392                    | 17,149  | 14,500   |        | 89,173          | 225,515   |
| 1984             | 52,500                                       | 31,489                    | 14,123  | 17,500   | 22,000 | 79,604          | 217,216   |
| 1985             | 18,500                                       | 15,500                    | 1,000   | 3,000    | 2,000  | 30,794          | 70,794    |
| Total<br>(82-85) | 158,400                                      | 95,581                    | 32,272  | 98,149   | 24,000 | 199,571         | 607,973   |
| % Total          | 26   | 15                        | 5   | 16       | 4      | 32              | 98        |

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Table V.2

## District Environmental Assessment Progress to Sept. 1985

| District        | Field Work | Final Draft | Workshop   | Publication |
|-----------------|------------|-------------|------------|-------------|
| Kajiado         |            | 1979        | 1981       | May 1980    |
| Nyeri           |            | 1979        | June 1982  | May 1980    |
| Kisii           |            | 1981        | Apr. 1983  | Aug. 1981   |
| Kitui           |            | 1981        | Jan. 1984  | Dec. 1981   |
| Murang'a        |            | 1982        | July 1985  | 1984        |
| Nakuru          |            | 1982        | Nov. 1984  | 1985        |
| Meru            | July 1982  | Aug. 1985   | --         | --          |
| Kirinyaga       | Aug. 1982  | in progress | --         | --          |
| Kilifi          | July 1983  | Dec. 1983   | Feb. 1984  | Apr. 1984   |
| Kwale           | Nov. 1983  | Feb. 1984   | June 1985  | June 1985   |
| Lamu/Tana River | July 1984  | July 1985   | Sept. 1985 | Oct. 1985   |
| Mombasa         | Feb. 1985  | July 1985   | Sept. 1985 | in progress |

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- review documentation
- field work to fill in data gaps
- prepare draft report
- hold workshop in the district, with involvement of local and national agencies working at the district level.
- revision of draft and publication of final report, incorporating an appendix with the workshop proceedings.

In June 1983, the multi-disciplinary teams that had been assembled from the various divisions in NES on an ad hoc basis to do the DEA's were brought under the management of the District Environmental Assessment Project (became a new unit in NES functioning at the same level as the divisions).

A key step in the DEA process is the workshop. These normally lasted a week, during which the draft DEA would be discussed by the participants. Participants would be divided into a number of thematic working groups. From 50 to as many as 80 participants attended these workshops, usually including a large contingent of NES staff -- 15 to 20.

The workshops served to reveal errors of commission or omission, but more importantly they engaged people actively in considering and using the material in an open forum that brought together all significant governmental officers, both elected and appointed, as well as non-governmental organizations, such as churches, industry and universities.

The DEA's and decentralized planning: A major purpose of the DEA's is that of influencing the district level planning process which has been underway since 1980 under the aegis of the

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Ministry of Planning and National Development. The District Development Plans (DDP's) are prepared for a four year period, and two cycles -- 1979-1983, 1984-1988 -- have been completed.

The Kajiado DDP was compared to the Kajiado DEA to ascertain the degree to which the DEA influenced local planning. No obvious use had been made of the DEA. The DEA devoted a major section to an analysis of the livestock carrying capacity of the district for various scenarios and into the future. It wasn't utilized in the DDP nor were other aspects of the DEA.

The utilization of the DEA's in the DDP document may be constrained by the relative lack of sophistication of the district planning process. There is a clear lack of diagnostic treatment of district development problems and needs in the DPP's. In the Murang'a DDP, for instance, there is no mention of controlling soil erosion in the development goals of the agricultural sector. The Murang'a district was chosen for soil loss monitoring (discussed below) because of its grave soil erosion problems.

If the DEA's are to exert an influence on the district development planning exercise, NES may have to approach the Rural Planning staff of the Ministry of Planning and National Development in order to find ways to synthesize environmental planning and development planning.

Perceptions of the utility of DEA's: A considerable range of individuals were queried as to their perception of the value of the DEA's. At a workshop on the Mombasa DEA (which one evaluation team member attended for 1 1/2 days) reactions were mainly positive. Participants saw the need to convert the workshop's rather general recommendations into precise, action-oriented recommendations that would focus on organizational and financial aspects of execution. None mentioned the DDP for Mombasa as a means of

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incorporating the DEA into the process of development. This is understandable, in that the 1984-88 DDP was completed and published, and the next opportunity to influence the process would not come up before 1987.

In addition to the perceptions registered at the Mombasa workshop, various governmental officials were queried in Nairobi. The perceived usefulness of the DEA's is somewhat diluted by governmental initiatives on natural resources problems that supercede the deliberate planning process because of the urgency to act. This is the case of soil erosion and deforestation. In 1982 the Presidential Commission on Soil Conservation and Afforestation was created in order to mobilize and popularize efforts to combat loss of soils and forests. Nevertheless, the Chief Executive of the Commission always sends representatives to the DEA workshops and was congratulatory of NES's work at the district level.

In AID/Kenya and in REDSO/East Africa offices there was no judgement positive or negative on the usefulness of the DEA's. The DEA's simply had not engaged the attention of the AID mission.

Planned versus final DEA outputs: Twenty DEA's were to have been produced (four per year); only eleven were completed. Four of the eleven were districts for which preparatory work had been done by Clark U. prior to the ETMA project. The discrepancy is explained by:

- an overly ambitious original target in terms of the capacity NES and ETMA to manage and execute the DEA's.
- the additional time demands of adding the district level workshop and subsequent revisions as an integral step in the DEA preparation.

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- interruption of work on the DEA's for a six month period in the first half of 1985.
- lack of a technical editing capability in NES, which was eventually resolved through contracting out the editing.

Editing and production: The project did not take into account the considerable work involved in editing and producing the DEA's, and the need for NES to develop this capability. By the end of the project, NES still lacked the ability to edit reports in a timely and accurate fashion.

Shifting priorities in NES: In the first half of 1985 the director of NES employed the DEAP staff in the preparation for three international conferences in Nairobi (UNEP; UN Habitat Secretariat; and a Tree Conference), causing numerous activities, especially district workshops, to be compressed into a short time prior to the ending of the project. Also in the Spring of 1983, the geographic focus of the DEA's changed unexpectedly (at least in terms of that year's working agreement) to the coastal districts.

Environmental impacts not assessed: The name of the DEA exercise suggests that development actions were to be assessed. In fact, the various actions proposed in the four-year District Development Plans were not assessed for their impacts. Instead, the DEA's reviewed trends and various systemic problems, without reference to the actions proposed in the DDP's, either in terms of their implications for demands on resources or for the environment.

Follow-up to the DEA's: Both NES and ETMA management began to recognize towards the end of the project the need for some kind of follow-up to the workshops that would translate recommendations into action proposals within the District Development Committee.

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Major achievements in the DEA component:

- creation in 1983 of a management unit in NES with a permanent staff, with the resulting positive benefits of staff and management continuity and the possibility of growth in expertise.
- increased accuracy and completeness of the DEA's.
- demonstrated ability to organize and successfully run workshops.
- working relationships with university staff and researchers and several governmental offices (Forest Department and the Kenya Marine and Fisheries Research Institute), through the participation of individuals from these organizations in the preparation of DEA's.
- an increased awareness and an information base at the district level in eleven districts of environmental problems and concerns.
- a report production capability in NES, including two IBM PC's, two printers, a plotter and the ability to use the equipment.

Future plans in NES for DEA's: Mrs. Wanyoni, head of the DEAP unit in NES stated NES plans to undertake one DEA per year. She estimated the costs of a complete exercise at 345,000 Kenyan shillings (US\$20,000).

c. Projections of Population and Resources Trends

This component of the ETMA work in NES originated from a request by the former director Mr. Nyamu for a visible, educational program to exhibit at the annual agricultural fair that would show the results of population growth on the environment and the resource base. Clark University's Dr. Frank Puffer was commissioned to develop a district level computer program that would also be useful for the DEA's. Projections used 1979 census data later up-dated with 1983 statistics. Projections for all 41

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districts were eventually done. Projections included a wide range of parameters. Table V.3 shows projections that were prepared for the Kilifi District Environmental Assessment.

Initially the program was developed for running on a TRS-80 and an NES staff person (Wyecliff Mutero) was trained in the operation of the program, during six months in 1984, at Clark University. Mr. Mutero wrote a pamphlet that explained the illustrative program developed for the Kilifi District.

In August 1985, Clark University delivered two ETMA-financed IBM-PC's, and in September, Prof. Puffer spent two weeks in Kenya training NES personnel in their operation, including the population and resource trends program.

A qualification to the clear and visible success of this component of the ETMA program in NES is the incompatibility of the NES program and other projection programs used by different Kenyan governmental agencies, especially the Rural Planning Department of the Ministry of Planning and National Development who are responsible for the District Development Plans at the central governmental level.

#### d. Soil Loss Monitoring

Research on soil loss was specified in the original 1980 Memorandum of Agreement between NES and Clark University. Subsequently, presidential level attention was placed on the soil erosion problem in Kenya, and NES initially had a lead role in preparing an educational pamphlet with Dick Ford's assistance, stating the problem and the government's concern. It was during this period, in 1982, that an ambitious plan was developed to undertake soil loss monitoring in 20 districts.

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Table V.3

## Population and Resource Trends, Kilifi District

| RESOURCE                           | RELATIONSHIP  | UNIT                     | TOTAL NEEDS FOR DISTRICT |                  |            |             |
|------------------------------------|---|--------------------------|--------------------------|------------------|------------|-------------|
|                                    |   |                          | 1983                     | CURRENT TRENDS   | LOW GROWTH | HIGH GROWTH |
| POPULATION                         | Total   | 1000s                    | 522                      | 1004             | 840        | 1168        |
| FOOD <sup>1</sup>                  | Standard kcal requirements by age and sex   | 10 <sup>6</sup> kcal/day | 1052                     | 2230             | 1897       | 2563        |
| DOMESTIC WATER SUPPLY <sup>2</sup> | Urban centres   | 140lt./person/day        | 14,589                   | 44,779           | 37,464     | 52,093      |
|                                    | Rural connections   | 70lt./person/day         |                          |                  |            |             |
|                                    | Rural communal posts  | 25lt./person/day         |                          |                  |            |             |
|                                    | Natural sources   | 15lt./person/day         |                          |                  |            |             |
| WOOD <sup>3</sup>                  | Per capita consumption for firewood and timber  | m <sup>3</sup> /year     | 395,467                  | 732,518          | 612,864    | 957,293     |
| HOUSING                            | New houses needed next year based on additional households                                  | Houses/year              | 3,800                    | 7,078            | 5,421      | 8,517       |
| EDUCATION                          | % of school attenders for given age group   | No. of Schools.          |                          |                  |            |             |
|                                    |   | Primary                  | 357                      | 614 <sup>4</sup> | 465        | 755         |
|                                    |   | Secondary                | 18                       | 67               | 56         | 78          |
|                                    |   | Adult                    | 347                      | 901              | 862        | 954         |
| EMPLOYMENT                         | Labour force=85% of adults 15 to 64<br>% employed with 5% annual growth in wage employment  | 1000s                    | 210.4                    | 417.5            | 387.3      | 450.2       |
|                                    |   | %                        | 7.8                      | 9.9              | 10.7       | 9.2         |
| AGRICULTURE                        | Agiructural land/rural households   | Ha/HH                    | 4.06                     | 2.4              | 2.4        | 2.4         |
| HEALTH FACILITIES                  | Service population of 200,000 per hospital, 80,000 per health centre, 15,000 per dispensary | Hospitals                | 3                        | 5                | 4          | 6           |
|                                    |   | Health centres           | 6                        | 13               | 11         | 15          |
|                                    |   | Dispensaries             | 30                       | 67               | 56         | 78          |
| ROADS                              | Kms need at current ratio to total population   | kms                      | 2680                     | 5151             | 4309       | 5992        |
| POST OFFICES                       | Post offices needed at current ratio to total adults  | Nos.                     | 9                        | 12               | 12         | 13          |
| TELEPHONES                         | Telephone lines needed at current ratio telephones/household                                | Nos.                     | 870                      | 2033             | 2026       | 2037        |

- NOTES: 1. Food requirement calculations are elaborated in Appendix 6  
2. Domestic water demand is projected using the folling conversions:

| Demand                       | % of Population with Connections |      |    |
|------------------------------|----------------------------------|------|----|
|                              | 1983                             | 2000 |    |
| Urban connection             | 140lt./per/day                   | 8    | 18 |
| Rural individual connections | 70lt./per/day                    | 1    | 2  |
| Rural Communal posts         | 25lt./per/day                    | 24   | 60 |
| Natural sources              | 15lt./per/day                    | 67   | 20 |

3. Wood needs,<sup>3</sup> for firewood and timber, are calculated at rural=0.78m<sup>3</sup>/person/yr, urban=0.50m<sup>3</sup>/person/yr, using the same urban/rural projection as for water.  
4. Average household size in 1979 was 5.6. This is decreased to 4.9 for scenario II, and increased to 6.5 for scenario III, in year 2000.  
5. Education facilities needs are based on the following conversions
- | age class               | % of aga class attending school |      | ratio of students/school |      |
|-------------------------|---------------------------------|------|--------------------------|------|
|                         | 1983 (actual)                   | 2000 | 1983 (actual)            | 2000 |
| Primary schools         | 5 - 14                          | 60   | 75                       | 355  |
| Secondary schools       | 15 - 19                         | 9    | 15                       | 243  |
| Adult education centres | 20++                            | 7    | 10                       | 45   |
6. Total agricultural land comprises the medium and high potential areas, totaling 351,000ha., divided by rural households:

|                 | % population rural | Rural household size |
|-----------------|--------------------|----------------------|
| 1983 projection | 92                 | 5.7                  |
| Scenario I      | 82                 | 5.7                  |
| Scenario II     | 82                 | 4.8                  |
| Scenario III    | 82                 | 6.6                  |

SOURCE: NEHSS Population/Resource model, Data from other report sections, TARDA 1983 for water, wood, health facilities, roads and telephones.

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Initially, a pilot study of Kiambu District was planned and executed. It was later extended to Murang'a District. The purpose was to test an innovative soil trap which would be cheap (eventually costing \$25 each) and easy to install and monitor.

The innovative method developed by Prof. Larry Lewis of Clark University involved the use of a tubular trap, fashioned from 4" PCV sewer pipe, the adaptation of the Universal Soil Loss Equation to Kenyan conditions (for simulating soil loss tolerances), and the placement of soil traps in various field environments representing different conditions and crop covers.

Prof. Lewis worked with two technicians from NES, with the expectation of an additional 25 technicians becoming involved eventually. However, with the demise of the first Director of NES, support for the work weakened. The governmental focus for action on soil erosion also shifted with the creation in 1982 of the Presidential Commission on Soil Conservation and Afforestation. The subsequent NES Director tried on several occasions to cancel the effort. Prof. Lewis dis-engaged himself from the work after the 1983 measurements, but field data continued to be collected.

Following a critical evaluation of the work by ARD in early 1984, which questioned the reliability and validity of the traps, traps were placed in experimental run-off plots for comparison with their data and pairs of traps were placed in fields to test reliability. NES commissioned a soils scientist, A.M. Kilewe, to evaluate the data and the method.

Kilewe reported that the 1984 tests found a tendency for traps to underestimate soil loss because (1) their capacity is too small to catch all the soil washed into them during heavy showers, and (2) they were being emptied only once a week. (The



traps were emptied after every rainstorm in the run-off plots.) Kilewe also noted the occurrence of a single heavy rain of 73 mm that filled up and overflowed the soil traps.

An unexpected benefit of the work was the interest generated among farmers during the field data collection. Upon witnessing the amount of soil being deposited from their fields into the traps, many were immediately convinced of the need to take action to control erosion. Kilewe recommended that the traps be used as educational tools to instruct farmers about erosion.

In conclusion, this component of the ETMA involvement with NES was initially problematical and not perceived as successful. NES proved to be an unenthusiastic recipient of the work, which would have been better located in the Ministry of Agriculture in Prof. Lewis' retrospective judgement. The results, however, will likely be recognized in the future as a solid contribution to understanding and estimating soil erosion in Kenya in the view of the evaluation team. This judgement is based upon the generally favorable reactions in NES and in the Presidential Commission on Soil Conservation and Afforestation heard in September 1985, as well as the favorable conclusion of the evaluation done by Kilewe. Kilewe's evaluation will be the key to wider acceptance of the data and the method employed by Lewis.

e. Endangered Resources for Development

The reference is to plant resources in all of Kenya that are under pressure from agricultural expansion, grazing, wood cutting, etc. A workshop on Kenya's plant resources held in March 1984, was followed by a two-day strategy conference in August 1984. Both activities were hosted by ETMA and the National Museum of Kenya.

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Presidential endorsement was obtained in the foreword to the proceedings of the workshop and the strategy conference, both of which were high quality documents with attractive covers and illustrations of various endangered plant species.

The 1984 annual report on ETMA activities refers to these meetings as "training". It doesn't bring out the fact that the efforts were accorded a political importance sufficient to gain presidential endorsement for the recommendations. These efforts came as close as any of the ETMA work with NES to influence national policy concerning natural resources.

#### f. Other Activities

Coastal zone study: Clark University was nearing completion of a single document synthesizing the environmental assessments done for the coastal districts. This treatment of a definable physiographic unit will elevate the treatment in the DEA's to provincial level planning.

Pamphlet on population and resources: An educational pamphlet developed by NES from Kilifi district projections was being published by Clark for NES.

Training for plant identification. Two NES employees received special one-month training at the National Museum of Kenya in the identification of plants, including rare and endangered species, during September 1985.

#### g. Discussion and Analysis

Changes in NES during the project: NES declined in political strength but grew as a bureaucracy during the 1980-85 period. NES was moved for the Presidential Office to the Ministry of

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Environment and Natural Resources. Directorship changed three times during the project. NES continued to lack a legislative base or major governmental policy commitment in 1985. These changes comprise the institutional backdrop for assessing the impact of the ETMA project.

Perceptions of NES and ETMA: International and Kenyan governmental organizations as well as university-based scientists were queried as to their perception of NES. Answers included: "No clout at the cabinet level", "NES hasn't been effective in forging national-level environmental policy but it has had an impact at the district level through the DEA's", "NES directors are not recognized environmental scientists", "ETMA-financed activities are the only real work that NES is doing", "NES is worse off today as an institution than ever before".

NES staff were queried about their perceptions of ETMA. On the whole, the staff found the project to be a good one which had helped NES gain credibility and visibility at the district, if not the national, level.

#### 4. ETMA at Lake Basin Development Authority (LBDA)

In 1981, following an ETMA sponsored workshop in Nairobi on "Water Quality and Pollution Control" hosted by NES and the Ministry of Water Development, Dr. Daniel Okun of UNC visited the LBDA to explore possibilities for ETMA-supported work. This visit lead to a variety of training events, (See p. 78), consultancies, water monitoring exercises, and lake baseline studies between 1982 and 1985.

At the time of the evaluation Dr. Perez Olindo, Chief Ecologist at the LBDA, was finishing the preparations for a ministerial level conference for the Lake's riparian states aimed at creating a Lake Victoria Research Foundation. He viewed ETMA support at the LBDA as having made this possible.

a. The LBDA

The ETMA program only affected the activities of one of many offices and functions in this large organization. The LBDA is an autonomous organization established in 1979 and empowered to undertake planning, coordination and the implementation of development in the 47,700 square kilometer catchment of Lake Victoria.

b. ETMA Activities

ETMA activities took place in the Division of Environmental Protection and Public Health, which has four main functions:

- soil conservation and afforestation
- population control and sanitation
- community health and nutrition
- environmental management

ETMA activities involved in the last function which was charged to Dr. Perez Olindo, former director of Kenya's national parks and preserves. A series of training exercises were sponsored by ETMA which, combined with the provision by ETMA of analytical equipment and supplies, lead to the creation of a Monitoring and Analysis Laboratory in LBDA. The project also supported a number

of consultancies and the field expenses of water quality monitoring of industrial effluents as well as the Kisumu municipal water supply.

ETMA-supported training events included the following:

- 1982 seminar on water quality and pollution control in the Lake Victoria Basin.
- 1983 two-week conference/seminar on water quality monitoring and pollution control, emphasizing technical skills.
- 1985 conference on the current and future implications of development to the aquatic environment of Lake Victoria.
- 1985 one-week course on field techniques in limnology.

UNC participation in these events decreased over time; the last course was given by an English scientist, identified by the LBDA. The 1985 conference included papers from Kenyan, Ugandan, and Tanzanian scientists.

#### c. Analytical Laboratory and Water Quality Monitoring

This activity has now become part of LBDA's normal program, according to Dr. Olindo. The expertise and credibility gained by LBDA through the ETMA project has served to convince UNEP to provide \$600,000 for the construction of a laboratory facility. (Presently the lab is housed in a small office.) Also the Kenya Bureau of Standards has requested LBDA assistance in setting water quality standards for the nation.

At the start of ETMA in LBDA, however, there was no laboratory and no capability for monitoring or analysis. A key ingredient to the development of this activity was the presence

of a British volunteer (Andrejev Nowosielski), with training in chemistry, who worked closely with Dr. Okun and the ETMA project, and functioned as a surrogate resident technical coordinator.

ETMA provided a series of consultancies as well as laboratory equipment and supplies. By 1985, there were four technicians in the laboratory who had received on-the-job training from Mr. Nowosielski. The technicians had earned B.S. degrees from Kenyan universities. Mr. Nowosielski had extended his two-year volunteer term by one year in order to help train the new staff as well as participate in the lake baseline surveys.

Table V.4.

Laboratory Analytical Capability, LBDA

turbidity  
 pH  
 conductivity  
 alkalinity  
 dissolved oxygen  
 biological oxygen demand  
 nitrates, nitrites  
 P, K, Mn

LBDA's analytical capability, together with its on-going monitoring work has brought credibility to the organization as well as confidence. Inasmuch as LBDA has no enforcement authority, the creation of technical credibility is essential in its dealings with polluters. It was crucial, for instance, in the identification by LBDA of seriously high coliform counts in Kisumu's municipal water supply. This revelation resulted in more effective water treatment. However, less success was experienced with industrial polluters and sewage treatment plant operators

who were found by ETMA consultants to be monitoring inadequately (notwithstanding their having participated in the Kakamega course on pollution monitoring) or not adequately treating effluents.

d. Baseline Studies in Winan Gulf and Lake Victoria

The finding of chemical and organic pollutants in effluents and waste water emptying into Winan Gulf raised the question of the impact of these pollutants. However, there was a complete lack of baseline information on the ecology of the Gulf that would allow an estimation of likely impacts. Consequently baseline surveys were planned and carried out between June 1984 and September 1985.

Baseline data were obtained at 37 points in Winan Gulf and adjacent Lake Victoria on three separate surveys: June-August 1984; February-March 1985, and September 1985. LBDA staff, UNC scientists and Kenyan scientists (University of Nairobi and Kenyatta University) participated. The local university scientists became involved in the work following invitations by Mr. Gilbert to form a field team comprising an algologist, an organic chemist and a zoologist. By their own reckoning the experience of working together as a team was unique and in the end a valuable exposure to a multidisiplinary team effort, which enhanced their teaching skills as well as their professional ones.

Scientists from several other government organizations participated: Kenyan Marine Fisheries Research Institute; the Kenya Ministry of Water Development; the Tanzania Freshwater Fisheries Research Organization; and, from Uganda, the Freshwater Fisheries Research Organization and the Ministry of Water Development.

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It is worth noting that the studies had found no toxicity or pollution in the Gulf. Pesticides residues were not surveyed, however.

e. The Technical Conference

The March 1985, a Technical Conference on Current and Future Implications of Development to the Aquatic Environment of Lake Victoria was supported by ETMA. It resulted in three general recommendations and a plan of action: (1) assess the fish stocks of the Lake, (2) undertake water quality monitoring and pollution control and (3) carry out an environmental awareness program in each of the riparian states. The plan of action was called "The Kakamega Plan of Action for Management of Water Quality in Lake Victoria ". It proposed a broad research agenda to be undertaken cooperatively by Kenya, Uganda, Tanzania, Sudan and Egypt.

Subsequent to the conference, Dr. Olindo proposed and scheduled a ministerial consultative meeting in Kisumu to establish a Lake Victoria Research Foundation.

f. Discussion

The effectiveness of ETMA activities in LBDA in fostering institutional development in water quality monitoring and limnology is the result of at least four ingredients:

- effective leadership in LBDA (Dr. Olindo) that had a long-term view or strategy.
  - focus on a single resource and a specific environmental problem.
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- presence of an individual (the British volunteer) who served as a field manager for ETMA although not formally designated as such.
- technical and material assistance that was for the most part timely, accurately defined and competently carried out.

Weak points in the program were several. Administrative skills were not taught, e.g. activity programming, reporting, budgetting. Not anticipated as an output in the project, such skills nevertheless were perceived to be an important aspect of institutional development that was lacking. There was little coordination with other GOK ministries or international entities such as GEMS (UNEP's Global Environmental Monitoring System). Initially there was no contact made with scientists in Kenyan universities (they were engaged somewhat belatedly, and only for field work, not for training).

The flaws in the program were relatively minor, however, compared to its achievements. Of greatest note is the groundwork laid by the project for a regional body dealing with the Lake Victoria resource and the Nile River. Dr. Olindo's role in vigorously pursuing this vision must be given its due, but without the ETMA activity he would have been in no position to exercise leadership.

#### C. ETMA Program in Rwanda

Three activities were undertaken with ETMA sponsorship in Rwanda: (1) a conference on Energy and Environmental Management Needs in Rwanda, January 10-15, 1983, (2) a nation-wide sampling of soil erosion loss and (3) the Ruhengeri Resource Assessment and Management project. The evaluation team reviewed the latter two activities which were in progress. The results are an interim review to help on-going project management.

## 1. Soil Loss Monitoring

The soil erosion monitoring method developed in Kenya by Prof. Lewis was applied in Rwanda in connection with the nationwide agricultural census being conducted there with AID support. The conduct of the census was an unique opportunity. The census takers were enlisted to carry out the weekly observations at sample farms used by the census, and the Service d'Enquete Agricole vehicles retrieved the samples from the various parts of the country for analysis in Kigali. Thus, from the standpoint of the Rwandan counterpart contribution, and the engagement of an on-going AID-supported activity, the effort was singularly successful.

The work in Rwanda resulted from a meeting in Nairobi, Kenya between Dan Clay of the Bureau of Census' International Statistical Program Center and Brandon Robinson, formerly with REDSO/ESA. The desirability of measuring soil erosion in Rwanda as a component of an on-going agricultural survey was raised. Mr. Robinson put Clay in touch with Prof. Lewis, and an agreement was reached on the feasibility of a sampling effort using soil traps, to complement and calibrate computations of soil loss in Rwanda that would be made with the Universal Soil Loss Equation. Clay and Lewis were to co-author the chapter of the census dealing with the soil erosion question and its impacts.

Between September 1983 and August 1984, soil loss was measured in 100 different sites throughout Rwanda. Sites chosen corresponded to a pre-determined sample of farms where in-depth surveys were being conducted for the census.

Erosion data were taken for two rainy seasons and the information was sent to Clark University, by prior arrangement, for analysis by Prof. Lewis. The results are pending.

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Discussion: The evaluation done in Kenya by Kilewe indicate a tendency for the traps to underestimate erosion. As in Kenya, it would be useful to compare measurements from traps with measurements from experimental erosion plots in Rwanda in order gain an idea of the amount of correction that may be required. The Kenyan experience revealed the demonstration .pa value of the soil traps for local farmers; this aspect was not exploited in the Rwandan work nor were there plans to use the traps in this manner. The analytical work was still underway in the United States at the time this evaluation was being written.

## 2. Ruhengeri Resource Assessment and Management Project (RRAM)

A brief status report is possible for this project which has raised high expectations in Rwanda as well as in AID. However, the evaluation must be limited to questions of procedure and methodology rather than substantive achievements. At the time of the evaluation the effort was in its third month.

### a. Definition and Evolution of RRAM

The idea of a Cooperative Regional Demonstration Project was proposed by Mr. Gilbert at a meeting of the ETMA Technical Advisory Committee in Dakar in December 1982. It was well received. Such a project was conceived to focus on specific regions where assistance would be provided in order to improve resource management and environmental protection.

In early 1983, a visit to Rwanda by Messrs. Mahan, Buckley and Gilbert lead to a preliminary plan for a demonstration project in collaboration with the USAID office there. In March and April 1983, a team of seven people fielded by the University

of Tennessee worked on a \$2.0 million project design. The project had to be re-designed to a \$600,000 level of funding in May 1984. The project was renamed to its present title.

b. Brief Description of RRAM

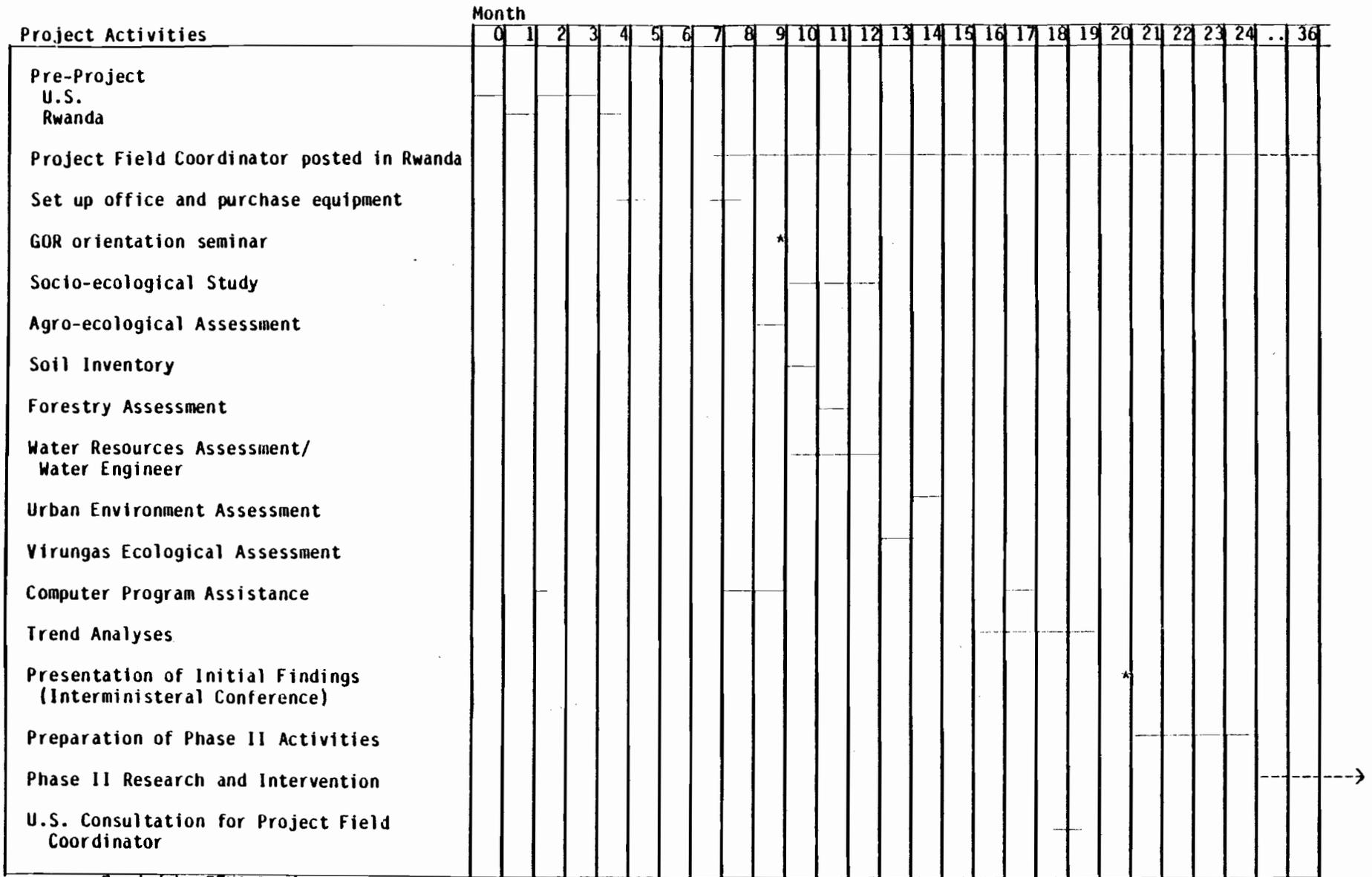
This project is designed and funded as a two-year effort under ETMA with a total budget of \$645,000, one third of which is SECID management and overhead. It proposes to introduce "an integrated natural resource planning and management methodology" at the local or prefectural level. (The Ruhengeri prefecture has 1,687 square kilometers).

In essence, RRAM is a natural resource and environmental problem diagnostic exercise rather than an integrated natural resources survey for regional development planning. The distinction is important since it explains the incongruencies between the stated purpose of doing integrated natural resources planning and the actual work being done.

The project inputs reveal this difference. The natural resources data to be used in planning will be taken from existing sources, and will be analyzed by various consultants as shown in Figure V.3. This tentative plan neglected cartographic input, which was subsequently added by shifting project money for an administrative assistant position to the employ of a cartographer/photo-interpreter, and by tapping short-term consulting assistance through a National Park Service contract with Winrock International.

The original implementation plan does not explicitly provide for the steps needed to integrate and synthesize the various data whether by cartographic or other analytical means. The

Tentative RRAM Implementation Schedule



\_\_\_\_\_ Funded by ETMA Project  
 ----- Phase II

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implementation plan had not yet been replaced by a more detailed plan that reflects modifications already made as well as more thorough programming.

Designed as a two-year effort in which the intervention aspect would not take place until a second phase, the project has been effectively shortened to 15 months due to delays in fielding the project leader and in obtaining government of Rwanda approval for a Protocol d'Entente (signed in June 1985).

As of September 1985, the following had been accomplished:

- field manager established in residence in Ruhengeri
- office in Ruhengeri opened up and equipped
- consultancies as follows:
  - agroforestry reconnaissance
  - water resources reconnaissance
  - agroecological survey(in progress)
  - survey of environmental perceptions among rural folk
  - survey of women's roles(in progress)
  - plan and classification for a GIS(geographic information system)
  - computer program for a GIS
- staff hired -- one person, a fulltime cartographer, in place of an administrative assistant and accountant (functions being carried out by the project manager, Dr. Weber.)
- two vehicles, word processor and IBM-PC computer with printer purchased and received.

c. Analysis

This project is getting off to a difficult start due to external events and problems in planning. External to the project and beyond its control, is the fact that a governmental counterpart or "user" of the project is not in place. A Prefectural Commission on Forests and Environment has not yet been appointed.

Resource assessment work was premised on the availability, through a companion USAID project in farming systems, of 1:20,000 aerial photographs. The farming systems project manager, however, decided not to obtain the photos and the RRAM project has had to arrange for their purchase from Belgium. Furthermore, delay in initiation of AID farming systems project in the eastern portion of the Ruhengeri Prefecture also complicates matters. That project will not produce results in time for the design of RRAM, Phase II, as had been assumed. As a consequence, agronomic innovations that could resolve resource constraints and induce farmers to adopt resource-conserving technologies will not be available.

The project work has not been well planned from a methodological standpoint. Without an overall plan for the integration of data, the various consulting experts have no framework or point of reference outside of their individual scopes of work and personal views on how things fit together. This can and should be remedied particularly since a primary objective of the project is the demonstration of integrated analysis of natural resources and environmental data.

The subsequent inclusion of a geographic information system (GIS) approach has been done independently of the work plans originally projected for various consultants. There is no evident strategy for including their findings into the GIS.

Finally, preparations for Phase II need to be well thought out and resolved soon. At this point, Phase II has been approved for \$500,000 in the FY1986 ABS subject to an evaluation of Phase I. Attention needs to be given to the Phase II relationship to ETMA, the available data under Phase I to help in the evaluation, and the need for a planning or transitional period in the design to avoid a break between Phase I and Phase II.

d. Recommendations

The following adjustments in RRAM are needed in order to accommodate changes that have been imposed by external events as well as to remedy design and planning problems.

- a revised work plan showing existing and anticipated modifications or departures from the original design should be prepared and communicated to the Government of Rwanda (GOR) as well as AID. The work plan should include a restatement of the outputs and a modified phrasing of the purposes so as to adjust these to what can be accomplished.
- a plan should be prepared as soon as possible for integrating and synthesizing the various data that have been and will be forthcoming from consultants as well as aerial photo-interpretation and secondary data such as the on-going soils survey.
- a plan and design for developing the information is needed for Phase II actions and the remaining consultants budget reviewed in terms of the likely requirements for design assistance.
- a government counterpart agency should be made operational as soon as possible and an agreement for collaboration should be made taking into account possible expenditures in support of counterpart participation (e.g., per diem and fuel for field trips).
- a mid-project technical review is recommended to take place in June 1986, or earlier, to measure progress. Questions of data analysis, synthesis, and definition of remaining actions could be discussed.

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- the SECID project manager should supply Dr. Weber with products of other ETMA work that are relevant or could be helpful to the conduct of RRAM. (To date there has been no transfer to RRAM of other ETMA experience.)

## VI. IMPACT OF ETMA PROJECT

### A. Introduction

For the most part, ETMA's activities took place within national boundaries although the management was regionally oriented. Nevertheless, the impact of those activities synthesize to give broader impressions as well. These are derived from the previous two chapters.

### B. Impact of Training in West Africa

1. The phenomenon of "sensitization" had an effect throughout the region. The training sessions created an awareness of environmental concerns generally and educated their audiences to the links between the natural resource base and agricultural production. It affected the policy makers, administrators and technicians in the government both at the headquarters and field level. Generally the grass-roots farmer was not directly affected nor were entrepreneurs in the private sector. It is difficult to measure at this point to what extent such attention-getting devices as National Tree Day or Environmental Week influenced the users of the environment.

2. Action programs were and are being stimulated on subject-matter introduced by ETMA or in areas that are similar. These reflect themselves in: follow-on country or regional seminars; setting aside a week or a day to draw attention to aspects of environmental concerns; requests from various points in and out of government to conduct studies (e.g. desertification) or devise management strategies; presidential-level attention to the link between development and environment; and the formulation of environmental policy.

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3. Recommendations for action were picked up for implementation by the donor community. FAO and the Japanese are primary examples.

4. Stimuli were provided that integrated the exchange of ideas and recommendations for action laterally across ministries rather than separately within a ministry.

5. It created linkages between different fields at the policy and technical levels as well as organizationally, e.g., research and extension services.

6. It strengthened government institutional capacity for environmental impact monitoring.

7. It fostered internal host country initiatives for solutions to natural resource issues rather than relying on external help.

8. It developed the managerial capacity that didn't exist before in the host country to organize seminars, courses and conferences.

9. It fostered an international regional perspective and regional initiatives to organize conferences on ETMA-type activities.

#### C. Impact of Training in East Africa

1. There was a major payoff in training although not always perceived as "training." In the Sudan, it resulted from environmental monitoring activities, field studies, trend analyses and regional seminars. In Kenya, it created the largest environmentally oriented cadre of personnel in the program. This

was due to the four sessions dealing with water quality and pollution control in the Lake Victoria basin; and 13 DEA workshops and other conferences related to NES.

2. It developed the managerial capacity in the host countries to organize courses, workshops, and seminars.

3. It created the mechanism and the management to focus on regional/district ecological issues within a country (Sudan and Kenya).

4. It fostered internal host country initiatives for solutions to natural resource issues rather than relying on external help.

5. It provided a forum for the interchange of ideas and recommendations that brought together local and national personnel from the regions/districts and ministries.

#### D. Program Impacts in Sudan

1. It strengthened the capability of IES through: the development of an extensive environmental data base; use of applied research in environmental analysis; and an improved training capacity.

2. USAID Sudan contracts with IES for environmental reviews, counterpart support for assistance in drought-stricken areas and other services.

3. University professionals have been brought into the reality of rural development through the regional seminars and most recently, the ETMA-supported Village Intervention Program with USAID involvement.

### E. Program Impacts in Kenya

1. The professionalization and the improved credibility of NES as evidenced by:

- creating a permanent staff to carry out the district environmental assessments (DEAs); organizing and managing the workshops and producing an acceptable environmental information base.
- producing a technically sound population and resource trends program.
- laying the groundwork for a sound soil erosion monitoring program for Kenya.
- providing the basis for influencing national policy on endangered resources for development by hosting and receiving presidential recognition for a workshop and strategy conference on endangered resources for development.

2. The creation within LBDA (Division of Environmental Protection and Public Health) of a monitoring and analysis laboratory as part of the regular program due to:

- four training programs on water quality and pollution.
- support to its leadership to achieve environmental credibility.
- technical and material assistance to create the analytical laboratory.

### 3. Program Impacts on Other Kenyan Institutions

A dialogue with over 12 units of the Kenyan government (e.g., Rural Planning Unit, Ministry of Planning and National Development; Tana and Athi River Development Authority; Presidential Commission on Soil Conservation and Afforestation; Kenya Rangeland Ecological Monitoring Unit, Ministry of Finance and Planning, etc.) indicated some awareness of the ETMA project

primarily because of the activities involving the district environmental assessments. It was mainly through this perception and the role that NES played as Chairman of the Interministerial Committee on Environment than ETMA came across.

In most instances, the DEA's are regarded as worthwhile but as yet, have very little influence on the District Development Plans. Each ministry does its own thing and generally coordination is an objective yet to be achieved.

The perception of NES products such as the DEA's get caught up in the perception of NES among other government agencies. Without taking into account that NES is a top staff agency in the Ministry of Environment and Natural Resources and has no coercive machinery, there is an impatience with the fact that NES doesn't do more, that it ought to get "tough". Nevertheless, most government officials who knew of ETMA believed that it was helpful to NES in creating an awareness and sensitivity to environmental concerns.

F. Program Impact on AID in Africa

Overall, there was modest involvement of the USAIDs with ETMA although there were some notable exceptions. For the most part, the program impact was minimal; however, it is premature to come to any firm conclusions. Much of the ETMA output remains to be absorbed.

In West Africa, the USAID attitude was positive but unlike East Africa, the ETMA activities were minimal thus the expectations were much lower. In Sierra Leone, the USAID Adapted Crops Research and Extension project benefitted from the ETMA seminars. The REDSO/CWA office endorsed the idea of concrete

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action programs as a follow-up to ETMA's inputs. In the Congo, resources of the African Manpower Development Program were used for a seminar.

In East Africa, there are some positive experiences. In Sudan, after a wait-and-see attitude, the USAID finally used the institutional competence in IES that the ETMA investment helped create. It contracted with IES for environmental reviews and support to AID- funded PVO's.

In Kenya, the mission exercised a review responsibility for ETMA as part of keeping abreast of all AID centrally funded and Bureau for Africa regionally funded projects. However, the USAID was not influenced by ETMA's activities and generally with some exceptions was not knowledgeable about them.

The REDSO/ESA, especially the Environmental Officer, provided staff support to facilitate ETMA activities as part of their package of responsibilities, e.g., LBDA, Sudan and the Ruhengeri Resource Analysis and Management project in Rwanda. Technical staff judgment indicated that at some point, missions would find usefulness in the natural resource data generated by the ETMA project and appreciate its effort. However, there was a difference of opinion on the workability of regional projects. One view saw them as important stimulants to mission programs; another believed that they would have problems unless they were compatible from the beginning.

The most sympathetic to the ETMA experiment was the AID Representative in Rwanda. He provided a home for a \$645,000 ETMA Ruhengeri Resource Analysis and Management (RRAM) project with the prospect of a USAID \$500,000 FY1986 follow on. The ETMA effort is designed to put in place an integrated natural resource planning and management methodology at the local level and with this accomplished, interventions would follow.

## VII. CONCLUSIONS AND LESSONS LEARNED

### A. Overview

The experience during the five years of the Environmental Training and Management Project (1980-1985) was for the most part positive and its impact beneficial. In retrospect, it was the right kind of project at the right time. It was preceded by a flurry of legislative reinforcement that expanded AID's mandate in environment and natural resources. During the life of the project, a favorable atmosphere continued.

ETMA perfected various instruments (seminars, workshops, conferences) to involve the grass roots in the solution of environmental problems and it taught the counterparts how to use them. It proved the importance of baseline studies in environment and natural resources and in the process, it found that cross-sectoral and integrated analysis was needed to understand environmental degradation and to plan interventions. Finally, it made very clear that environmental monitoring, trend analyses, field studies, training, and other activities in natural resources require a long-term commitment to have a lasting impact.

The specific conclusions that follow articulate these generalizations.

### B. Specific Conclusions

#### 1. Institution building

Generally speaking the governmental institutions with whom the ETMA project worked lacked political and regulatory strength for want of clear policy or legislative mandate. ETMA may have succeeded in increasing awareness at politically high levels, but

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its most immediate contribution was at the technical level within governmental agencies (e.g., NES and LBDA in Kenya). Technical strengthening appears to be a more feasible goal for institution building than does political or policy-level strengthening.

A key contribution to institution strengthening was the underwriting of field and laboratory work. Through this work, governmental as well as university-based researchers who participated were able to gain competence where previously they only had academic training. In general, lack of funds for field work limits the acquisition of practical skills by otherwise adequately trained scientists.

Institution - building assistance should take into account administrative skills that make an institution viable such as programming, reporting, budgeting, etc. This was not a planned output of the ETMA work; it was a significant omission.

## 2. Training

Greater emphasis should have been placed on long term, degree or non-degree training as part of the institution-building process. There is professional incentive to participate in degree programs. Short term training programs are generally not attractive to government employees because salaries and promotions are based upon formal education alone in current civil service systems.

An important part of the seminar, conference or workshop mechanism proved to be the recommendations. An action orientation was invariably sought and an additional effort to translate recommendations into practical proposals became a clear need, not anticipated in the original workshop process. It is especially important where actions are urgent and there is a need to promote

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governmental or an outside funding source interested in the action. In general, donors were eager to seize upon workshop recommendations inasmuch as the process followed, yielded unique "indigenous" solutions with some assurance of political and social feasibility (as opposed to recommendations formulated by outside consultants or agencies).

In Francophone Africa, fluency in the French language is essential for effective communication in training events. In bilingual Sudan, Arabic did not prove to be essential, however.

In Francophone Africa, the informal round-table format for workshops and seminars is an awkward one for most individuals because of the strong verticality of the academic and bureaucratic systems. The use of this approach requires sensitivity to this constraint to easy dialogue.

Greater recognition must be given to the extension system in a country for transmitting technical information to the land user, especially when stimulated by action recommendations flowing from local workshops. Training in extension methodology is needed.

Regional training events (i.e., multi-national) are appropriate where (1) environmental resources are shared, and (2) environmental or natural resource management problems or concerns are shared.

### 3. Project Management

The discipline of memoranda of understanding, annual working agreements and collaborative financial planning are indispensable to satisfactory progress in institutionally based programs.

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Pre-workshop planning seminars are essential to successful workshops.

Local management is critical to the success of institution-building assistance, especially if the prime contractor is not located in the country.

Media coverage of seminars, workshops, technical assistance activities and other events is tremendously valuable in extending the impact of these activities, and in generally educating and sensitizing the greater populace.

#### 4. AID Actions

Regional projects by the Africa Bureau are justified for a number of reasons: promotion of regional cooperation; quick response to new agency initiatives; special legislative concern; etc. ETMA satisfied these. The USAIDS should be the primary impact system for environment and natural resources as a post-ETMA activity in order to give continuity and long-term support to the successful investment already made.

#### 5. Other

Because of regional, and perhaps language, differences, "Environment" is still a useful and meaningful term in Francophone West Africa, while in East Africa it has become a somewhat trite generality, needing more specific explanation.

African expertise was found to exist in many of the environmental sciences required for the training events or field studies. In certain instances, Africans were more qualified than outsiders. Nevertheless, Africans scientists and technicians welcomed interactions with peers from outside the continent.

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Political and policy commitment by a government to combat environmental degradation generally grows from a technically competent human resource base that training and technical assistance has helped to establish. The sensitization of policy makers to these issues is an essential part of the seminar/workshop process.

Baseline studies in environment and natural resources are a must for understanding the natural resource base but are lacking in most African countries.

From an analytical and technical point of view, cross-sectoral or integrated analysis is needed to better understand the degradation of and the impact of interventions on the natural resource base. A sub-national focus is likely to lead to more manageable action than a national one.

### VIII. FUTURE INITIATIVES

#### A. Considerations

Five years of ETMA have been a worthwhile investment. It is time to benefit from this experience and suggest new ways to deal with the priority natural resources problems in Africa. The direction that ETMA took will have to be modified to respond to the priority issues.

The donor community effort in natural resources management is being narrowed because the crisis in agriculture has been linked with it. For all practical purposes, support for the maintenance of the natural resource base translates into support for food production. This implies a re-focussing of the emphasis and perhaps the institutional outreach of future work in Africa in natural resources management. Obviously, Ministries of Agriculture will be the key partners. It would be unlikely that institutions such as NES and the LBDA in Kenya would become the principal counterparts in natural resources management actions in the future. Equally unlikely would be a mission-level commitment to monitor water pollution or develop such a capability.

The Africa Bureau reflects this emphasis on linking natural resources management with agriculture. A re-structuring of the Office of Technical Resources will move the forestry, agroforestry, and energy support functions from the Division of Special Development Problems into the Division of Agriculture and Rural Development. This move indicates the growing conviction that, in practical terms, natural resources actions must be linked to agriculture and must be undertaken so as to support food production.

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## B. Recommendations

The ETMA experience yielded some valuable lessons mentioned earlier. These are re-formulated here as recommendations to the Africa Bureau. Specifically, a number of approaches are enumerated that proved to be effective and which could be useful in future natural resources work in Africa.

1. Except for regional (multi-national) problems requiring regional actions, e.g., river basin development, desertification, natural resources work in Africa should take place at the mission level.

In particular the need is great for actions at the local (village) level to resolve urgent problems requiring popular participation in degrading agricultural areas.

2. AID missions in Africa should support conferences or seminars on natural resources management themes for which they intend to develop actions.

The underwriting of conferences or seminars focussing on environmental or natural resources issues can be a very effective means of developing an awareness and favorable reception for needed actions. This is especially true where a consensus has developed on critical problems needing attention. The media coverage, the attendance, and the publications and communications flowing from such events can generate receptivity for follow-up actions, and for changes required.

It is probably unrealistic to expect the formulation of a clear policy statement and mandate for an institutional program for the broad subject of natural resources management as a result of a conference or seminar, no matter how high the level.

Instead, the goals set for such events should focus on the possibilities of laying the basis for specific actions, no matter how modest or incremental, and for fostering these actions through expeditious financing or by finding needed support.

3. AID missions should consider using the field study/local workshop sequence as a principal tool in the design of rural development projects that require natural resources management.

The ETMA-sponsored workshops that were used to communicate the results of field studies (environmental monitoring studies in Sudan and district environmental assessments in Kenya) proved to be quite effective as planning exercises. The wide representation and active participation in problem review and the articulation of solutions that characterized these events achieved a goal that is commonly enunciated: integrated analysis. However, a larger significance can be attached to the planning that went on in the workshops. Through the active participation of local residents and governmental officials, the workshops yielded recommendations that integrated not only the different natural resources but also the social and local political viability of the recommended solution to various problems. Thereby, the feasibility of various actions was already pre-tested.

The significance of this aspect cannot be over-emphasized, given the major importance of social and political factors in local management of natural resources, especially common property resources. Simply put, local people are the true stewards of the environment, and they must collectively agree on new approaches to managing common resources such as grazing lands, water, and natural forests. Further, in the conservative tradition that typifies many rural villagers, individual innovation is not

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admired. Consequently, even in the case of new techniques of land management on individually owned plots, social consensus may be needed to avoid the opprobrium of doing something "new".

4. AID missions should provide financial and technical support for research and field studies of important natural resources topics by local institutions as a simple and effective way of bolstering institutional capability.

This recommendation applies to African countries with well trained technicians who have not yet been able to gain field experience. Lack or absence of operational budgets keeps otherwise well trained technicians in offices and deprives them of the chance to gain expertise. This is a source of institutional weakness which AID can easily help resolve by providing field operational funding along with appropriate technical assistance (for planning, evaluation and analysis, but not necessarily for execution). Local currency grants may be sufficient, but in cases the provision of instruments and perhaps vehicles and parts could require dollar accounts.

5. The Africa Bureau should consider the creation of a new regional program to assist missions with the technical support and management required to implement these recommendations.

It could be called the "Natural Resources Support Program." It would be made responsive to mission and host country needs in agriculture-related interdisciplinary concerns (desertification, forestry, agroforestry, water and soils management). It would also include the protection of biological diversity.

APPENDIX I

INDIVIDUALS INTERVIEWED

Interviews in Washington D.C. (including telephone interviews)

Earle BUCKLEY  
Project Manager  
Environmental Training and Management in Africa  
South-east Consortium for International Development

Tom CATTERSON  
Chief (Acting)  
Special Development Problems Division  
Office of Technical Resources  
Bureau for Africa  
AID

Dan CLAY  
International Statistical Support Program  
Bureau of the Census

Harlan DAVIS  
Deputy Director  
Office of Agriculture  
Bureau for Science and Technology  
AID

David ECKHARD  
Health Division  
Office of Technical Resources  
Bureau for Africa  
AID

Julian ENGEL  
(former ETMA West Africa Regional Representative)

A.J. DYE  
Office of International Cooperation  
for Development  
U.S. Department of Agriculture

Richard FORD  
Director, Center for Technology, Environment and Development  
(former ETMA East Africa Regional Representative)  
Clark University

Vernon T. GILBERT  
(former ETMA East Africa Regional Representative)

Tejpal S. GILL  
Chief, Renewable Natural Resource Division  
Office of Agriculture  
Bureau for Science and Technology  
AID

Katherine GODDARD  
Energy Development International  
Washington, D.C.

Jeffrey GRITZNER  
BOSTID  
National Academy of Sciences

Molly KUX  
Office of Forestry, Environment and Natural Resources  
Bureau for Science and Technology  
AID

Lawrence LEWIS  
Professor of Geomorphology  
Department of Geography  
Clark University, Worcester, Mass.

Alexander R. LOVE  
Deputy Assistant Administrator for Africa  
Bureau for Africa  
AID

Val MAHAN  
Project Officer  
Project Division II  
Office of Regional Affairs  
Bureau for Africa  
AID

Steve MINTZ  
Director, Office of East Africa Affairs  
Bureau for Africa  
(previously Associate Director for Project Operations  
USAID, Khartoum)

Dr. O'KEZIE  
Director of International Programs  
Alabama A. & M. University  
Huntsville, Alabama

Daniel OKUN  
Professor of Environmental Engineering  
University of North Carolina  
Chapel Hill, N.C.

Ken PRUSSNER  
Agriculture and Rural Development Division  
Office of Technical Resources  
Bureau for Africa  
AID

Donald REILLY  
Deputy Director  
Office of Technical Resources  
Bureau for Africa  
AID

Keith Sherper  
Director, Office of Technical Resources  
Bureau for Africa  
AID

Walter J. SHERWIN  
Deputy Director  
Office of Regional Affairs  
Bureau for Africa  
AID

Marcus WINTER  
Chief, Agriculture and Rural Development Division  
Bureau for Africa  
AID

Jerry WOOD  
Chief, Project Division II  
Office of Regional Affairs  
Bureau for Africa  
AID

Interviews in Sierra Leone

Mr. Osmond L. GORDON  
Director  
Land and Water Development Division  
Ministry of Agriculture and Forestry  
Freetown

Mr. Jim HABRON  
Acting AID Director  
Freetown

Mr. Archie HOGAN  
Agricultural Development Officer  
USAID  
Freetown

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Miss Isatu A. KHALU  
Agronomist  
Land and Water Development Division  
Ministry of Agriculture and Forestry  
Freetown

Mr. A.S. LAMIN  
Deputy Director  
Land and Water Development Division  
Ministry of Agriculture and Forestry  
Freetown

Mr. E.J. MAMMY  
Extension Coordinator  
ACRE Project  
Njala, Sierra Leone

Interviews in the Ivory Coast

Mr. Larry BOND  
Director  
USAID/REDSO/WCA  
Abidjan

Mr. DIATABE  
CTFI  
Ministry of Agriculture, Water and Forests  
Abidjan

Dr. Zabi Soko GUILLAUME  
Director  
Scientific and Technical Information  
Ministry of National Education and Scientific Research  
Abidjan

Dr. Jean-Baptiste KHOTIAS AMON  
Center of Oceanographic Research  
Ministry of Marine Affairs  
Abidjan

Dr. G. Edward KARCH  
Energy Initiations for Africa  
Abidjan

Mr. A.R.M. M'BENGUE  
Ex-Director  
Ministry of Environment  
Abidjan

Ms. Diana MCLEAN  
USAID/REDSO/WCA  
Abidjan

Mr. Ducan MILLER  
USAID/REDSO/WCA  
Abidjan

Mr. Jean-Claude ZAGOL  
Office of Technical Studies of  
Agricultural Projects (BETPA)  
Ministry of Agriculture, Water and Forests  
Abidjan

Interviews in the Congo

Ms. Chris COLLINS  
USAID Affairs Officer  
American Embassy

Mr. Maurice EBARA  
Chief, Sanitary Health Service  
Ministry of Health  
Brazzaville

Mr. Adamou ETOU  
Director of Property of the City of Brazzaville  
Brazzaville

Mr. Gaston KITEMO  
Chief, Office of International Programs  
Direction of the Environment  
Ministry of Tourism, Leisure and the Environment  
Brazzaville

Mr. Jean deDieu KONONGO-BABACKAS  
Chief, General Health Service  
Ministry of Health  
Brazzaville

Ms. Jrma Euphrasie KOLELAS  
Direction of the Environment  
Ministry of Tourism, Leisure and the Environment  
Brazzaville

Mr. Ibrahim MAMADOU  
Deputy Mayor of the City of Brazzaville  
Brazzaville

Ms. Adizza M'BENGUE  
Assistant Director  
USAID Affairs Officer  
American Embassy  
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Mr. MBOUTA - THOUASSA R.  
Chief, Service of Training  
Direction of the Environment  
Ministry of Tourism, Leisure and the Environment  
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Mr. Massengo MILANDOU  
Chief, Silvicultural Development Service  
Ministry of Water and Forests  
Brazzaville

Mr. Ernest MOUANDA  
Director of the Environment  
Ministry of Tourism, Leisure and the Environment  
Brazzaville

Mr. Issanga NGAMISSIMI  
Director fo the Environment  
Ministry of Tourism, Leisure and the Environment  
Brazzaville

Mr. Pascal NGOUALA  
Director fo the Cabinet  
Ministry of Tourism, Leisure and the Environment  
Brazzaville

Mr. William SIEFKEN  
Charge d'Affairs  
American Embassy  
Brazzaville

Mr. Howard WEISS  
Economic Officer  
American Embassy  
Brazzaville

Interviews in Sudan

Dr. Yagoub ABDALLA MOHAMED  
Training Coordinator  
Institute of Environmental Studies  
University of Khartoum  
Khartoum

Dr Hassan ABDEL ATI  
Lower Atbara River Team Leader  
Geographer  
University of Khartoum

Prof. Mamoun DAOUD EL KHALIFA  
Director  
Institute of Environmental Studies  
University of Khartoum  
Khartoum

Mr. Ali DARAG ALI  
Director General  
Range and Pasture Administration  
Ministry of Agriculture and Natural Resources  
Khartoum

Beverly EIGHMY  
ETMA Sudan Project Field Manager  
Khartoum

Dr. Galal EL DIN EL TAYEB  
ETMA Coordinator (former)  
Gedarif Team Leader  
Geographer  
University of Khartoum  
Khartoum

Dr. Mohamed El-HADI ABUSIN  
ETMA Coordinator (Present)  
Geographer  
University of Khartoum

Mrs. Elizabeth MARTELLA  
Assistant Agricultural Development Officer  
USAID  
Khartoum

Mr. Ali OSMAN EL MEKKI  
Range and Pasture Administration  
Ministry of Agriculture and Natural Resources  
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Dr. Mohamed OSMAN EL SAMMANI  
Kordofan Team Leader  
Geographer  
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Mr. Carlos PASCUAL  
Project Development Officer  
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Ms. Donna STAUFFER  
General Development Officer  
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Dr. Mustafa M. SULILMAN  
Range and Pasture Administration  
Ministry of Agriculture and Natural Resources  
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Interviews in Kenya

David ANDERE  
Kenya Rangeland Ecological Monitoring Unit  
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Edward BACKUS  
GIS consultant to the RRAM project

Caroline BARNES  
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J.F.G. BIRIR  
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Government of Kenya

Rita BOWRY  
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Ministry of Finance and Planning  
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National Environment Secretariat  
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Deputy Director  
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Chris FOXHALL  
Lecturer in Chemistry  
Kenyatta University College  
Nairobi

John GAUDET  
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USAID, Nairobi

Charles GLADSON  
Mission Director  
USAID, Kenya

Chris KAMAU  
Division of Planning  
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Maina KARABA  
Chief  
Natural Resources Management (Terrestrial) Division  
National Environment Secretariat  
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John KIDENDA  
Director, Rural Planning Department  
Ministry of Planning and National Development

Matua KIHU  
Natural Resources Management (Terrestrial) Division  
National Environment Secretariat  
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John KIMANI  
Athi River Development Authority  
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D. KINJANJUI  
Chief, Natural Resources Management (Terrestrial) Division  
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John KOEHRING  
Director  
REDSO/ESA  
USAID, Nairobi

J.T. LIMIRI  
Economist  
Tana River Development Authority  
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Max LITTERICK  
Lecturer  
U. of Nairobi  
Nairobi

David LUNDBERG  
USAID, Nairobi

B.O. LUNDGREN  
Director  
ICRAF  
Nairobi

G.K. MBURATHI  
Chief Executive  
Presidential Commission on Soil Conservation and Afforestation  
Nairobi

Moses MOKOLWE  
Senior Policy Advisor  
Ministry of Agriculture and Livestock Development  
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Wyecliffe MUTERO  
Human Settlements Division  
National Environment Secretariat

Steve NJUGUNA  
Environmental Scientist  
Department of Botany  
U. of Nairobi  
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Zephania O. NYAMONGO  
Public Health Officer  
LBDA  
Kisumu  
Were MALABA  
Public Health Specialist  
Lake Basin Development Authority  
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Samuel OBURA  
Director  
Lake Basin Development Authority  
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Perez OLINDO  
Senior Ecologist  
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Energy Initiatives for Africa Project  
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Peter WEISEL  
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Joseph WHEELER  
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Interviews in Rwanda

Yvan DEJAEGHER  
Service des Enquetes Agricoles  
Ministere de l'Agriculture de l'Elevage et des Forets  
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David DUPRAS  
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Michael FUCHS-KARSCH  
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APPENDIX II

ETMA TRAINING ACTIVITIES

Definition and Code

Short-Term Seminars (STS)

Events of one week or less in length usually conducted entirely in the classroom on a specific technical topic and generally for a wide range of audiences.

Medium-Term Courses (MTC)

Events of two to six-weeks in length usually conducted in the classroom but often with a field trip included on a specific technical topic for a wide range of audiences.

Workshops (W)

A term used Kenya with the NES program to describe events conducted at the end of district environmental assessments (DEA) exercises. Generates recommendations and follow-up actions.

National Seminars (NS)

Term used in the latter two years of the project to describe events undefined in length but which were normally conducted entirely in the classroom.

Regional Seminars (RS)

Term used in the Sudan with the IES program with the same format and purpose as the term "workshop" defined above but on a regional basis.

Courses (C)

Term used in the latter two years of the project, undefined in length, but on a very specific technical topic usually for a small narrow audience.

Long-Term Training

Training at least six months in length at a university site.

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## APPENDIX II -- (CONTINUED)

## ETMA TRAINING ACTIVITIES

| <u>Location</u> | <u>Type of Training</u> | <u>Date</u> | <u>Topic</u>  |
|-----------------|-------------------------|-------------|---|
| Tanzania        | MTC                     | 1981        | Heavy metals and pesticides in the environment  |
| Kenya           | W                       | 1981        | Kajiado District resource profile workshop  |
| Kenya           | MTC                     | 1981        | Water supply and water pollution control in Kenya   |
| Tanzania        | MTC                     | 1981        | Environmental considerations in district planning   |
| Sudan           | MTC                     | 1981        | Environmental impact of development   |
| Somalia         | STS                     | 1982        | Energy and environmental management needs in Somalia  |
| Kenya           | STS                     | 1982        | Environmental enhancement and resource management in the Eastern Province -- Priorities and accomplishments in dealing with desertification |
| Tanzania        | MTC                     | 1982        | Techniques of promoting, installing, operating, and maintaining urban ventilated improved pit latrines: environmental considerations        |
| Zimbabwe        | STS                     | 1982        | Resource degradation and development planning in semi-arid environments   |
| Kenya           | MTC                     | 1982        | Water quality and water pollution control in the Lake Victoria Basin area   |
| Ivory Coast     | MTC                     | 1982        | Techniques of environmental impact assessment   |
| Sudan           | STS                     | 1982        | Workshop on combating desertification in Africa   |

## APPENDIX II -- (CONTINUED)

| Location     | Type of Training | Date | Topic  |
|--------------|------------------|------|--|
| Sierra Leone | MTC              | 1982 | Land use planning for rural development with special attention to environmental management       |
| Sudan        | MTC              | 1982 | Water for human needs  |
| Rwanda       | STS              | 1983 | Energy and environmental management needs in Rwanda  |
| Zimbabwe     | MTC              | 1983 | A short course on tropical limnology   |
| Sudan        | STC              | 1983 | Monitoring and controlling desertification   |
| Kenya        | W                | 1983 | Kisii District resource assessment workshop  |
| Sierra Leone | MTS              | 1983 | Role of extension in environmental management and agriculture                                    |
| Niger        | MTS              | 1983 | Training of agroforestry agents in the Sahel   |
| Ivory Coast  | MTS              | 1983 | Ecological consequences of river basin development   |
| Togo         | MTS              | 1983 | Issues of resource management  |
| Congo        | MTS              | 1983 | Brazzaville: The city and the environment  |
| Sudan        | STS              | 1983 | Planning for environmental education   |
| Mali         | MTC              | 1983 | Management of the environment and rural planning: the utilization of earth resources information |
| Cameroun     | STS              | 1983 | Environmental management: Cameroun realities   |

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## APPENDIX II -- (CONTINUED)

| Location | Type of Training | Date | Topic  |
|----------|------------------|------|--|
| Kenya    | STS              | 1983 | Water quality monitoring and pollution control   |
| Senegal  | STS              | 1983 | Environmental management of the Senegal River Basin: environmental monitoring                    |
| Kenya    | W                | 1984 | Kitui District environmental assessment workshop   |
| Sudan    | NS               | 1984 | Indicators of environmental change and desertification   |
| Kenya    | NS               | 1984 | Plant communities in Kenya   |
| Kenya    | W                | 1984 | Kilifi District environmental assessment workshop  |
| Sudan    | RS               | 1984 | Gedaref District regional seminar on environmental education                                     |
| Kenya    | NS               | 1984 | Natural resource strategy conference   |
| Sudan    | C                | 1984 | Training course on environmental education   |
| Kenya    | W                | 1984 | Nakuru District environmental assessment workshop  |
| Sudan    | RS               | 1985 | Tegalic District Southern Kordofan/Sudan Abu-Gubeiha regional seminar on environmental education |
| Sudan    | RS               | 1985 | Umm Keddada District, Eastern Darfur regional seminar on environmental education                 |
| Sudan    | RS               | 1985 | Lower Atbara River regional seminar on environmental degradation and possible alternatives       |

## APPENDIX II -- (CONTINUED)

| Location | Type of Training | Date  | Topic  |
|----------|------------------|-------|--|
| Sudan    | C                | 1985  | Development of instructional materials for Bakht Er-Ruda environmental education                 |
| Kenya    | RS               | 1985  | The current and future implications of development to the aquatic environmental of Lake Victoria |
| Kenya    | W                | 1985  | Kwale District environmental assessment workshop   |
| Kenya    | W                | 1985  | Muranga District environmental assessment workshop   |
| Kenya    | C                | 1985  | Limnological training course   |
| Kenya    | W                | 1985  | Lamu District environmental assessment workshop  |
| Kenya    | W                | 19856 | Mombasa District environmental assessment workshop   |

## APPENDIX III

SCOPE OF WORK FOR THE EVALUATION OF THE ENVIRONMENT TRAINING  
AND MANAGEMENT PROJECT (ETMA)I. BACKGROUND

A.I.D. Regional Project No. 698-0427, Environmental Training and Management (ETMA) is designed to carry out training in environmental science and resource management in Africa and to strengthen African institutional capabilities to (1) improve their environmental information base, (2) identify priority environmental problems and (3) monitor environmental trends. To achieve these objectives, the project provides short-term technical assistance for training seminars, workshops and conferences in Africa and for resource management programs with African institutions in four (4) East African Countries.

The project was initiated in October 1980 and, except for the cooperative Regional Demonstration Project in the Ruhengeri Prefecture of Rwanda, will come to an end by September 30, 1985. The majority of project activities have been conducted through programs in the Sudan, Kenya, Rwanda, Tanzania, the Lake Victoria Region and in eight countries in West Africa. The technical assistance provided to any particular country or regional organization ranges from single environmental, awareness-type workshops for government officials to multi-year, multi-faceted institution building programs with training workshops, counterpart training and research support.

The areas of emphasis in the project fall into two categories, (1) environmental training and (2) resource management recognizing that resource management includes some environmental training activities as well.

II. OBJECTIVE

The objective of this evaluation is to examine the range of activities in environmental education and resource management conducted under this project and assess the extent to which they achieved the objectives of the project taking into account the : various models and approaches used; the impact these activities had on the management of the natural resource base; relationship to the natural resource activities carried on by AID Missions, the REDSOs and the African countries involved; the management mode in implementing the project and its impact on its effectiveness; and the lessons learned from this experience.

III. STATEMENT OF WORK

The contractor will prepare a report consisting of the following :

1. Executive Summary of Findings and Recommendations.
2. Description of Evaluation Methodology (e.g., survey research, interviews, etc).

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3. Description of the Environmental Training and Natural Resource Activities (include a matrix of these activities by country (region), the institutional linkages achieved and the design and implementation process used.)
4. An Analysis of the Activities (training and resource management) taking into account, but not limited to, the following considerations :
  - a. comparative analysis of planned and realized program work plans to achieve the project purpose;
  - b. cost efficiency and effectiveness of the different technical assistance models used (training seminars, participation in operational programs, institution building, etc.);
  - c. experience in attacking regional (transnational) natural resource problems as distinguished from national problems;
  - d. the relative merits of administering a natural resource initiative regionally, as in the case of ETMA -vs- the bilateral approach through the individual A.I.D. Missions;
  - e. the degree to which any new initiatives in natural resources must contribute to planned operational goals rather than improving the manpower and institutional base without a defined operational impact;
  - f. a determination of the merits of taking into account the building of natural resource institutions as an approach and the formulation of appropriate criteria for developing institutional linkages such as;
    - indicators of potential or existing effectiveness;
    - promise of influence in policy making and technology transfer in the country or region; potential relationships to AID Mission and other donors for future impact on natural resource problems.
    - potential for stability and longevity as reflected by its political base, technical reputation and funding sources within the bureaucracy.
  - g. evaluation of the effectiveness of short-term training taking into account the various models used such as training conducted :

- with a firm institutional base;
  - within the context of broader-based, continuing program;
  - as isolated events in a single country;
  - as regional exercises;
  - as "awareness" programs for middle-and upper-level government personnel;
  - as "skill enhancement" for technical personnel.
- h. an analysis of the management mode of the project and its impact on its technical effectiveness;
  - i. the need for an understanding of the natural resource problems of a country or region before project resources are used for training and resource assessment activities. To what extent was this important to the ETMA project ?
  - j. relationship of ETMA project to CDSS and missions programs and suggestions for improved reconciliation.
  - k. provisions for follow-up by ETMA after training and resource assessment activities.
5. Impact of ETMA in Attacking Natural Resource Problems in Africa.
  6. Identification of Significant Problems and Issues.
  7. Lessons Learned.
  8. Recommendations for Future Project Design including :
    - a. Alternative technical assistance delivery systems, e.g., operational projects with technical support, including research.
    - b. the merits of short-term training projects to attack environmental problems. What other approaches are feasible ?
    - c. if institutional relationships are important for success what are the criteria for institution selection ?
    - d. need for institution strengthening in data collection and resource assessment to support local governing bodies and educational systems in addressing environmental problems.

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- e. do future regionally administered projects in the ETMA model make sense or should such efforts be conducted within mission bilateral programs ? Are both approaches needed ?

#### IV. REPORTS

The Contractor will submit a draft report containing prescribed material evaluating the domestic and overseas aspects of ETMA by the third week of October and a final report by mid-November of 1985.

#### V. TEAM COMPOSITION AND RELATIONSHIPS

The Evaluation Team will be composed of four members with the following credentials :

1. Team Leader of the ETMA Project - senior expert knowledgeable about the A.I.D. development assistance program and specifically well-versed in the design and implementation of natural resource management programs.
2. Ecologist - well prepared in the ecological sciences with experience in Africa and acquainted with various approaches to the transfer of technical assistance in the less developed world in the field of natural resource management.
3. Ecologist/Training Specialist - serves as the Team Leader for the evaluation of the environment training aspects of the ETMA project reporting to the Team Leader for the overall ETMA evaluation. Background and experience in natural resource management in Africa, including manpower training. French-speaking capacity is required.
4. Manpower Development Specialist - second member of the evaluation team that will review the environment training aspects of ETMA with credentials in the environmental sciences but with specialization in manpower development and training methodology. Experience in Africa and French-speaking capacity are also essential.

APPENDIX IV

LIST OF ETMA DOCUMENTS

I. Annual and Mid-Year Progress Reports

Annual Report - Project Year I, September 30, 1980 - December 31, 1981.

Annual Report - Project Year II, 1982.

Annual Report - Project Year III, 1983.

Annual Report - Project Year IV, 1984.

Mid-Year Report - Project Year I, September 30, 1980 - June 30, 1981.

Mid-Year Report - Project Year III, January 1 - June 30, 1983.

Mid-Year Report - Project Year IV, January 1 - June 30, 1984.

II. Evaluation Reports

Evaluation of Environmental Training and Management in Africa (Project No. 698-0427); International Science and Technology Institute, Inc. (ISTI), June 1982.

Response to the Evaluation Report on the Environmental Training and management in Africa Project; South-East Consortium for International Development (SECID), August 1982.

Evaluation of the Resource Management Component of the Environmental Training and Management in Africa Project, #698-0427, in Kenya, Sudan and Tanzania; Associates in Rural Development, Inc. (ARD), February 1984.

III. Sudan

A. Resource Management

1. ETMA-Sudan Working Papers

Monitoring Environmental Change: Thoughts on Physical and Social Indicators in the Sudan - No. 1; D.L. Johnson, 1982.

The Impact of Water Development on the Biophysical Environment in Some Areas of Northern Kordofan Province - No. 2; Mohamed A.I. Ghanim, S.A. El Tayed, Mohamed Y. Mabruk, 1982.

Potential Social and Economic Indicators in the Khuwei-Mazroub Area - No. 3; Mohammed Osman os-Sammani, Siddig Umbadda, and D.L. Johnson, 1982

2. Baseline/Trend Analysis Reports

El Khuwei-Mazroub-Tinna Study Area (North central Kordofan) No. 1. M.O. El Sammani et al., December 1983.

Gedaref District (Kassala Province) No. 2. Galal E.D. El-Tayed and Anne Lewandowski, December 1983

Blue Nile River (Ethiopian Border to Khartoum) No. 3. Lufti A.G. Desougi and F. Sinada, December 1983.

Tegali District, Nuba Mountains (Southern Kordofan) No. 4. Siddig A. Awadalla et al., December 1983.

Umm keddada District (Eastern Darfur) No. 5. Massan A. El-Mangouri et al., December 1983.

The Dinder National Park Study Area (Central Region) No. 6. A.I. Mograby, December 1983.

Messerlyia Humur (South Kordofan) No. 7. Salih A. El Arifi et al., December 1983.

Lower River Atbara Area (Nile Province) No. 8. Hassan A. Abdel-Ati, December 1984.

3. Monitoring Reports

Gedaref District - 1983-84; G.E.L. El Tayeb, June 1984.

Umm Kaddada District, Northern Darfur Province - 1985; H.A. El Manjouri, January, 1985.

4. Conference/Workshop Summaries

Indicators of Environmental Change and Desertification in Sudan, Proceedings of National Conference, 4-6 March 1984, Khartoum.

Environmental Degradation in Gedaref District, Summary of a Workshop, 14-16 April 1984, Gedaref.

B. Training

1. Environmental Impact of Development (11/21-12/10/81).
  - a. Summary Report, Clark University
  - b. Workbook, Clark University
2. Workshop on Combatting Desertification in Africa (10/23-28/82).
  - a. Summary Report, Clark University.
  - b. Workbook, Clark University.
3. Water for Human Needs (11/6-25/82).
  - a. Summary Report, Clark University
  - b. Workbook, Clark University.
4. Monitoring and Controlling Desertification (2/20-24/83).
5. Planning for Environmental Education in the Sudan (10/22-11/3/83).
  - a. Workbook, Clark University
  - b. Proceedings, Institute of Environmental Studies.
6. Course on Environmental Education (10/27-11/8/84).

IV. Kenya

A. Resource Management

1. District Environmental Assessment Reports
  - Kwale District (Draft), December 1984.
  - Kilifi District, December 1984.
  - Nakuru District, March 1984.
  - Murang'a District, November 1982
  - Kisii District, August 1981.
  - Kitui District, December 1981.

Kajiado District, May 1980.

Myeri District, May 1980.

2. Land Degradation

Progress Report on Assessing Soil Loss in Kiambu and Murang'a Districts in Kenya, Lawrence Lewis, 1984.

Land Degradation Monitoring Programme of the National Environment and Human Settlements Secretariat, Ministry of Environment and Natural Resources, Kiambu District, Kenya - First Pilot Study, Lawrence Lewis et al., April 1983.

Land Degradation Monitoring Programme of the National Environment and Human Settlements Secretariat, Ministry of Environment and Natural Resources, Murang'a District, Kenya - Second Pilot Study, G. Kamau, 1983.

B. Training

Environment Enhancement and Resource Management in the Eastern Province - Priorities and Accomplishments in Dealing with Desertification (3/30-4/2/82).

Endangered Resources for Development - Proceedings of a workshop on the status and options for management of plant communities in Kenya - Nairobi, Kenya - (3/6-8/84) - 27 papers presented.

Natural Resource Strategy Conference (8/22-23/84).

V. Tanzania

A. Resource Management

An Atlas of the Natural Physical Features and Agriculture Potential of the Rukwa Region, January 1984.

B. Training

1. The Short Course on Heavy Metals and Pesticides in the Environment (3/9-20/81).

a. Summary Report, University of North Carolina.

b. Workbook, University of North Carolina.

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2. Environmental Considerations in Regional Planning (11/16-28/81).
  - a. Summary Report, Clark University.
  - b. Workbook, Clark University.
3. Techniques of Promoting, Installing, Operating and Monitoring Urban Ventilated Improved Pit Latrines: Environmental Considerations (4/27-5/8/82).
  - a. Summary Report, University of North Carolina.

VI. Lake Victoria Regional

A. Resource Management

1. Monitoring Reports

Winam Gulf Baseline Study - (6-8/84) - Foxall, Litterick, Njuguna.

2. Trip Reports

- a. Daniel Okun - 2/20-3/10/83.
- b. Dale Whittington - 7/17-8/11/83.
- c. Stephen Shoaf - 4/3-19/84.
- d. Daniel Okun - 7/2-19/84.
- e. Milton Heath - 7/84.
- f. Stephen Shoaf - 7/18-8/6/84.
- g. Francis DiGiano - 7/18-8/6/84.
- h. Daniel Okum - 3/12-27/85.

B. Training

1. A Seminar on Water Supply and Water Pollution Control in Kenya (7/20-8/7/81).
  - a. Workbook, University of North Carolina.
2. Workshop on Water Quality Management and Pollution Control (7/25-8/5/82).
  - a. Proceedings, Lake Basin Development Authority.

3. Technical Course on Water Quality Monitoring and Analysis, Kakamega (11/28-12/16/83).
  - a. Summary Report, Lake Basin Development Authority.
  - b. Summary Report, University of North Carolina.
  - c. Workbook, Univeristy of North Carolina
4. The Technical Conference on The Current and Future Implications of Development in the Aquatic Environment of Lake Victoria (Ecological Status of Lake Victoria)
  - a. Papers presented, Lake Basin Development Authority.

VII. East Africa (Other)

A. Rwanda Seminar

1. Seminar on Energy and Environmental Management Needs in Rwanda, Kigali, Rwanda (1/10-15/83), Summary Report, R. Ford and F. Weber.
2. Workbook, Apports des energies renouvelables a las gestion de l'energie et de l'environement au Rwanda, Clark University.
3. Proceedings, L'seminar sur les apports des energies renouvelables a la gestion de l'energie et de l'environement au Rwanda.

B. Zimbabwe

Resource Degradation and Development Planning in Semi-Arid Environments, Bulawayo, Zimbabwe (7/25-30/82).

1. Summary Report, R. Ford.
2. Workbook, Clark University. A workshop on Tropical Limnology (1/14-2/24/83).

C. Somalia

Energy and Environmental Management Needs in Somalia (2/15-17/82).

1. Summary Report, Clark University.

VIII. West Africa (Other)A. Ivory Coast

1. Seminar on Techniques of Environmental Impact Assessment (8/30-9/11/82).
  - a. Final Report, F. Weber and C. Bingham.
  - b. Final Report, Ministry of Environment (in French).
2. Comptes-rendus du seminaire sur l'agroforesterie au sahel, vol. 1: syllabus et documents d'appui (in French).
3. Procèdes due seminaire sur l'agroforesterie au sahel, vol. 2: background papers (in French).
4. Agroforestry in the Sahel, M. Hoskins and F. Weber.

C. Cameroun

Seminar on Management of the Environment: Camerounian Realities (11/15-23/83).

1. Working Papers.
2. Final Report.

D. Mali

Seminar on Management of the Environment and Rural Planning: The Utilization of Earth Resources Information (10/27-11/7/83).

1. Final Report, D. Major, Clark University.
2. Workbook, Clark University.
3. Proceedings, Seminaire/Ateliler sur la gestion de l'environnement et la planification de l'espace rural (in French).

E. Sierra Leone

1. Land-use Planning for Rural Development with Special Attention to Environmental Management (11/1-12/82).
  - a. Workbook, Alabama A & M University.
  - b. Final Report, Alabama A & M University.

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- c. Summary of Proceedings, Conclusions and Recommendations of the Workshop on Land-Use Planning for Rural Development, Alabama A & M University.
    - d. Papers presented (38).
  - 2. Role of Extension in Environmental Management and Agriculture (5/16-6/3/83).
    - a. Workbook Alabama A & M University.
    - b. Papers presented (73).
    - c. Final Report, Alabama A & M University.
- F. Congo  
Seminar/Workshop on "The City and the Environment" (9/12-22/83).
  - 1. Final Report, University of North Carolina.
  - 2. Papers presented.
- G. Senegal  
OMVS Seminar on Environmental Monitoring (12/12-20/83).
  - 1. Final Report, W. Emerson.
  - 2. Papers presented.
- H. Togo  
ETMA Seminar/Workshop on Environment and Management of Natural Resources in Togo (8/30--9/7/83).
  - 1. Final Report, R. Zimmermann, ARD.

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PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

|  |  |   |
|--|--|---|
| <p>1. PROJECT TITLE</p> <p>Environmental Training and Resources Management in Africa</p> | <p>2. PROJECT NUMBER</p> <p>698-0427</p> | <p>3. MISSION/AID/W OFFICE</p> <p>AFR/RA</p> <p>4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY)</p> <p>698-83-01</p> <p><input checked="" type="checkbox"/> REGULAR EVALUATION    <input type="checkbox"/> SPECIAL EVALUATION</p> |
|--|--|---|

|   |   |   |
|---|---|---|
| <p>5. KEY PROJECT IMPLEMENTATION DATES</p> <p>A. First PRO-AG or Equivalent FY <u>80</u></p> <p>B. Final Obligation Expected FY <u>84</u></p> <p>C. Final Input Delivery FY <u>85</u></p> | <p>6. ESTIMATED PROJECT FUNDING</p> <p>A. Total \$ <u>11.3 M</u></p> <p>B. U.S. \$ <u>8.5 M</u></p> | <p>7. PERIOD COVERED BY EVALUATION</p> <p>From (month/yr.) <u>10/80</u></p> <p>To (month/yr.) <u>6/82</u></p> <p>Date of Evaluation Review <u>August 10, 1982</u></p> |
|---|---|---|

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

| <p>A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)</p> | <p>B. NAME OF OFFICER RESPONSIBLE FOR ACTION</p> | <p>C. DATE ACTION TO BE COMPLETED</p> |
|---|--|---------------------------------------|
| <p>1. SECID has proposed strategies in response to a recommendation of the evaluation. These country/regional strategies must be reviewed and the FY 1983 work plan agreed upon with SECID.</p>   | <p>V. Mahan</p>                                  | <p>November 1982</p>                  |
| <p>2. Completion of the review of the FY 1983 budget and the draft language for the revision of the contract with SECID to assure appropriate reorganization of the management of the project.</p>  | <p>V. Mahan</p>                                  | <p>November 82</p>                    |
| <p>3. Issuance of a PIO/T to reflect new SECID management arrangements.</p>   | <p>V. Mahan</p>                                  | <p>December 82</p>                    |

DEC 10 1982  
 EXECUTIVE  
 DIRECTOR

|  |  |
|--|--|
| <p>9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS</p> <p><input type="checkbox"/> Project Paper    <input type="checkbox"/> Implementation Plan e.g., CPI Network    <input type="checkbox"/> Other (Specify) _____</p> <p><input type="checkbox"/> Financial Plan    <input checked="" type="checkbox"/> PIO/T    _____</p> <p><input type="checkbox"/> Logical Framework    <input type="checkbox"/> PIO/C    <input type="checkbox"/> Other (Specify) _____</p> <p><input type="checkbox"/> Project Agreement    <input type="checkbox"/> PIO/P    _____</p> | <p>10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT</p> <p>A. <input checked="" type="checkbox"/> Continue Project Without Change</p> <p>B. <input type="checkbox"/> Change Project Design and/or <input type="checkbox"/> Change Implementation Plan</p> <p>C. <input type="checkbox"/> Discontinue Project</p> |
|--|--|

|  |  |
|--|--|
| <p>11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)</p> <p><i>[Signature]</i><br/>V. R. Mahan<br/>Project Officer</p> <p><i>[Signature]</i><br/>C. Husick<br/>Project Officer</p> <p><i>[Signature]</i><br/>W. Sherwin<br/>Deputy Director</p> | <p>12. Mission/AID/W Office Director Approval</p> <p>Signature <i>[Signature]</i></p> <p>Typed Name <u>W. H. Naylor, Jr.</u></p> <p>Director <u>AFR/RA</u></p> <p>Date _____</p> |
|--|--|

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EXECUTIVE SUMMARY  
EVALUATION OF ENVIRONMENTAL TRAINING  
AND MANAGEMENT IN AFRICA  
(Project No. 698-0427)

Prepared for:

Bureau For Africa  
Agency for International Development  
Washington, D.C.

(IQC No. AID/SOD/PDC-C-0251, Work Order No. 12)

Prepared by:

International Science and Technology Institute, Inc.  
2033 M Street, N.W., Suite 300  
Washington, D.C. 20036

June 1982

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EXECUTIVE SUMMARY  
EVALUATION OF ENVIRONMENTAL TRAINING  
AND MANAGEMENT IN AFRICA  
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Prepared for:

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2033 M Street, N.W., Suite 300  
Washington, D.C. 20036

June 1982

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EXECUTIVE SUMMARY

## GENERAL

This Executive Summary presents the results of a mid-term evaluation of the Africa Bureau's project for Environmental Training and Management (ETMA). ETMA is a regional grant project started in October 1980. It has a projected life of five years at a total estimated cost of \$11.3 million, with an AID share of \$8.5 million. As of December 31, 1981, U.S. fund obligations were \$2,932,000 and expenditures were \$894,106.

The project is being implemented through a prime contract with the South-East Consortium for International Development (SECID) and subcontracts with the University of North Carolina (UNC), and Clark University (Clark).

The evaluation was conducted by a team from the International Science and Technology Institute, Inc. (ISTI). The team members were: Fred R. Weber, Environmentalist, and William R. Thomas 3d, Management Specialist and Team Leader.

## THE PROJECT CONCEPT

The ETMA project was designed in the collaborative technical assistance mode. The goal of the project is an improved African capacity to deal with the major environmental problems, particularly desertification, soil erosion, water supply and health. The project purpose is to establish training in Africa in environmental planning and resource management and to strengthen African institutional capabilities to (1) improve their environmental information base, (2) identify priority environmental problems, and (3) monitor environmental tasks.

The ETMA project consists of two inter-related sets of activities, environmental training and resource management. A work plan for each set was specified in detail for the first two years of the project, with work in subsequent years to be determined by experience during the first two.

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Environmental training was to include short seminars for policy personnel; medium-term courses for technical personnel, and longer term individual training, primarily in Africa.

Resource management is an extension of prior work done by Clark in the Sudan, Tanzania, Kenya, and Botswana. The purpose was to provide technical assistance and training in order to initiate or support specific environmental programs or activities. Two additional countries were to be added in the third or fourth years of the project.

In addition, the PP provided for two representatives to be posted overseas. The representative in Nairobi was to devote one half of his time to assisting and coordinating the training program, and the other half to working as a resource management advisor to the National Environmental Secretariat. The representative in Abidjan was to coordinate training and resource management full time.

#### THE NEED FOR THE PROJECT

Those Missions in Africa which are engaged in environmental work generally focus on immediate environmental action programs, either directly or as an integral part of broader projects. The ETMA project provides a necessary balance by addressing the longer range environmental problems. This balance is needed because, while immediate action cannot be postponed, long run institutional solutions must be found. We believe that the ETMA project should be continued, provided that the project implementation process can be restructured so that there is a reasonable likelihood that it will achieve its purpose and goal.

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### THE MANAGEMENT HIATUS

There are two management problems which pervade the ETMA Project. They are:

- the lack of effective management within the contractor organization and within AID.
- the lack of specific, articulated plans which define individual project activities and link them to the project's goals and purposes.

The results have been:

- Project activities which do not contribute meaningfully to the project.
- Activities which have been less successful than they should have been.
- An inability at all levels of project management to evaluate the progress or success of any given activity, or of the project as a whole.
- Management by default rather than by decision.

These problems are so severe that, in our judgement, the ETMA project, as it is currently being implemented, will not achieve its goals and purposes. If the project is to continue its management and implementation must be redesigned. If this cannot be done, the project should be cancelled.

### THE LACK OF EFFECTIVE MANAGEMENT

Inadequate management within the contractor structure is the result of two factors:

- SECID is not staffed to manage the contract properly and this type of management requires a departure from its past style of operations.
- The contract stipulates a fragmentation of responsibility that precludes effective management.

The major management difficulties in the prime contract are that:

- It does not charge SECID with overall responsibility for contract performance.
- It assigns responsibility for coordination of training and resource management to UNC and Clark, with no provision for SECID to supervise them.

- It provides that the two regional contract representatives stationed in Africa "will be responsible to and receive guidance from the Contract Management Committee," not SECID.

The SECID subcontracts with UNC and Clark are in keeping with this pattern.  
They are funding documents, not effective contracts. All they contain are a budget and administrative provisions. UNC and Clark are entitled to payment within the budget limit if they certify that the costs have been incurred. Whether anything has been accomplished, let alone anything worthwhile, is moot.

AID's management problem is one of execution, not structure. Virtually all of the effective AID management of the project has come from Africa Bureau's Office of Regional Affairs, but its ability to do this is clearly limited, and it has not received adequate support from the Missions.

#### THE IMPLEMENTATION PROCESS

The prime contract requires that an annual work plan be submitted for AID approval for each of the last three years of the project, but there is no requirement to seek approval for changes in the first two years, and no recognition that this might be necessary. This was an unreasonable expectation, and it has not occurred.

The rigid implementation plan is exacerbated by the inadequacy of the basic implementing documents - the annual memoranda of understanding with the host governments and the working agreements covering individual project activities.

These documents contain much that is useful, but they are inadequate because:

- They are narratives. They describe what is to be done, how, by whom and when, and who is to pay for it. But they don't say why. What inherent purpose does the activity serve, and how does it contribute to the objectives of the project?
- They do not identify the internal elements that are essential to an activity's success.

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In short, the present implementing documents lack the basic analytic framework that is the foundation of the AID project preparation process. The framework need not be elaborate, but it is essential.

#### ENVIRONMENTAL TRAINING - PROGRESS TO DATE

During the first project year the environmental training element has been characterized by:

- Major changes in the structure of the training.
- A slow start and consequent slippage in planned training activities.
- Resultant increased unit costs.

Two structural changes have taken place. The first is a major reduction in planned and actual short seminars. These were a central element in the original project plan. The second is a basic change in duration of the medium term courses, from a planned 4 to 6 weeks to 2 to 3 weeks.

The result has been increased training costs for medium term courses. During the first project year, the actual cost per trainee week was 144% of that originally planned. And costs per week were a specific issue in the project paper. (If overhead costs are added the picture becomes much worse. During the first project year, overhead costs at UNC, which is engaged solely in training, totaled \$73,767. This is 76% of the direct costs of the two seminars UNC conducted.)

Outputs of these courses in terms of persons trained still leave the basic question of, so what? What will happen in terms of changed job performance or effective environmental work as a result of the training? If nothing happens the training will have largely been a waste. Too little consideration has been given to this question in the design of the courses or potential follow-up action.

## RESOURCE MANAGEMENT

Outputs for resource management are difficult to quantify, but our overall assessment is:

- Sudan: The work with the Institute for Environmental Studies is productive and should continue.
- Tanzania: The work to date has had limited utility, but the Bureau for Resource Allocation and Land Use Planning deserves continued support.
- Kenya: The National Environmental Secretariat is a unique African institution which should be supported above all others. On balance, this is ETMA's best opportunity in resource management and the most productive so far.
- Botswana: Nothing happened in Botswana, for internal reasons.

Judged against the project paper, project outputs in resource management have fallen short. This is an inherent risk in any institution building activity. Yet inputs have not lagged significantly and the gap between inputs and outputs in resource management parallels that in training. In the first year, personnel costs were 93% of planned levels, 122% if Botswana is excluded.

At Clark, only 26% of the total resource management costs for U.S. personnel were for services performed overseas. We do not believe that this ratio of 3 dollars spent in the U.S. for every dollar spent overseas is consistent with the project's goal of strengthening African institutions, and much of the work being done in the United States appears to have been academic and detached from reality.

## A RECAP OF OUR OVERVIEW

The comments above are largely negative, but they should not obscure our firm conviction that the project deserves continued support. It is a professional judgement, which we can support but not prove, but it is firm. The problems are in the management and implementation of the project. They can be remedied, and the effort to do so would be worthwhile.

Given all of the above, there are three apparent overall alternatives for the future of the the ETMA project:

- The first alternative is to cancel the project. The main advantage of this is that it would be relatively simple and overall savings in project costs would be considerable.
- The second alternative is to continue the project with a sharply reduced set of activities. Likely candidates for continuation would be the resource management work. The project might then be reduced to a single direct contract with Clark. But this restructuring would not be as easy as it might appear. Even a more limited set of activities would require that an analytic framework be designed and put to use, and considerable pre-project and in-project preparatory work would have been wasted.
- The third alternative is to continue the project with a restructured management and management system. This alternative offers a reasonable prospect of achieving all or most of the original project's goals and purposes. There is a risk that the proposed analytic framework will not be as effective as we think it will, or that SECID cannot become an effective manager. We believe these risks are acceptable. It is also our judgement that the project's ends justify the effort to redesign the management of project implementation.

(Africa Bureau has established a requirement that certain questions be answered in the executive summary of all evaluations. The questions are aimed at the transfer of technology, and ETMA's purpose is institution building, so we doubt their relevancy to this project. However, our answers to the questions, in the context of this project, are contained in the attachment to this Executive Summary.)

#### LIFE OF PROJECT COSTS

At this stage it appears likely that life of project costs will fall short of the originally projected \$8.5 million. There has been considerable project slippage to date, and redesign and restricted activity criteria will cause more.

#### RECOMMENDATIONS

Based on the above analysis, our recommendations for the ETMA project are:

Recommendation 1: We recommend that the ETMA project continue basically as it was originally conceived, but with management, and the management structure, redesigned to provide a reasonable prospect that the project will achieve its overall goals and purposes.

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Recommendation 2: We recommend that if the management and implementation of the ETMA project cannot be effectively restructured, the project be cancelled.

Recommendation 3: We recommend that separate documentation or the memoranda of understanding and working agreements (preferably the latter) require the preparation of an analytic framework for each discrete project activity. The essential elements that should be included in such a framework are described in more detail in Chapter II.

Recommendation 4: We recommend that the prime contract be revised to create a contractor structure appropriate for the implementation of an \$8.5 million project. Necessary prime contract changes include the following:

- Make SECID directly responsible for the success of the project, give it the authority to do so, and hold it accountable for results.
- Have the regional representatives report to SECID, not to the Management Committee.
- Limit the role of the Management Committee to one of providing advice to SECID.
- Make Clark's coordination of environmental management (and UNC's coordination of training, if it is continued) clearly subordinated to SECID's overall management and control.

Recommendation 5: We recommend that AID look to SECID for overall project management and that SECID be staffed to do the job. What is required is a full-time professional manager who is provided with adequate administrative and clerical support and thus is free to manage.

Recommendation 6: We recommend that the subcontract with UNC be ended and that SECID be assigned responsibility for the coordination of environmental training. As training courses are identified SECID should job them out to the most appropriate member school in the consortium.

Recommendation 7: We recommend that the subcontract with Clark University be revised in accord with the prime contract revisions recommended above. The revision should:

- Make Clark clearly subordinate to SECID.
- Charge Clark with accomplishing specific tasks.
- Assign resources to each specific task.
- Impose stricter reporting requirements on accomplishments, and
- Base invoices on work done, not money spent.

Recommendation 8: We recommend that AFR/RA continue to be responsible for overall monitoring; that the Missions be more specifically charged with review of proposed activities against stipulated criteria; and that the REDSO's continue to serve in an advisory role to the Missions.

Recommendation 9: We recommend that the activity at Clark be reviewed with a view toward sharply reducing the amount done in the U.S.; that any research in the U.S. be explicitly justified in the future; and that AID and the contractor seek ways to use more EIMA funds for relevant work done in Africa by Africans.

Recommendation 10: We recommend that AID and the contractor review the overhead establishment at Clark with the intent of reducing the share of environmental management funds that are spent on overhead; and that strict controls on overhead costs be built into the revised subcontract with Clark.

Recommendation 11: We recommend that the position of coordinator in East Africa be continued, but that the need for a resident coordinator in West Africa be reexamined at the end of the present incumbent's two year tour.

Recommendation 12: We recommend that a special effort be made to use more local case studies. Ways should be found to involve Africans more in course preparation and U.S. faculty should spend more of the course preparation time in Africa, even if this involves extra per diem.

Recommendation 13: We recommend that all current resource management activities be carefully reviewed when the proposed analytic frameworks have been prepared for them. Particular attention should be paid to the extent of host country involvement.

ATTACHMENTEvaluation of Information Needed by AFR

This attachment attempts to answer the questions posed in State 081077. The answers pertain to the project for Environmental Training and Management in Africa (ETMA). The goal of the ETMA project is to build the capability of African governmental institutions to deal with environmental problems on a national level. What is being transferred is "technology" in a very sophisticated sense. Our answers are heavily qualified by this fact.

Our answers to the questions are as follows:

I. What constraint does this project attempt to overcome and who does it constrain?

The constraint is the severity of environmental problems in Africa. It constrains the rural people and the continent's future. In the long-term, if soil and vegetation and water are exhausted, the prospect for ever increasing future generations is bleak. The project attempts to help African nations find a balance between current development and its long-range ecological consequences.

II. What technology does the project promote to relieve this constraint?

The capability of selected African governments to make a rational choice between immediately productive development activities and the ecological future, and the capability to mount long range programs to deal with known environmental problems.

III. What technology does the project attempt to replace?

None, it does not exist now.

IV. Why do project planners believe that intended beneficiaries will adopt the proposed technology?

The intended beneficiaries - the rural populace - do not have to adopt the proposed technology. It needs to be adopted at the central governmental level.

V. What characteristics do intended beneficiaries exhibit that have relevance to their adopting the proposed technology?

The ultimate beneficiaries have none. The intermediaries - the government officials who are the direct recipients of the technology - have demonstrated their ability to adopt it. The staff members at Khartoum University, for example, are trained professionals who have devoted considerable personal energy to the project. They are highly motivated and competent.

VI. What adoption rate has this project or previous projects achieved in transferring the proposed technology?

We know of no precedent previous project. The adoption rate in the first project year of this project was low, but we believe that this is a function of poor implementation and the inherent difficulties of institution building. With proper management longer run prospects should be better.

VII. Will the project set in motion forces that will:

- Induce further exploration of the constraint and improvements to the technology package to overcome it?

Yes. The whole purpose is to enhance the ability of African governments to deal, on their own, with pervading environmental problems.

VIII. Do private input suppliers have an incentive to examine the constraint addressed by the project and come up with solutions?

This is not applicable to the project, which is designed to strengthen the capability of government institutions to deal with environmental problems. Any private sector involvement will come later.

IX. What delivery system does the project employ to:-----

- transfer the technology to intended beneficiaries
- does the project provide training in the use of new technology to extension agents who will in turn train groups of farmers? What entities...

This project is not aimed directly at farmers although they would be ultimately involved. It does have a basic purpose of creating a continuing training capability, and this has not been done as well as it should have been.

X. What training techniques does the project use to develop the delivery system?

The conduct of courses under African direction and relying heavily on African instructors. In the future this should be supplemented by explicit plans for the local conduct of follow-on courses.

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ATTACHMENT A: Evaluation Scope of Work

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## INTRODUCTION

### General

This report presents the results of a mid-term evaluation of the Agency for International Development's regional project for Environmental Training and Management. (A more appropriate title would have been, "Environmental Training and Resource Management in Africa".) The project's acronym is ETMA. ETMA is a grant project started in October 1980. It has a projected life of five years at a total estimated cost of \$11.3 million, with an AID share of \$8.5 million. As of December 31, 1981, U.S. fund obligations were \$2,932,000 and expenditures were \$894,106.

The project is being implemented through a prime contract with the South-East Consortium for International Development (SECID), a university consortium based in Chapel Hill, N.C., and through SECID sub-contracts with the University of North Carolina (UNC), and Clark University (Clark)

The goal of the project is an improved African capacity to deal with major environmental problems, particularly desertification, soil erosion, water supply and health. The project purpose is to establish training in Africa in environmental planning and resource management and to strengthen African institutional capabilities to (1) improve their environmental information base, (2) identify priority environmental problems, and (3) monitor environmental tasks.

This evaluation has been conducted under an indefinite quantity contract for Environmental Protection and Natural Resources Development between the International Science and Technology Institute, Inc. (ISTI) and the Agency for International Development (AID) - Contract No. AID/SOD/PDC-C-0251, Work Order No. 12, PIO/T 689-0427-3-6124802.

The evaluation was carried out by a two person evaluation team from ISTI. The team members were: Fred R. Weber, Environmentalist, and William R. Thomas 3d, Management Specialist and Team Leader. The evaluation was conducted under the general supervision of James W. Dawson, Senior Project Officer in the Office of Regional Affairs, Bureau for Africa (AFR/RA). The scope of work for the evaluation is attached as Appendix A.

### Objectives

The objectives of the evaluation were:

- to re-examine the original project design;
- to assess progress toward meeting the planned outputs, purposes and goals of the project;
- to identify significant issues or problems; and
- to recommend any changes that would assist in the achievement of the project's purposes.

The evaluation was also intended to determine whether the project's purposes continue to be valid and whether the current project approach is the most effective and appropriate method of achieving those objectives.

### Methodology

The methodology used in the evaluation was essentially identical with that set forth in the scope of work. It was primarily empirical. Inputs and outputs were analyzed and quantified where possible, but accomplishment in terms of the major goals cannot be quantified at this stage in the project's life, if indeed they ever can be.

The evaluation is based on interviews with individuals involved in the project and the review of relevant documents at various locations in the U.S. and Africa. Individuals interviewed ranged from AID and foreign government officials to

seminar participants. Documents reviewed ranged from basic program documents to training and reference materials produced by the project. In addition, the team observed the actual conduct of a seminar in Tanzania.

Site visits, in terms of locations and working days were:

- U.S.: AID Washington, 2 days; SECID and UNC, 2 1/2 days; Clark 2 days.
- Africa: Sudan, 2 days; Tanzania, 5 days; Kenya, 5 days; Abidjan, 1 day.

## I. PROJECT BACKGROUND

### The Origins of the Project

The ETMA project was designed in the collaborative technical assistance mode. It was both designed, and is being implemented, by SECID and its two subcontractors, UNC and Clark. The project had its genesis in environmental activities conducted between 1977 and 1979 by UNC and Clark using AID project support and development funds. These efforts culminated in the preparation of two separate Project Identification Documents: one on environmental training in Africa prepared by UNC, and one on resource management in East and Southern Africa prepared by Clark. During the review process, because of the obvious inter-relationship between the two projects, a decision was made to combine them into one. Apparently, neither Clark nor UNC wanted to assume primary responsibility, so SECID was brought in to perform this role and to make the capabilities of its 32 member institutions available to the project.

The process of development of the combined project involved field visits to 12 countries in Africa which had expressed interest in environmental training. A PID for the combined project was then drafted. It was reviewed at a meeting in Dakar in March 1979, which was attended by representatives from interested African countries, regional organizations, and the U.S. The meeting produced recommendations that were incorporated into the final PID, which was approved by AID in July. The Dakar meeting also resulted in the creation of a Steering Committee, with U.S. and African representatives, to provide advice and guidance on the design and conduct of the project. The Steering Committee has met three times, in August 1979, October 1980 and May 1982. The 1979 meeting developed recommendations for the design of the project and the type of training and other project activities

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that should be included. These recommendations were substantially incorporated into the project paper (PP), which was approved on August 5, 1980. The contract with SECID was signed on September 30, 1980, and subcontracts with UNC and Clark, were signed in November. These dates are four months later than the projected dates in the original implementation schedule.

### The Project Concept

As might be expected from its origins, the ETMA project consists of two relatively discreet, although inter-related sets of activities - environmental training and resource management. A work plan for each set was specified in detail for the first two years of the project, with work in subsequent years to be determined by experience during the first two.

### Environmental training was planned to take place at three levels:

- Short (3-5 days) seminars for middle to upper level planning and policy personnel, intended primarily to sensitize them to environmental concerns and to stimulate them to include such concerns in their planning and management. Six seminar topics were identified in the PP and 13 seminars were planned for the first project year at a total cost of \$292,000.
- Medium term (4-6 weeks) courses for technical personnel, policy implementors and extension personnel. Three seminar topics (two of which are the same as short seminar topics) were identified in the PP, and five courses were planned for the first project year at a total cost of \$313,500.
- Longer term (2-12 months) individual training, to be conducted primarily at African institutions. No long term training was planned for the first fiscal year, because of the lead times involved. Fifteen trainees were planned for the second fiscal year at a total cost of \$90,000.

Resource management is an extension of prior work done by Clark in four East and Southern African countries to provide technical assistance and training to initiate or support specific environmental programs or activities. Two additional unidentified countries were potentially to be added in the third or fourth years of the project. The four original country activities were:

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- Kenya: Local environmental planning to include development of district resource profiles, establishment of a district monitoring systems, soil erosion analysis, and the development of a national resource plan. U.S. support was to consist primarily of 25 person months of technical assistance and funding of research studies at a LOP cost of approximately \$864,000.
- Tanzania: Environmental health, to include environmental health monitoring and the creation of an environmental policy unit within the government, and environmental and resource mapping. U.S. support was to consist primarily of 28 person months of technical assistance, case studies, cartography, and satellite imagery at a LOP cost of approximately \$685,000.
- Botswana: Drought monitoring and response systems to include strengthening of the drought watch system, preparation of a national resource profile, training of district officers in drought planning and management, and decentralization of drought response systems. U.S. support was to consist primarily of 46 person months of technical assistance, cartography, satellite imagery, and data processing at a LOP cost of approximately \$655,000. (This activity has been postponed because Botswana is currently fully engaged in dealing with an existing drought condition.)
- Sudan: Establishment of environmental units at three universities, review of environmental conditions and trends in Kordofan and Darfur, monitoring of trends in desertification, and training. U.S. support was to consist primarily of 35 person months of technical assistance, cartography, satellite imagery and data processing at a LOP cost of approximately \$611,000.

In addition, to support these two sets of activities, the PP provided for two representatives to be posted full time overseas. The representative in East Africa was to devote one half of his time to assisting and coordinating the training program, and the other half to working as an advisor to the National Environmental Secretariat in support of the resource management activity in Kenya. The East Africa representative arrived in Kenya in January 1981. The second representative, to be stationed in Abidjan, was intended to perform the training assistance and coordination work in West Africa on a full-time basis. He was not scheduled to be posted during the first year of the project, and he actually arrived in Abidjan in November 1981.

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## II. THE MANAGEMENT HIATUS

There are two interrelated management problems which pervade the ETMA Project.

They are:

- the lack of effective management within the contractor organization and within AID.
- the lack of specific articulated plans which define individual project activities and link them to the project's goals and purposes.

The results have been:

- Project activities which do not contribute meaningfully to the project.
- Project activities which have been less successful than they should have been because of inadequate planning.
- An inability at all levels of project management to effectively evaluate the progress or success of any given project activity or the project as a whole.
- Management by default rather than by decision.

These problems are so severe that, in our judgement, the ETMA project as it is currently being implemented will not achieve its goals and purposes. If the project is to continue it's management and implementation must be redesigned. If this cannot be done, the project should be cancelled.

### The Contractor Organization -

The present contractor organization and its deficiencies stem partly from the origins of the project and partly from the nature of the organization and operations of SECID itself. The decision to name SECID as prime contractor, with the University of North Carolina and Clark University as subcontractors did not bring together equal parties in an arms length contractual relationship.

- By the time SECID became involved, UNC and Clark were well entrenched in East Africa in their respective areas of interest - environmental training

and environmental management. SECID itself (as opposed to its member institutions) had virtually no experience in the subject or the area.

- UNC and Clark were represented at the Dakar meeting in August 1979. SECID was not.
- A Washington based representative of SECID, who was not a professional environmentalist, was a member of the PP preparation committee, but Clark did the bulk of the work.
- The UNC and Clark managers have been associated with the project from the beginning. The SECID project manager was not even hired until several months after the contract was signed.

The potential effect on contractual relationships is obvious, and they are reflected in the contract staffing. UNC has a half time professional manager who is supported by a half time administrative assistant. Clark has five individuals in its project administration structure who work an equivalent of more than three full time person months per month, and are supported by substantial clerical and graduate student assistance. SECID has one professional environmentalist who is responsible for both project management and contract administration, and he has had virtually no assistance. (He prepares the backup data for the invoices, for example.)

The nature of SECID operations is also a factor. All, or almost all, of its past contracts have been ones where long term advisory groups are stationed overseas. In these contracts, management is the responsibility of the team leader in the field. The SECID contract managers in North Carolina have been administrators, whose function has been to provide administrative support for the contract team. We are not being critical, this is a sensible arrangement. But it did not provide a precedent for the continuing, substantive management that the ETMA project requires.

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These background forces are reflected in the contracts themselves. (The contracts are consonant with the management structure in the project paper.) The prime contract states that, in order to achieve the project goal, the contractor will work with and assist African governments, regional African organizations and African educational institutions to develop and carry out the activities for the first two years that are listed in the project paper. It requires that an annual work plan be submitted for AID approval for each of the last three years of the project, but there is no requirement to seek approval for changes in the first two years from the planned activities, and no recognition that this may be necessary. As a result, the first annual report briefly mentions that the short seminars have been virtually abandoned and that the duration of the medium term courses has been cut in half, but it contains no discussion or justification for these major revisions.

Moreover, the organization and management section of the contract formally establishes the unbalanced contractual relationship described above.

- It does not charge SECID with overall responsibility for contract performance.
- It provides for a Contract Management Committee consisting of SECID, UNC and Clark, "to guide SECID in the execution of contract coordination and implementation."
- It assigns responsibility for coordination of the training element to UNC.
- It assigns responsibility for coordination of the resource management element to Clark.
- It assigns only coordination of the long term training element to SECID.
- It provides that the two regional contract representatives stationed in Africa "will be responsible to and receive guidance from the Contract Management Committee," not SECID.

The SECID sub-contracts with UNC and Clark are in keeping with this pattern. They are funding documents, not effective contracts. The entire scopes of work for the two sub-contracts are as follows:

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- (UNC) "The University will be responsible for managing the organization and administration of short seminars and medium length courses for training purposes. The seminars and courses will be tailored to deal with specific country or regional environmental issues."
- (Clark) "The University will be responsible for coordination of the resource management activities, and for integrating training into resource management activities in the four countries initially involved in management. In each of the resource management countries, local steering committees or managing committees have been or will be identified."

Neither sub-contract mentions quantity of work to be accomplished or even the level of effort to be provided. All they contain are a budget broken down into cost components, such as salary, fringe benefits overhead, etc; and administrative provisions for invoicing, record keeping, and similar activities. UNC and Clark are entitled to payment, within the budget limit, provided only that they submit invoices certifying that the costs have been incurred. Whether anything has been accomplished, let alone anything worthwhile, is moot.

Thus, SECID, as the prime contractor, does not have the responsibility, the authority, the tools, or the manpower to effectively manage the contract to see that the project's objectives are achieved. This is compounded by the fact, discussed in the last section of this chapter, that there is presently no effective means for designing or analyzing individual project activities to insure that they will contribute meaningfully to the accomplishment of the project's goals and purposes.

In this situation, the results are hardly surprising. As discussed in Chapter III, we conclude that outputs during the first project year fell far short of planned levels, that inappropriate activities were carried out, and that expenditures were excessive.

that AID's management of the ETMA project has not been adequate. In theory, the AID structure as is true of problems are in execution, and, primarily, in the lack of a the worth of individual project activities.

per assigns overall responsibility for project monitoring to the Regional Affairs (RA), Africa Bureau. Virtually all of the effective nt of the project has come from that office. But the ability of RA is clearly restricted. Management of the \$8.5 million ETMA project is e responsibility for one RA project officer. He is geographically rom the contractors, and, more importantly, from the project activities. compounded by the lack of design documentation which would lend itself to pective analysis of the effectiveness of individual project activities.

project paper charges the respective AID Missions with responsibility for roving the country Memoranda of Understanding which are presently the principal oles for managing project implementation. In our judgement this approval res- onsibility has not been effective from the viewpoint of project management and it has not provided RA with the more detailed field analysis and support that it needs. There are several reasons for this. ETMA is a regional project and thus peripheral to the missions' main areas of interest and activity. Within the mis- sions, responsibility is assigned to the mission environmental officer, often a junior member of the staff or someone for whom the environment is a secondary responsibility. Perhaps the most important reason is the fact that the present Memoranda of Understanding are simply not an effective means of project management.

During project design the REDSO's took the position that they did not have the staff time to assume direct responsibility for managing the ETMA project. As a result, the project paper provided that the Regional AID Environmental Officers, upon request of AFR/RA or the Principal AID Country Officer, would be responsible for reviewing and clearing ETMA country or regional programs; evaluating training programs; and for monitoring resource management programs on an ad hoc basis. In response to an inquiry from REDSO West, RA reaffirmed this decision to not directly involve the REDSO's and charged them with a liaison responsibility instead. As far as we are aware, the Missions have not explicitly exercised this option either, although mission environmental officers have certainly consulted with the Regional Environmental Officers about ETMA activities.

Our judgement that AID has not effectively managed or overseen the project as it is presently being implemented is all the more serious in view of our concomitant judgement that the contractor has not done so either.

#### Control of Project Implementation Activities

The design of the ETMA project was a long and elaborate process. It covered a period of several years of direct involvement by Clark and UNC in environmental activities in East Africa. The resulting project documentation includes environmental profiles on four countries, records of environmental priorities drawn from interviews with 140 individuals in 10 countries, the two original PIDs and the ETMA PID and Project Paper. But the resulting project design is such that it is almost as though this elaborate project planning process obviated the need for further planning or for analytic management of implementation; as though the originally scheduled project activities would proceed without change. These were unreasonable expectations, and they have not occurred.

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Beyond AID/Washington approval of the annual program and budget, the principal means for control of project implementation are the annual individual Memoranda of Understanding between the contractor, the participating government and the sponsoring host country institution. The project paper provides that:

These Memoranda of Understanding will be subject to approval of the respective AID mission director and/or the Director of REDSO. The individual Memoranda of Understanding will provide the following information:

1. Substance - brief description of activity;
2. Level - nature of invitees by responsibility and position; minimum/maximum number of participants;
3. Sponsorship - name of host institution(s); individual in charge; place of training;
4. Timetable - schedule for preparation of training materials; designation of who will be responsible for which materials; date(s) of training; length of activity; preparation of reports;
5. Evaluation - who will be responsible and format;
6. Logistical Details - responsibility for invitations, hotels, transportation, field trips, clerical support, rosters, a-v equipment, etc.;
7. Follow-up - responsibility for next stages including next stage seminar or course, long term training, regional activities, incorporation of course into regular curriculum, discrete environmental activities, etc.
8. Contribution of Local Institution(s) - description of staff time, facilities, transport, and other arrangements which will come from local institutions;
9. Financial Arrangements - agreement on who will provide payment and in what manner including who will prepare accounting and reports for particular disbursements.

In practice these Memoranda have been supplemented by individual working agreements covering each specific training course. The working agreements follow the format of the Memoranda and are intended to serve the same basic purpose. They have evolved because actual courses are often ones that were either not provided

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for in the Memorandum of Understanding or are being conducted with a different sponsoring host country institution.

These two documents share the same strengths and weakness. Their strengths include:

- A commitment by the government and a host country institution, both generally and in terms of a specific contribution to the activity.
- A plan of action, including a definition of what is to be done, when and by whom. This is necessary to insure that the essential actions occur and to avoid later conflict over who is responsible for what.
- A definition of the financial arrangements, a potential trouble spot if left unspecified.

The basic weakness is that the Memoranda of Understanding and working agreements are narrative in nature. They describe what is to be done and how, but not why.

Nor do they identify those elements that are essential to an activity's success.

In short, they lack the basic analytical framework that is the foundation of the AID project preparation process. We believe this is a fatal flaw that must be corrected if the ETMA project is to succeed; that the Memoranda of Understanding and working agreements, or other documentation, must set forth the basic analytic framework for each project activity. As a minimum the framework should include:

- The purpose of the activity. What is it intended to achieve, when, and how will it do so. This should specifically address what African institution will be strengthened by the activity, and how this will come about. (It is not enough to say that the purpose of a course is to train 30 people in environmental planning. The questions are: To train them to what end?; How will this be achieved? and; When and how will the host institution develop the capacity to conduct such training on its own?)
- The priority of the activity. Why does this activity merit the use of limited ETMA resources? (It is anomalous that, having attempted to identify environmental priorities in 10 countries during the project preparation stage, priorities are not even discussed in the implementation stage.)
- The relevance of the activity to the project. Specifically how does it relate to and contribute to the achievement of the project's basic purpose and goals? (Failure to do this has resulted in activities, such as two seminars in Tanzania, that we believe are irrelevant.)

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- The linkage to other project activities. What other ETMA activities does this activity relate to or support, and how and why? (Without the identification of this linkage, at least one activity - a seminar in Sudan - was held for a different purpose than originally intended without anyone associated with the project making a deliberate decision to do so.)
- The follow-up activities that are essential if the activity is to achieve its purpose, and who will be responsible for them. (As a Kenya official said, without the necessary follow-up, "nothing has happened" as a result of the preparation of the district environmental profiles. He suggested that perhaps the number of additional profiles to be prepared in 1982 should be reduced and the savings used to finance follow-up activities. It is precisely this kind of management decision that our proposed analytic framework is intended to facilitate and to force.)

While we believe that such a framework is essential, we do not believe that it needs to be elaborate. We are not proposing a PID and PP for each \$50,000 activity. It should be possible to cover the proposed analytic framework in no more than five pages, usually less. The result would be a document that would make rational management decisions and management oversight possible, within the sub-contractor organizations, at SECID and within AID. This is not possible now. Installation of such a management framework is a prerequisite to the management changes described below. Without the framework the changes will be merely cosmetic.

#### Alternative Management Arrangements

If the ETMA project is to continue, we believe the logical course is to look to SECID for overall project management. There are four reasons for this:

- We are at mid project and SECID is established as the prime contractor. There appears to be little advantage in searching for a new one.
  - Although Clark is responsible for training directly related to resource management, there is an inter-relationship with other ETMA training. There should be a coherent ETMA approach to a given country and the alternative of separate direct contracts with UNC and Clark will not provide it.
  - The resident regional representatives should report to one boss on training coordination matters.
  - Separate contracts with Clark and UNC would place an undue management burden on AID.
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If SECID is to manage the project effectively there are two basic things which need to be done:

- Staff SECID to do the job. This need not add significantly to what is already an extremely high level of project overhead costs. We believe that effective overall project management could be accomplished by one full time professional who has adequate administrative and clerical support. Indeed, there would be no additional cost if the present sub-contract with UNC is not extended. We can see little justification for SECID sub-contracting with one of its member institutions. As a training course is identified it should be jobbed out to the member institution best qualified to handle it. (The possibility of a diminution in UNC's role was postulated in the project paper.)
- Place SECID in charge and hold it accountable. The contract should be rewritten to make SECID directly responsible for the success of the project and to give it the authority to do so. The regional representatives in Africa should report to SECID, not to the Management Committee, and the Management Committee should advise SECID, not "guide" it. Coordination of training should be assigned to SECID and coordination of the environmental resource management component should be assigned to Clark, but clearly under SECID's overall management and control. The sub-contract with Clark should be rewritten to charge Clark with accomplishing specific tasks and to assign resources to those tasks. Stricter reporting requirements on accomplishments should be imposed and invoice payments should be based on the work done, not the amount of money spent. (If this had been done originally, we believe that the resources originally intended for Botswana would not have been diverted when that program fell through.)

The actions needed to strengthen AID management are simple. AID has the necessary structure and it's responsibility is to oversee the contractor, not to directly manage the implementation of the project. AFR/RA should continue to have overall responsibility for project monitoring. To assist RA, the Missions should be specifically charged with review of proposed ETMA activities to insure that they meet minimum standards in terms of such things as priority, relevance to the project and African participation. These should be specified and the AID Principal Officers should be informed that their signature on memoranda of understanding and working agreements certifies that these standards have been met. This should not place an undue burden on the Missions if they have an analytic framework to review. The number of ETMA activities in any one country will be relatively few in number - perhaps three or four documents a year.

We would not assign management responsibility to the Regional Environmental Officers. We are persuaded that they are fully occupied and that this would come at the expense of providing assistance to the Missions. Their role should be to provide assistance and advice on ETMA activities, on request, just as they do now for direct Mission activities.

#### The role of the Regional Coordinators

We take the basic role of the regional coordinators as given. Someone must organize project activities, especially training, and at least start the process of putting them in place. The question is whether this can better be done by coordinators stationed in Africa or from the United States.

While we have not done a precise cost analysis, it seems certain that the cheapest way to do this would be from the U.S. Per diem allowances would be the same, and the extra travel costs would be more than offset by the savings in such things as the cost of living, post and education allowances.

Since it would be cheaper, the question is from where the responsibility for coordinating and assisting the training program might best be done. The issues are:

- Does a resident coordinator have better local knowledge than someone coming in from the U.S.? Yes but only marginally so. A person stationed in Nairobi has a very limited outside perception of what is happening in the Sudan.
- Will there be continuity? This is crucial. Visitors from the U.S. can only be successful in developing new activities if they visit the same institutions repeatedly. Someone has to work the beat.

We are convinced that the half time of the East Africa coordinator that is spent working with the NES is one of the most productive ETMA activities to date. This dictates the extension of this position. It should be continued, and the replace-

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ment for the present incumbent should be selected on the basis of his ability to do the advisory job. This must be reconciled with the person's responsibility as a coordinator (and thus a manager) of the project's activities. Our proposed solution is that the choice be ultimately up to SECID and that, contractually, the replacement report to SECID.

If the decision on the East African coordinator is proscribed, the continuation of the West African coordinator is in doubt. If persons can be found who will assume the role of coordinator for a given group of ETMA countries in West Africa, then the current coordinator should not be replaced. But the "if" above is critical: Operating without a resident coordinator absolutely requires replacements who are committed to doing the job by travelling from the U.S., and doing it for several years.

#### The Role of the Steering Committee

The role of the Steering Committee was an issue at the Committee's recent meeting in Nairobi. Because of difficulties in arranging meetings and minimal African attendance at the last two that have been held, the group concluded that the committee as a whole should meet perhaps only one more time, near the end of the project. As an alternative, Regional Steering Committees were proposed, with the African representatives being primarily persons associated with the project. The question is whether such a group can provide sufficiently independent direction and guidance to the training component to be worthwhile. We are skeptical. While we are not adamant about it, given the past experience we doubt that future general or regional steering committee meetings will be worth the cost. They certainly will not be if African participation does not increase. In any case they are no substitute for aggressive line management of the project.

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### The Overall Project Alternatives

Given all of the above, there are three apparent overall alternatives for the future of the ETMA project:

- The first alternative is to cancel the project. The main advantages of this are that it would be relatively simple and overall savings in project costs would be considerable. It would also clear the decks for the creation of a new re-designed successor project with similar objectives. But we are virtually certain that this would not happen. Our overriding concern is that cancellation would eliminate the possibility of achieving the present project's goals and purposes, which we believe are clearly worth striving for. Our reasons for this are set forth in Chapter III. In short, they are: the pressing nature of environmental problems in Africa and the fact that ETMA is addressing those problems at a level and perspective not generally found elsewhere in AID.
- The second alternative is to continue the project with a sharply reduced set of activities. Likely candidates for continuation would be the resource management work with the Institute for Environmental Studies in Khartoum, the National Environmental Secretariat in Nairobi, and possibly the Bureau for Resource Allocation and Land Use Planning in Dar-es-Salaam; future work with the Forestry/Ecology Unit of CILSS in Ouagadougou; and directly related training. The project might then be reduced to a single direct contract with Clark. There would be the possibility of new follow-on projects, but again, we think this unlikely. The main advantage of this alternative is that, by focussing on a limited set of activities that are progressing well, it enhances the chance of success; or rather, reduces the risk of failure. The limited set of activities would require that an analytic framework be designed and put to use, and considerable pre-project and in-project preparatory work would have been wasted. (The work of the West African Representative, for example.) And we would be settling for something less than the desirable original objectives of the project.
- The third alternative is to continue the project with a restructured management and management system. This alternative offers a reasonable prospect of achieving all or most of the original project's goals and purposes. There is a risk that this will not happen; that the proposed analytic framework will not be as effective as we think it will, or that SECID cannot become an effective manager. We believe these risks are small enough to be acceptable. There is also the effort involved in re-design. But we are proposing re-design of the management of project implementation, not the project as a whole. And once the design has been prepared, installing it is primarily a contractual effort. It is our judgement that the project's ends justify the effort to create the means.

### Life of Project Costs

At this stage we cannot forecast life of project costs, but it appears likely that they will fall short of the originally projected \$8.5 million. There has already

been considerable project slippage, and re-design will cause more. With more restricted activity criteria, the number of activities, already obviously hard to set into motion, will probably be reduced. This does not trouble us. We favor a lesser number of well-planned activities over a larger number that are not well designed.

### III. PROGRESS TO DATE

#### General

Although the project officially started on 1 October 1980, project management and reporting treats the period 1 October 1980 through 31 December 1981 as the first project year. This arrangement, which was agreed to with AFR/RA, matches project planning more nearly with the timing of fund availabilities. For comparison purposes the first project year has been compared with the planned activities for the first two fiscal years - a sixteen month period. We have followed this practice in this evaluation, recognizing that it slightly understates first year accomplishments and slightly overstates planned first year inputs and outputs.

#### Environmental Training

Table 1 shows planned vs. actual outputs of the environmental training element of the project for the first project year and for the first five months of the second project year. Table 2 shows planned vs. actual inputs and outputs for the medium course part of the training - the only significant training activity during the first project year. A review of these tables shows that the environmental training element to date has been characterized by:

- Major changes in the structure of the training.
- A slow start and consequent slippage in planned training activities.
- Resultant increased unit costs.

TABLE 1

Environmental Training Activities-Planned vs. Actual Outputs

PROJECT YEAR 1

|                                  | <u>Planned</u>       |                            | <u>Actual</u>                         | <u>Actual as Percent of Plan</u> |                            |
|----------------------------------|----------------------|----------------------------|---------------------------------------|----------------------------------|----------------------------|
|                                  | <u>Project Paper</u> | <u>June 1981 Work Plan</u> | <u>(Oct.1, 1980 to Dec. 31, 1981)</u> | <u>Project Paper</u>             | <u>June 1981 Work Plan</u> |
| <u>COURSES CONDUCTED</u>         |                      |                            |                                       |                                  |                            |
| Short Seminars                   | 13                   | 4                          | 0                                     | 0                                | 0                          |
| Medium Courses                   | 5                    | 6                          | 4                                     | 80                               | 67                         |
| <u>INDIVIDUALS TRAINED</u>       |                      |                            |                                       |                                  |                            |
| Short Seminars                   | 130                  | 120                        | 0                                     | 0                                | 0                          |
| Medium Courses                   | 150                  | 180                        | 126                                   | 84                               | 70                         |
| Long-Term Training               | 15                   | 15                         | 1                                     | 7                                | 7                          |
| <u>INSTITUTIONS STRENGTHENED</u> |                      |                            |                                       |                                  |                            |
| Short Seminars                   | 13                   | 4                          | 0                                     | 0                                | 0                          |
| Medium Courses                   | 5                    | 6                          | 4                                     | 80                               | 67                         |
| Long-Term Training               | 3                    | 2                          | 1                                     | 33                               | 50                         |

PROJECT YEAR 2

|                                  | <u>Planned</u>       |                            |                            | <u>Actual</u>   | <u>Actual as Percent of Jan. 1982 Work Plan</u> |
|----------------------------------|----------------------|----------------------------|----------------------------|-----------------|---|
|                                  | <u>Project Paper</u> | <u>June 1981 Work Plan</u> | <u>Jan. 1982 Work Plan</u> | <u>Thru May</u> | <u>Thru May</u>                                 |
| <u>COURSES CONDUCTED</u>         |                      |                            |                            |                 |   |
| Short Seminars                   | 4                    | 10                         | 3                          | 1               | 67  |
| Medium Courses                   | 8                    | 10                         | 10                         | 1               | 10  |
| <u>INDIVIDUALS TRAINED</u>       |                      |                            |                            |                 |   |
| Short Seminars                   | 120                  | 300                        | 90                         | 120             | 133   |
| Medium Courses                   | 240                  | 300                        | 300                        | 28              | 9   |
| Long-Term Training               | 30                   | 30                         | 30                         | 4               | 13  |
| <u>INSTITUTIONS STRENGTHENED</u> |                      |                            |                            |                 |   |
| Short Seminars                   | 4                    | 10                         | 3                          | 2               | 67  |
| Medium Courses                   | 8                    | 10                         | 10                         | 1               | 10  |
| Long-Term Training               | 5                    | 5                          | 5                          | 3               | 60  |

Sources: Project Paper  
 Project Year One Annual Report  
 Project Work Plan Jan. 1 - Dec. 31, 1982  
 Field Data

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TABLE 2

Environmental Training - Medium Courses - Planned vs. Actual  
First Year (Oct. 1, 1980 - Dec. 31, 1981)

|                       | <u>Planned<br/>Project Paper</u> | <u>Actual</u> | <u>Actual as %<br/>of Planned</u> |
|-----------------------|----------------------------------|---------------|-----------------------------------|
| Courses Conducted     | 5                                | 4             | 80                                |
| Individuals Trained   | 150                              | 126           | 84                                |
| Course Weeks          | 25                               | 10            | 40                                |
| Trainee Weeks         | 750                              | 348           | 46                                |
| Cost Per Trainee Week | \$418.0                          | \$601.4       | 144                               |
| Faculty Man Months    | 25.7                             | 13.3*         | 52                                |

\*Adjusted from annual report based on data supplied by Clark

Sources: Project Paper, and Project Year One Annual Report.

Two Structural Changes have taken place. The first, which is obvious in Table 1, is the major reduction in planned and actual short seminars. These seminars - intended to sensitize policy level government officials on major environmental problems, issues and solutions - were a central element in the original project plan. They constituted 21 of the 49 seminars planned and 33% of the training costs. Thirteen were scheduled for the first year, but none were conducted. Four were scheduled during the second project year and two have been conducted through May. They are discussed in the section titled Short Term Seminars, below.

The reduction in short-term seminars results in part from the difficulty of finding an appropriate sponsor, and of getting the appropriate number and mix of policy level officials to attend. It also results partly from the perception by host country and ETMA personnel that policy level officials in some countries are already sensitized to overall environmental problems. Because of this, it seems unlikely that the original number of seminars will or should be held. Moreover, given the relatively high cost of this type of training, we believe that future seminars should meet strict tests in terms of need, potential benefits and planned follow-up.

The second structural change that has occurred is a basic change in duration of the medium term courses, from a planned 4 to 6 weeks to a 2 to 3 weeks duration. The five medium term courses held to date are discussed in the section titled Medium Term Courses, below.

Outputs of these courses in terms of persons trained still leaves the basic question of, so what? What will happen in terms of changed job performance or effective environmental work as a result of the training? If nothing happens the training will have largely been a waste. There appears to have been little

consideration given to this question in the design of the courses or potential follow-up action.

Each course has had an evaluation element built into it. This is a commendable practice that should be continued, particularly to provide information to improve the design and conduct of subsequent courses. We have reviewed these evaluations and have drawn on them, but they cannot assess the future impact of a given course on a participant, other than his or her judgement as to the future utility or practicality of the course. We interviewed government officials and past course participants\* in an effort to assess this longer term effect of the training. The consensus was that the long term effect is probably very limited. We found two clear exceptions to this. One was a plant manager who got a practical answer to an important operating problem. The second was a young official in Kenya's Ministry of Water Development whose supervisor was involved in the course. He stated, with concrete examples, that he had been given new responsibilities that he would not have had if he had not received the training. This bears directly on the problem most frequently cited, that middle level personnel were unlikely to be able to utilize their training if their bosses or their peers (on a planning committee, for example) had not been similarly exposed. As one participant put it, "the course gave me new ideas, but my boss turned them down".

One approach to this problem may be that proposed for West Africa, where supervisors will be involved in the closing sessions of the course. In any case, we are convinced that the potential long range utility of the training must receive much more serious attention in the planning of future ETMA training efforts.

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\*For logistic reasons we were only able to contact former participants in Kenya.

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The slow start in project activities is clearly reflected in Table 1. The Annual Report states that the slow start was due to a delay in starting the project and a reduction in the first year funding level. The delayed start was a factor, but the reduced funding level seems to have played little part. Expenditures for the first 15 months have totalled \$894,106. This compares with funds obligated and thus available totaling \$1,408,000 as of November 1980, and \$1,788,000 by June 1981.

The actual reasons for the slow start appear to be:

- The problems in setting up short-term seminars cited above.
- Delays in the posting of the permanent representatives in East and West Africa.
- The unstructured management style of the project, in which seminar identification has been more a product of personal relationships than a planned activity.

We believe that the short seminars are not likely to reach their planned levels, even over the life of the project. While medium term courses, in terms of numbers of courses, nearly met the first year target, the numbers are running behind this year. Only one course out of a planned 10 has been conducted during the first five months of the year. Twelve additional courses are in varying stages of planning or consideration. But, given the lead times involved, we doubt that the second year's planned output of 10 courses will be achieved.

Long-term training was planned at a very low level during the first project year, but it has not accelerated in the second year, as expected. At the end of five months only four persons out of a planned 30 were actually in long-term training. This reflects the inherent difficulty in identifying the right individuals in terms of training needs, future employment in appropriate organizations, and available training opportunities. In the present unstructured project approach,

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long-term training is likely to fall short of the life of project goals. Even if a more structured approach can be found, we doubt that the goals will be met. (We have noted at least one instance where project funds are to be used to send a highly qualified government official to the U.S. for training. We question whether such training is in keeping with original project purposes for long term training.)

The resultant increased training costs for medium term courses can be seen in part in Table 2. During the first project year, the percent of funds spent against planned costs compared favorably with the percent of courses completed and individuals trained. However, this masks the reduction in the length of the training courses. The percentages of course weeks and training weeks are significantly below the rate of expenditure. As a result, the actual cost per trainee week is 144% of that originally planned. And, costs per week were a specific issue in the project paper. (If the UNC water seminar, with its high number of participants, is excluded, the cost for the three remaining seminars was \$893, per student week, more than twice the originally planned cost.)

But these are only direct training costs. If overhead costs are added the picture becomes much worse. During the first project year, overhead costs at UNC, which is engaged solely in training, totaled \$73,767. This is 76% of the direct costs of the two seminars UNC conducted. Some of these overhead costs can properly be attributed to planning and preparation for courses in the second project year. But even if allowance is made for this, the rate is unacceptably high. A similar comparison is more difficult to make for Clark, because reports do not disaggregate overhead costs between training and resource management. If such a disaggregation were made we would expect the ratio of overhead to training at Clark to be more favorable, but still very high.

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### The Short Term Seminars to Date

Although short term seminars have been sharply reduced in number, they can make a useful contribution to the objective of the project, provided that:

- The main result is a more comprehensive understanding of the trade-offs between development and conservation - i.e. more rational management of existing or potential natural resources.
- They catalyze the determination of environmental priorities and a commitment by decision makers to them and toward more rational resource management.
- -They are followed up.

The two short term seminars held to date do not precisely meet these provisions, but we judge them to have been productive ETMA activities. They are:

1. A three day seminar on Energy and Environmental Management in Somalia attended by approximately 70 persons from Somalia, the U.S. and International Organizations. (Cost not available.)

The principal immediate product of this seminar is a 19 page paper identifying priority problems and recommendations for follow-up action. Although the list suffers from length - it is more a laundry list of problems and potential actions than an identification of priorities - it is a productive first step in turbulent Somalia. We have been advised that a shorter priority list is being distilled from the initial one to be forwarded to the President. If this happens it will be an excellent example of the type of follow-up that we consider essential.

An unplanned, but very positive, result of this seminar has been provided to us by an informed outside African observer. He states categorically that many of the attendees at the seminar, both Somalians and expatriats became aware for the first time of development activities in Somalia that duplicated or overlapped work that they were doing. It was his judgement that the seminar was justified even if this was its only accomplishment. We tend to agree.

We should also note that this was apparently a relatively low cost activity for ETMA. Because of an accident, the direct ETMA participation in Somalia was handled by the regional coordinator. But even if one person had come out from the U.S., as originally planned, the cost would have been commensurate with the results.

2. A four day seminar on Environmental Enhancement and Resource Management in the Eastern Province of Kenya attended by approximately 50 persons from Kenya. (There were 74 people on the final roster including 42 from outside Nairobi.) February 1982. The attendees included representatives from

six District Commissioners' offices for whom it provided an opportunity for district people to compare successes. Ministry people from Nairobi also attended.

This was a valuable first step in creating awareness and dialogue between agents and officials from different fields. However, it should be followed up by NES through either additional meetings, (if the District Commissioners have other occasions to get together with the regional and district staffs, that would be an excellent opportunity to reserve a couple of hours to talk about specific environmental issues or cases) or some sort of nation-wide bulletin out of NES to programmers and administrators.

Eventually, another Region could be organized the same way: first a seminar of this kind, followed up by creating a network.

There is however, some question as to why the University of Tennessee, rather than Clark with its extensive experience in Kenya, was chosen to conduct this seminar. It appears to have been the result of an arbitrary division of work rather than the selection of the best qualified university on a case by case basis.

#### The Medium Term Courses to Date

There are two general observations about the five medium term courses that have been conducted to date.

The first is relatively negative. The courses suffer, to varying degrees, from the lack of management structure discussed in Chapter II. In the words of one ETMA official, they have been "targets of opportunity". In other words, seminars have been held whenever an African institution could be found that wanted to sponsor a course concerned with the environment. The result has been two courses which we believe should not have been held, and, with better planning the other three could have been better. Better meaning that they were worthwhile.

The second observation is definitely positive. The seminars to date have been characterized by a heavy African involvement. In four of the five courses, Africans have been appointed as Course Directors. In four of the five, Africans have carried a major share of the teaching load. In the water quality seminar in

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Kenya, for example, over half of the teaching was done by Africans. This is not chance. It is the result of deliberate efforts on the part of ETMA personnel, and it goes to the heart of the goals of the project. We applaud the intent and accomplishment of this effort, and believe it could be enhanced. More of the funds used for preparation of course materials could be used to pay Africans to develop specific country case studies. The mix of the course materials to date has been too much general materials, and not enough of the local case studies postulated in the project paper. We also believe that U.S. course instructors should be given more preparatory time in country. The time should come from the total time allowed for course preparation, but extra per diem costs may be involved. If so, we think they will be justified.

The five medium term courses held to date, and our assessment of them are as follows:

1. A two week course on "Heavy Metals and Pesticides in the Environment," conducted by UNC and the Tanzanian Government Chemical Laboratory in Dar-es-Salaam. Twenty-seven participants from 6 countries. Costs: \$2,100 per student, \$1,050 per student week. March 1981.

The issues here are ones of relevancy:

- How much can a two week effort of skill upgrading of 20 laboratory technicians contribute to strengthened institutions? The pre-existing problems of inadequately maintained equipment and limited operating and maintenance funds are likely to remain bottlenecks in spite of improved skill levels.
- How important is the general problem of heavy metal and pesticide pollution in the overall spectrum of major environmental problems in Africa? The pre-project survey of 10 countries produced some 450 separate identifications of priority environmental problems. In this list, pesticides are mentioned only seven times and heavy metals do not appear even once.
- Assuming pesticides are a problem, is the training of laboratory technicians the best place to start?

Experience everywhere (not just in Africa) has shown that management of chemicals is a prerequisite to all other precautionary measures. That is: obtain, store and use only as much as needed; control transport, storage, distribution and application to insure that the chemicals do not reach uninformed or anti-social hands; and, ideally, be sure that emergency procedures and equipment are available to promptly reduce damage to a minimum if something goes wrong.

The sequence of attention thus should be: Education of the potential users, the government, and the general public; proper handling; and then monitoring.

Thus, we question whether this seminar addressed an environmental problem of reasonable priority in Tanzania. If it did, it addressed the problem at the wrong level, even if Tanzania had a pesticide monitoring program - and it does not. We believe this is a clear case of an unplanned target of opportunity which turned out to be the wrong target.

2. A two week course on "Environmental Considerations in Regional Planning", conducted by Clark and the Bureau of Resource Assessment and Land Use Planning (BRALUP) in Dar-es-Salaam. Twenty-seven participants, primarily district planning officers, from Tanzania. Costs: \$2,300 per student, \$1,150 per student week. November 1981.

The course was implemented by BRALUP. A very informative and meaningful evaluation report was prepared by a representative from the office of the Vice-President. Follow-up interviews were scheduled for April 1982. The course was conducted at the written request of the Office of the Prime Minister.

Emphasis was placed on analysis of significant environmental issues, data needed for planning decisions and presentation of integrative planning techniques, including environmental considerations.

A mixture of lectures, discussion groups and field trips were provided.

On the whole, this is one of the more meaningful and successful ETMA activities carried out so far, but there are some improvements that might be made in future:

- We agree with the evaluation that a greater participant mix might more effectively spread the message on environmental concerns. Ideally, each group should combine planning officers (the present target group) with representatives from other government technical and administrative services as well as politicians. In fairness however, the attendees were those designated by the Prime Minister's office, not ETMA.
- Using pertinent and above all local examples and exercises should be stressed more. Participants could be asked, in preparing for the course, to bring files and records of work-problems with them to the course, for example.

The seminar has proven it's potential as a mechanism to bring about a common perception, to serve as a forum for ideas and exchange, and as an opportunity to bring together representatives from different sections and departments to deal with environmental concerns more effectively and on a wider inter-disciplinary basis.

3. A three week course on "Water Supply and Water Pollution Control", conducted by UNC and the National Environmental Secretariat (NES) in Nairobi. Fifty participants from Kenya, two from Tanzania. Costs: \$850 per student, \$283 per student week. July-August 1981.

Most participants were technicians from the Ministry of Water Development. Others were from the Office of the Government Chemist, the NES, and the Nairobi City Council.

The course's impact was to provide a forum for exchange of views and exploring environmental problems on a multi-disciplinary basis. The course stimulated awareness and generated some understanding of problems related to water quality, pollution, and waste water treatment (largely connected to urban or industrial, as opposed to rural development).

Reviewing the relevance of the subject matter, it should be kept in mind that though rural by location and dispersion, agricultural based processing facilities (coffee, hides, etc.) have been installed throughout intensively farmed areas. Pollution from these sources, though industrial by nature, is beginning to become region wide in some parts of the country.

As noted earlier, this seminar directly benefitted some attendees in terms of improved job performance. There are also benefits from introducing participants to a multi-disciplinary approach to problems.

4. A three week course on the "Environmental Impact of Development," conducted by Clark and the Institute of Environmental Studies (IES) in Khartoum. Twenty-five participants from the Sudan and one each from Botswana and Somalia. Costs: \$1,900 per student, \$950 per student week.

Attendees were managers from ministries, regional or district government offices, para-statal organizations, and educational institutions. The course was divided into four sections: An overview into environmental problems and relations was presented at the beginning; impact evaluation methods and procedures, including classroom exercises followed; and special techniques for environmental assessments were covered. The remaining eight days focussed on a problem solving exercise.

A three day field trip was included, reports were prepared by small task groups. The seminar evaluation conducted at the end of the course indicates that objectives were reached, the subject matter was relevant and new ways of analysing and resolving problems were presented effectively.

Our own inquiry revealed that the most novel and the most meaningful aspect was the introduction of a broad-based, multi-disciplinary approach

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to analysing and resolving environmental problems. The idea that environmental problems must be treated by different technical and administrative services together is a concept new and different to most participants and beyond the limits most government agents and officials have been used to and comfortable with so far.

Relevancy: Important resource management and training aspects were included. The course lent itself well to identification of environmental priorities, collection of necessary data such as field information, acquisition of existing data, supplemental information from satellite imagery, etc.

5. A two week course on "Environmental Protection in Low Cost Urban Sanitation" (in fact on ventilated improved pit latrines) conducted by UNC and the Ministry of Lands, Housing and Urban Development (ARDHI) in Dar-es-Salaam. Approximately 28 participants from Tanzania. Costs: not available. April-May 1982. (Major impetus for the seminar came from the World Bank.)

This is the course we observed directly. In our judgement the course, which was beset with other problems, is outside the purpose of the ETMA project. Nor does it fit the course themes listed in the project paper. Except in the most picayune sense, it is not concerned with the environmental aspects of urban development, and it certainly does not deal with rural health. It should never have been conducted by ETMA.

The level of training was also inappropriate for ETMA. The majority of the participants were first year college students being trained to promote the installation of VIP latrines in two squatter areas in Dar-es-Salaam. No effort to create an African training capability was discernible.

In our judgement the course had the following additional problems:

- A sanitary engineer should not have been sent from the U.S. The ARDHI Institute and the company consulting on this project both have professional expatriate engineers versed in the country and the project.
- Course management was sub-standard. The U.S. input was ill defined and it was managed too loosely. Appointing a UNDP expatriate as Course Director raises serious questions about the intent to build African institutions. The training plan was vague and not adhered to. The field visit to the project site largely excluded the students.
- There is a serious question about the latrine design that the course is intended to promote. The design would cost the equivalent of a year's income for 1/3 of the squatters who are to be persuaded to install it.

One very positive note was the inclusion in the ETMA group of a specialist in VIP latrines from Zimbabwe. This kind of cross fertilization is a very positive part of many ETMA activities. In this case it was especially so because Zimbabwe's VIP latrine technology is more appropriate than that proposed for Tanzania. (About 1/10 the cost.)

### Resource Management

As noted earlier, the resource management of the ETMA project in the initial years was to consist of relatively discrete technical assistance activities in four countries: Sudan, Tanzania, Kenya and Botswana. Outputs for these are difficult to quantify and lend themselves more readily to narrative description. However, the project paper did attempt to quantify outputs by country. A few are specific, such as the completion of 25 district environmental profiles in Kenya. Most are broader and more qualitative, such as "strengthened capability of the Environmental Studies Unit at the University of Khartoum in the applied aspects of environmental analysis and evaluation." For Sudan, Tanzania and Kenya, the PP listed 15 life of project resource management outputs, four of which were to occur in the first project year. None of the four objectives has been wholly achieved, and one has shown almost no progress. The most nearly accomplished is the completion of district profiles in Kenya. Six were scheduled for the first project year. By December 31, four had been completed and data gathering had been finished on two more.

This assessment of progress is necessarily subjective. One expected Tanzanian output was the planning version of a tested program for the incorporation of environmental health design principles into village planning and village operation. A plan has been prepared, but it was done in cooperation with a PVO project that has been cancelled. Tanzanian government participation was so minimal that the plan will apparently not be used in its present form. We do not believe this can be judged as an accomplished output in the context of the project purposes and goals. (Consideration is now being given to conversion of this plan to a semi-urban plan. This activity should not be undertaken without a firm host country involvement and commitment and the decision that departing from rural health is justified.)

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In addition to the outputs planned for the first project year, there has been progress toward outputs which are scheduled for completion in later years. This progress is very difficult to judge and impossible to quantify. An example is the projected output of an established working relationship between the Kenya National Environmental Secretariat and other ministries. Clark faculty time has been devoted to this, but it is impossible to judge progress in the absence of a plan which would lead to the achievement of the objective.

The lag in project outputs in resource management is in part an inherent risk in any institution building activity. But inputs have not lagged significantly and the gap between inputs and outputs in resource management parallels that in training. Table 3 shows planned and actual person months of professional technical assistance for resource management for the first project year. The the total is only 64% of the planned level, but the result is skewed by the fact that there was no resource management activity in Botswana during the first project year. If Botswana is excluded, actual professional months were 145% of planned levels. It is this level of input that must be measured against our assesement that outputs have fallen below planned levels. In the absence of adequate management and activity planning, there is a real danger that the inputs represent a level of effort, rather than rational resource allocation.

This impression of a level of effort is supported by an analysis of the personnel costs for resource management. Table 4 compares planned and actual personnel costs for the first project year. While overhead costs were essentially at planned levels, they may be understated. During the first eight months of the project, overhead personnel costs averaged \$6,000 per month. During the next eight months they averaged \$1,870 per month. The difference does not reflect a change in

TABLE 3

Planned vs. Actual Professional Months - Resource Management

| <u>COUNTRY ACTIVITY</u>   | <u>PLANNED<br/>PROJECT PAPER</u> | <u>ACTUAL</u> | <u>DIFFERENCE</u> | <u>ACTUAL AS %<br/>OF PLANNED</u> |
|---|----------------------------------|---------------|-------------------|-----------------------------------|
| <u>BOTSWANA</u>   |                                  |               |                   |                                   |
| Core Staff  | 7                                | 0             | -7                |                                   |
| District Data System  | 6                                | 0             | -6                |                                   |
| Research Coordinators   | 0                                | 0             | 0                 |                                   |
| Short-Term Assistance   | 2                                | 0             | -2                |                                   |
| TOTAL   | <u>15</u>                        | <u>0</u>      | <u>-15</u>        | -100%                             |
| <u>KENYA</u>  |                                  |               |                   |                                   |
| Land Degradation  | 1                                | 3             | +2                |                                   |
| Short-Term District<br>Profiles and National<br>Resource Planning | 3                                | 8             | +5                |                                   |
| TOTAL   | <u>4</u>                         | <u>11</u>     | <u>+7</u>         | 275%                              |
| <u>SUDAN</u>  |                                  |               |                   |                                   |
| Core Staff  | 6                                | 5             | -1                |                                   |
| Assessment:<br>Kordofan<br>Darfur                                 | 1                                | 3             | +2                |                                   |
| Technical Support   | 1                                | 3             | +2                |                                   |
| TOTAL   | <u>8</u>                         | <u>11</u>     | <u>+3</u>         | 138%                              |
| <u>TANZANIA</u>   |                                  |               |                   |                                   |
| Project Director  | 5                                | 2             | -3                |                                   |
| Information System  | 1                                | 3             | +2                |                                   |
| Environmental Monitoring  | 2                                | 0             | -2                |                                   |
| Short-Term Assistance   | 0                                | 2             | +2                |                                   |
| TOTAL   | <u>8</u>                         | <u>7</u>      | <u>-1</u>         | 88%                               |
| <hr/>   |                                  |               |                   |                                   |
| GRAND TOTAL   | 35                               | 29            | -6                | 64%                               |
| <hr/>   |                                  |               |                   |                                   |
| TOTAL EXCLUDING BOTSWANA  | 20                               | 29            | +9                | 145%                              |

TABLE 4

Planned vs. Actual Personnel Costs - Resource Management  
First Project Year(\$000)

|  | Planned<br>Project<br>Paper | Actual       |             |              | Actual<br>as % of<br>Planned | % of<br>Actual<br>Overseas |
|--|-----------------------------|--------------|-------------|--------------|------------------------------|----------------------------|
|  |                             | U.S.         | Overseas    | Total        |                              |                            |
| Overhead                               | 122.8                       | 127.4        | -           | 127.4        | 104                          | 0                          |
| Nairobi Advisor                        | 39.0                        | -            | 33.6        | 33.6         | 86                           | 100                        |
| Resource-Management                    |                             |              |             |              |                              |                            |
| U.S. Personnel                         | na                          | 114.9        | 51.4        | 166.3        | na                           | 31                         |
| Foreign Personnel                      | na                          | -            | 25.6        | 25.6         | na                           | 100                        |
| Total                                  | 218.6                       | 114.9        | 77.0        | 191.9        | 88                           | 40                         |
| (Resource Management<br>less Botswana) | <u>126.6</u>                | <u>114.9</u> | <u>77.0</u> | <u>191.0</u> | <u>152</u>                   | <u>40</u>                  |
| Total                                  | 380.4                       | 242.3        | 110.6       | 353.9        | 93                           | 31                         |
| Total Less Botswana                    | 288.4                       | 242.3        | 110.6       | 352.9        | 122                          | 31                         |
| Total U.S. Personnel<br>only           | na                          | 242.3        | 85.0        | 327.3        | na                           | 26                         |

- Notes: 1. Personnel Costs = Salary and fringe benefits and overhead  
2. Project Paper projected costs for personnel overseas calculated at \$6,000 per man month.

Sources: Clark University December, 1981 invoice to SECID  
Consultants' estimates (for overseas costs)

overhead activity, but rather a cosmetic shift of certain personnel costs from overhead to the resource management category. True overhead costs are probably somewhere between the two averages, since managerial personnel spend at least part of their time on direct, as opposed to supervisory, project work. In any case, overhead personnel costs are very high - 39% of total U.S. personnel costs-according to Clark's reporting, higher if you accept our estimate.

First year personnel costs also appear to be disproportionate to accomplishments.

Total actual costs were 93% of planned levels, 122% if Botswana is excluded. This disproportionate relationship of costs to accomplishments lends importance to the issue of where the personnel costs were incurred. As Table 4 shows, only 26% of the total resource management costs for U.S. personnel were for services performed overseas. (The figure is 18% if the resident advisor in Kenya is excluded.) We do not believe that this ratio of 3 dollars spent in the U.S. for every dollar spent overseas is consistent with the project's goal of strengthening African institutions.

Our doubt about the relevance of so much work being done in the United States was reinforced by a review of a sample of resource management documents that had been prepared at Clark. In many instances, they appeared to be academic and detached from reality - a graduate student's paper recommending major organizational changes in the Kenya Government, for example. In other instances they are based on secondary sources so out of date as to be useless - for example, a paper on rural environmental conditions in the Dodoma region of Tanzania contains a table of health units in the region as of 1967. (Compare this with the PP statement that, "local data must be up-to-date and reflect the nuances of recent revisions in national priorities". This is an example of work that should have been done

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by an African professional. The information would have been more timely, accurate and useful, and the basic institution building purpose would have been better served.

There are other examples of resource management activities conducted partly in the U.S. and partly overseas, where the African involvement is so limited that they are likely to have little effect. The Tanzanian rural health activity is one, the preparation of a computer display for use at regional agriculture fairs in Kenya is another. There are other examples, but the basic point is that, without specific plans linking individual activities to the project and stating expected outcomes, the activities are likely to make a minor contribution to the project's goals and purposes. As a general rule, we believe project activity in the U.S. should be reduced to the minimum and that research in the U.S. should have to be explicitly justified.

#### A General Approach to Resource Management

Environmental concerns can be factored into future development activities only if we know what the situation is - where the crucial areas are, what the major problem is, etc. Concerns have been expressed - in general terms - over and over. We know that the general situation is serious. What is needed now is specific information pinpointing actual conditions and practical solutions. Three levels of information are involved:

- Basic data: Soils, rainfall, vegetation types data on population, livestock numbers, areas under cultivation and demographic data.
- Resource pressure (level of resource use): Resource use-patterns: Grazing and farming pressures, extent and reasons of use (or overuse), farm land, energy (fire wood), range land, etc. This can be done effectively with a series of maps and overlays. It would be most practical on a district or provincial level.

- Priority identification: Where are the hot spots? What are the basic problems? Most problems of underdevelopment in Africa can be regarded as being of an environmental nature. The problem is that people get lost by the fact that everything depends on everything else. The need is to establish a logical, ready-to-use list of first things first. Whatever the product, it must be targeted and packaged toward the decision-makers (the politicians, planners and programmers - host-country as well as donors). These people seldom have a technical, scientific background. Therefore the end product must be presented in basic, relevant terms, ready to use.

Region by region or country by country the first, basic need is information clearly describing:

- What are the most urgent environmental problems? Examples are: soil erosion, decrease of fertility of traditional farm soils, deterioration of natural vegetation and lack of land and water. Again, this can be displayed in overlays.
- Where are the problem areas? We know soil erosion is a problem. But where are the hot spots. A simple, country-wide map showing high, medium and low erosion hazards would be a good start.

These efforts will provide the data, the ammunition needed to sell a more balanced approach to development. What ETMA has accomplished thus far is collecting information mainly on the first and some of the second levels. Pulling together data on rainfall, geology and census figures is a good start. In addition, some basic information on resource pressures should be shown. But it is essential to have resource management activities fully extended to the second and third levels and they should be planned accordingly.

#### Specific Resource Management Activities

This section briefly summarizes the resource management activities during the first project year and provides our evaluation of them. More detail on the activities can be found in the Project Year One Annual Report.

Sudan - work with the Institute for Environmental Studies (IES), University of Khartoum. The project paper originally called for work with three universities

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in the Sudan, but this has been postponed - perhaps indefinitely - because of logistic problems and inter-university rivalry. This was probably unavoidable, but to this extent the projected outputs will not be achieved. Within this constraint, our overall judgement is that the work with IES so far has been very good and that it should continue. But the inherent plan for this activity needs to be documented.

The working agreement with IES for the first year contained three objectives:

- A workshop to develop a matrix of indicators of environmental change to be tested in the field, and to help select specific field sites. The workshop, a precursor to the next objective, was held in March 1981 and was successful.
- A trend analysis based on existing historical, cartographic and remote sensing data. This work was done at Clark and focussed primarily on remote sensing. The outcome was essentially a determination that remote sensing data could not provide information at the level needed for resource management in the Sudan. This confirms our own experience. We also believe it was necessary to try to use this data, even if only to find out that it could not be done.
- Selection of indicators of environmental change and the initiation of field data collection. Under the sponsorship of IES, and supported by professional help from Clark, groups of university professors have been developing change indicators for seven specific sites in the Sudan; and data collection has been started for several of them. The professors are extremely competent and well motivated. The consensus, with which we agree, is that the most important aspect of the activity has been the introduction of a multi-disciplinary approach into a discipline-oriented university setting. It has taken a long time for some of the groups to hammer out an agreed set of common indicators, but the time and effort have been well spent.

Tanzanian - work with the Bureau of Resource Development and Land-Use Planning (BRALUP) and other institutions. The first year working agreement with BRALUP contained four objectives:

- An inter-ministerial workshop intended essentially to lead to a government decision to establish an overall environmental unit, and to determine where it should be placed in the government structure. It may have been overly ambitious to think that ETMA could effectively sponsor such a

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workshop. In any case, it has been overtaken by events. The government sponsored its own workshop, which was attended by three professionals from Clark, and it is apparently proceeding on its own toward a decision on the need for and locus of an environmental unit.

- Work on land and crop suitability mapping and preparation of an atlas and user guide for the maps of the Rukwa district. The maps were drafted by BRALUP prior to the ETMA project. The preparation of the users guide has lagged considerably. Apparently the Director of BRALUP has had to spend considerable time editing the draft guide because much of it was prepared in the U.S. by persons not sufficiently familiar with Tanzania; and no Tanzanian is being trained to prepare the next guide. We believe this is an example of work that should have been done in country, and that ETMA funds would have been better spent to pay a Tanzanian to do it, if that was necessary.
- Development of documentation center for BRALUP. A professional from Clark has been working in the development of the Center, in the U.S., and on a field trip to Tanzania. We wonder whether this level of outside assistance is needed. It would appear that BRALUP staff should be able to prepare a list of the documents and research materials that they need, and that ETMA's role should be to receive the list and to secure the materials through purchase or donation. Again, the question is whether anyone in BRALUP is being trained to run the center. (Peace Corps assistance in this area is also available.)
- Development of a model for monitoring environmental health at the village level. As noted earlier, we give the work done on this activity a low value, primarily because host country participation has been negligible. It should not be continued unless it meets strict tests of relevance and local involvement. Nor should it depart from the original rural focus without good justification.

The above comments are mostly negative, but we should record our impression that BRALUP is an institution worth supporting. It has the nucleus of a competent staff, and, through its director, access to government decision makers. (The fact that the regional planning course was requested by the Office of the Prime Minister is evidence of this.) Thus, while the current activities need to be re-examined, we believe that the general concept of strengthening BRALUP is sound.

#### Kenya - work with the National Environmental Secretariat (NES)

Although it is not tied to a specific objective, the most important work being done with the NES is the half-time technical assistance being provided by the regional coordinator. Because of its environmental focus and its position in the

government, the NES is a unique African institution. It deserves support. The NES appreciates the technical assistance it has received and strongly desires that it continue. (When queried about this, the Director promptly reminded us that there was a continuing ETMA commitment to provide this assistance.) We believe the results to date, which admittedly are hard to measure, are in large part due to the sensitivity of the present coordinator. He is deliberately trying to help, train and support the members of the NES staff, and not to substitute for them. The position should be continued, and the replacement for the present coordinator should be selected with care.

The Working Agreement contains four first-year objectives for the environmental management work in Kenya:

- Completion of approximately four district source profiles. As noted, this work is proceeding on schedule and action is underway to focus succeeding profiles more on specific environmental problems and less on general data - the direction we would have recommended.
- Organization of follow-up seminars for completed district profiles. This is the weak spot in the district profile process to date. Only one seminar was held in Kajiado District, and it was largely unsuccessful. Because of its location and unusual combination of local personnel, some productive work has been done in the Ngong area, but nothing has happened in the rest of the district. Seminars need to be held in the other districts and an action plan to reinforce the seminars needs to be designed and put into effect.
- Preparation of a scope of work for soil erosion measurement at selected sites. This is essentially the measurement of actual soil loss at 28 locations to compare with empirically estimated losses. Reportedly, poor road design is a major cause of erosion. If specific data is needed to convince public works about the need for change, this activity may be worthwhile. But, with soil erosion a nationally recognized problem in Kenya, we wonder whether specific site measurements are the proper place to start. It may be that we just don't understand the long-range purpose of the activity. Here again, the empirical estimates were prepared in the U.S. and no Kenyans have been trained to do the next ones.
- Consideration of ways and means by which environmental considerations can be introduced into the next Five Year Plan and long-range planning generally. We have referred to this earlier. We doubt that a Clark professor visiting Kenya periodically can have a real impact on this issue, especially in the absence of a plan of action and specific counterparts to work with.

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### Overall Utility

Given the serious nature of environmental problems in Africa, the designers of donor assisted projects are faced with the need to choose or to balance between immediate action programs to deal with the obvious problems and longer range programs to help African nations gain the capability to design and manage sustained national environmental protection activities. It is this latter need that the ETMA project is designed to meet. Its goal is, "to improve African capacity to deal with major environmental problems, particularly desertification, deforestation, soil erosion, water supply and environmental health". In a sense it represents a balance in overall AID environmental activities in Africa. The missions that are engaged in environmental work are generally engaged in immediate environmental action programs, either direct ones such as reforestation, or as an integral part of broader projects such as rural development. ETMA provides a balance by addressing the longer range problems. We approve of this balance, because, while immediate action cannot be postponed, long run institutional solutions must be found. Therefore, we believe that the ETMA project should be continued, provided that the project implementation process can be restructured so that there is a reasonable likelihood that it will achieve its purposes and goal.

Although the goal of the ETMA project is important, we do not believe that the country Missions will pick up ETMA activities now or later, and that the project should be operated on this basis. That is, it should be self-contained. None of the three Missions we visited would be willing to pick up ETMA activities within their current funding levels, although the Sudan and Kenya Missions believe they are important. The Mission in Sudan supports ETMA's efforts to strengthen the Institute for Environmental Studies and the Mission would like to use IES as

its capabilities grow. (The current involvement of IES in an AID supported CARE borehole project is a beginning.) In Kenya, degradation of the environment is a nationally recognized problem and the Mission believes that support for the National Environmental Secretariat is important.

Despite this, the fact is that ETMA project activities would not be picked up because they fall outside of the respective Country Development Strategies. We believe this would generally be true in other African countries and it is not surprising. A CDSS is not a strategy for the development of a country, it is a statement of the areas of priority or concentration for AID assistance, and strengthening African environmental institutions is generally not one of them. This fact supports the concept of ETMA as a regional project, although it is not regional in the integrative sense. It is a set of similar or interrelated activities that are carried out on a country by country basis. (There may be opportunities for truly regional ETMA activities in West Africa, but they should be selected with great care. Institution building is a difficult and chancy business at best, and the problems compound if the institution is supranational.)

#### The Project Goal and Country Coverage

Strengthening African Institutions presupposes that some exist in each country, at least in basic form. This unfortunately is still not the case everywhere. The potential success of ETMA's institution building, especially if the accent remains on staff or academic institutions, is limited to not more than perhaps 12 countries in all of Africa. (If technical line agencies and host country local administrative units were also included, the list would be longer.) If the institution building goal is pursued, the existing and already better functioning institutions

will get more assistance than the weaker ones, not to mention countries where none exist at all. Thus, the strong ones will be further strengthened by the project, the weak ones will fall further behind.

It is not practical to divide the project's resources among all countries in the region equally. In the first place there are some countries where inputs cannot be applied for legal or political reasons, such as Angola, Ethiopia and Nigeria. In the second place, there are some medium-size countries, such as Chad, Mauritania and the Central African Republic where, although AID has programs of varying magnitude, they simply do not have a starting base. This is not bad per se, but we should clearly identify (and by now can) what we really mean by a regional program: some countries are definitely in, others are not. This evaluation could, at least as a starting point, list those countries where project activities should be concentrated. For countries where the institutional base is too weak to begin in the country now, one possible approach would be to make special efforts to identify individuals who would profit from long term training or seminars or courses in neighboring countries, and to arrange for their training outside of their country.

#### Project Purpose - Environmental Training

The project purposes in environmental training is:

- To establish African Environmental Programs on themes related to environmental management and on themes related to environmental constraints, to strengthen the capacity of African [institutions to conduct] training on their own.

We have noted earlier the need to tie the courses more directly to the project purpose, and our judgement that two of the five held to date do not meet this test. As this is done, regardless of the main subject of a course, there are two needs which each should attempt to address. They are:

- to somehow reach planners and decision makers to get them more involved, especially in regard to concerns for the potential negative impacts of their actions.
- to raise awareness about the serious and complex nature of tradeoffs between development and resource conservation and protection. (Note that this is not the awareness of environmental problems articulated in the Project Paper. It is much more focused.)

### Project Purpose - Environmental Management

The project purpose in environmental management is:

- To strengthen capabilities of institutions in African countries:
  - to improve their environmental information base,
  - to identify environmental pressure points,
  - to monitor environmental trends, and
  - to have qualified personnel capable of providing this information to planners and policy makers in usable form.

Even if institutions are strengthened to the full extent described above (complete information base, priorities clearly identified, trends adequately monitored and qualified personnel available), no positive or corrective action will result until this information is used to make the necessary changes in the ways the renewable natural resources (mainly soil, water, natural vegetation and wildlife) are managed. This means by both the government and the people themselves (over 80% of whom live in strictly rural settings across the continent).

If the project is to reach its goal, we believe a fifth activity should have been added:

- to assist the host country governments to use this information to develop the necessary policies, management plans, and models to more effectively and more rationally manage the available natural resources and their development potential, and to better balance between short term positive gains like agricultural production and possible, but not inevitable, degradation of natural resources.

While it may not be necessary to rewrite the project paper or log frame to include this ultimate activity or sub-purpose, a means should be found to insure that it is considered in every activity plan.

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### A Word About West Africa

ETMA work in West Africa is in the early planning stage, and we are not aware of a coherent ETMA strategy that has evolved for the area. We have some personal observations that might be considered as an ETMA approach to West Africa is developed and specific project activities are designed. They are:

- We would be very cautious about getting involved in regional river basin organizations. It is difficult enough to get something going within just one government. By nature environmental training and management requires a horizontal approach for which French oriented government structures are even less prepared than former English colonies. If one adds a superstructure of several countries working together in a river basin, a tremendous amount of pulling back and forth is encountered. We would be particularly careful in dealing with Lake Chad Basin Commission and the Niger Basin Commission where Nigerian involvement makes matters particularly difficult.
- One exception may be occasions where some environmental or ecologic activity has already been started, such as the AID sponsored environmental impact study in the Senegal River Basin Commission (OMVS). If a ready made opportunity to do some training or planning presents itself within these frameworks, ETMA could take advantage of it.
- Possibly the best ready made opportunity is the Ecologic Guidelines of CILSS. After some refinement, they would be ready to go and could be introduced on a country by country basis to forest services and other agencies involved in resource management and planning. The idea is a set of analyses and considerations that:
  - would predict with some degree of accuracy what possible negative environmental impacts any given development project may have, and
  - would guide the programmers and designers toward basic steps that can and should be incorporated into project design to mitigate or eliminate some of these adverse future situations.

However, before proceeding, ETMA should check on AID's current position with regard to CILSS. Because of past excessive concern with personal perquisites at the expense of substantial work, the Institute du Sahel should also be approached with caution.

- Across the Sahel AID has on-going bilateral projects in practically every country in forestry and/or resource management. They all have training components. They also all have good US technicians at the scene who
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will have ideas on how ETMA possibly could blend some of their activities into these projects. Whatever ETMA does in the Sahel should draw on this available resident expertise, at least for advice on activity opportunities and design.

- The project should not compromise the standard of French fluency for work in the Francophone countries. It is a sine qua non.
- The Project Paper postulates two possible additional environment management activities in the later years of the project. Presumably they would be in West Africa. Certainly they should not be considered unless AID is convinced that the present environmental management activity has been focused and is proceeding reasonably toward project goals and purposes. Beyond this, we are not able to comment meaningfully in the abstract on whether these additional activities should be undertaken. That decision can only be made when the specific countries, institutions to be supported, and activity plans are known.

#### Future Training Activities

The following suggestions are offered for consideration in preparing future ETMA training activities:

- Each training effort must fit into a larger framework.
- If you train personnel for another project, make sure the project is viable.
- Train trainers more than individual participants.
- If the training director is from outside the project, make certain he or she is qualified.
- Each training effort should include the collection or production of a practical, field-oriented work manual or action plan.
- Package training programs so they can be repeated (other times, other places), preparing local staff as expeditiously as possible.
- U.S. trainers must meet minimum requirements in terms of technical qualifications and previous experience relative to the host country situation.

#### Future Resource Management Activities

The following suggestions are offered for consideration in preparing future resource management activities:

- Activities (reports, maps, plans, data, etc.) must reach the decision makers and be used by them. Multi-level followup is mandatory. Better

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to do less and follow through than to start more initiatives and not have enough time to do a complete job.

- Analyses and reports (profiles, guides, etc.) must begin to go beyond collecting existing data and focus on resource management issues:
  - location, degree and nature of major environmental hazards and pressures.
  - location of areas over or under-used.
  - list of past mistakes.

Identifying the major problems (which are well-known locally) does not require expensive, time-consuming studies, research or outside inputs other than assistance in field-data gathering.

- Monitoring. Select indicators and get on with it. Concentrate on major factors. Having an overview (high, medium and low) over wider areas is more important than detailed measurements at a few specific locations.
- Get ETMA activities blended into ongoing projects in resource management (AID's to start with), especially in West Africa.

#### IV. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

This chapter summarizes the conclusions and recommendations which flow from the preceding discussion. While qualifiers, such as "we believe that," are not used, the conclusions and recommendations represent our best professional judgement and no more than that. They are presented in their general order of importance.

1. The ETMA project is intended to address an important, longer-range institutional aspect of environmental management in Africa that is not adequately addressed elsewhere in the AID program. Because of this and the overbearing nature of environmental problems in Africa, the project should be continued if it can succeed. The alternative of continuing with a greatly restricted project is not attractive. It would preclude achievement of the worthwhile overall goals and it would require much of the restructuring that is involved in continuation of the project as a whole.

Recommendation 1: We recommend that the ETMA project continue basically as it was originally conceived, but with management, and the management structure, redesigned to provide a reasonable prospect that the project will achieve its overall goals and purposes.

2. The ETMA project, as it is presently being implemented, will not achieve its goals or purposes.

Recommendation 2: We recommend that if the management and implementation of the ETMA project cannot be effectively restructured, the project be cancelled.

3. During the first project year, project outputs have fallen far short of planned levels and inputs and expenditures have been disproportionately high. Inappropriate and ill-planned activities have been carried out and essential follow-up actions have not been planned or executed. One reason for this is the fact that the basic documentation for project

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implementation - the annual Memoranda of Understanding with host governments and the Working Agreements for specific activities - are essentially narrative in nature. They do not contain the information or the inherent analysis that are necessary if managers at all levels are to be able to evaluate individual project activities for coherence and their contribution to the project's objectives.

Recommendation 3: We recommend that separate documentation or the memoranda of understanding and working agreements (preferably the latter) require the preparation of an analytic framework for each discrete project activity. The essential elements that should be included in such a framework, described in more detail in Chapter II, are:

- the purpose of the activity,
  - the priority of the activity.
  - the relevance of the activity to the project,
  - the linkage to other project activities, and
  - the follow-up actions that are essential.
4. The second reason for the current implementation problems is the fact that the present contractor structure is ill-suited to the task. Responsibility and authority are fragmented and no one is in charge of the project. The prime contract, which reflects the management concept in the project paper, contains the following weaknesses from a management point of view:
- Neither SECID nor anyone else has the responsibility or authority for implementation of the project as a whole.
  - Separate coordinating authorities are assigned to UNC and Clark with no provision for overall supervision by SECID.
  - The regional representatives in Africa report to the Management Committee (SECID, UNC and Clark), not to SECID as prime contractor. The general function of the Management Committee is also overstated.

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Recommendation 4: We recommend that the prime contract be revised to create a contractor structure appropriate for the implementation of an \$8.5 million project. Necessary prime contract changes include the following:

- Make SECID directly responsible for the success of the project, give it the authority to do so, and hold it accountable for results.
  - Have the regional representatives report to SECID, not to the Management Committee.
  - Limit the role of the Management Committee to one of providing advice to SECID.
  - Make Clark's coordination of environmental management (and UNC's coordination of training, if it is continued) clearly subordinated to SECID's overall management and control.
5. Largely for historical reasons, SECID, is not currently staffed to manage the contract effectively, even if it had the authority to do so; and this type of contract management is foreign to SECID's normal pattern of operations. Despite this AID should look to SECID for overall management, and see that it is adequately staffed to do the job. There are four reasons for this:

- At the mid point in the project there is little advantage in searching for a new contractor.
- The alternative of separate direct contracts with UNC and Clark would not provide essential overall coordination and direction, and it would place an undue management burden on AID.
- The additional staffing required at SECID would be minimal. The SECID project coordinator is dedicated and has the proper training. We believe that he could do the job if given the necessary responsibilities, authorities and means.
- The gamble that SECID can do the job is an acceptable risk.

Recommendation 5: We recommend that AID look to SECID for overall project management and that SECID be staffed to do the job. What is required is a full-time professional manager who is provided with adequate administrative and clerical support and thus is free to manage.

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6. The subcontract with UNC grew out of its pre-project involvement. At this stage in the project there seems to be no valid reason why UNC, a SECID member, should have a separate subcontract with separate overhead.

Recommendation 6: We recommend that the subcontract with UNC be ended and that SECID be assigned responsibility for the coordination of environmental training. As training courses are identified SECID should job them out to the most appropriate member school.

7. The subcontracts with Clark and UNC are inadequate by any reasonable test. They are funding documents whose scope of work is so general as to be meaningless, and whose provisions require only certification that money has been spent, to justify reimbursement.

Recommendation 7: We recommend that the subcontract with Clark University be revised in accord with the prime contract revisions recommended above. The revision should:

- Make Clark clearly subordinate to SECID,
- Charge Clark with accomplishing specific tasks,
- Assign resources to each specific task,
- Impose stricter reporting requirements on accomplishments, and
- Base invoices on work done, not money spent.

8. AID's structure for contract oversight is adequate, but its performance has not been. AFR/RA is the proper location for overall project monitoring, but its resources and geographic knowledge are limited. It has not been adequately supported by the Missions, partly because project documentation has been weak from a management point of view. The Regional Environmental Officers are too fully occupied to assume responsibility for the management of ETMA activities.

Recommendation 8: We recommend that AFR/RA continue to be responsible for overall monitoring; that the Missions be more specifically charged with review of proposed activities against stipulated criteria; and that the REDSO's continue to serve in an advisory role to the Missions.

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9. The level of effort on resource management that is being done in the U.S. by Clark (76% or 82%, depending on whether or not the East Africa Coordinator is included) is not compatible with the project's goal of an improved African capacity to deal with the environment; and much of the work done in the U.S. appears to have been academic and detached from reality.

Recommendation 9: We recommend that the activity at Clark be reviewed with a view toward sharply reducing the amount done in the U.S.; that any research in the U.S. be explicitly justified in the future; and that AID and the contractor seek ways to use more EIMA funds for relevant work done in Africa by Africans.

10. First year overhead costs at Clark appear to have been excessive, partly because of the shortfall in planned activities. Clark's invoices show 39% of personnel costs as overhead and this is probably understated, since overhead charges were shifted into the environmental management category at mid-year.

Recommendation 10: We recommend that AID and the contractor review the overhead establishment at Clark with the intent of reducing the share of environmental management funds that are spent on overhead; and that strict controls on overhead costs be built into the revised subcontract with Clark.

11. The role of the regional coordinators is essential, but it could be done more cheaply from the U.S. However, because of the importance of the advisory role with NES, the position of East Africa Coordinator should be continued. The incumbent in West Africa should not be replaced if continuity of contact can be assured.

Recommendation 11: We recommend that the position of coordinator in East Africa be contained, but that the need for a resident coordinator in West Africa be re-examined at the end of the present incumbent's two year tour.



12. The involvement of Africans in the conduct of training courses to date had been excellent. But course materials have not contained the amount of local studies envisioned in the project paper. Too many of the materials have been too general, and some have been too abstract to be relevant.

Recommendation 12: We recommend that a special effort be made to use more local case studies. Ways should be found to involve Africans more in course preparation and U. S. Faculty should spend more of the course preparation time in Africa, even if this involves extra per diem.

13. Some activities in resource management appear to have limited utility and little prospects for success. (The Tanzania rural health plan and the integration of the environment into national planning in Kenya are examples.) Limited host country participation is an important reason for this.

Recommendation 13: We recommend that all current resource management activities be carefully reviewed when the proposed analytic frameworks have been prepared for them. Particular attention should be paid to the extent of host country involvement.

SCOPE OF WORK FOR THE EVALUATION OF THE  
ENVIRONMENTAL TRAINING AND MANAGEMENT PROJECT

I. BACKGROUND

AID regional project No. 698-0427, Environmental Training and Management, is designed to carry out training in environmental protection and resource management in Africa and to strengthen African institutional capabilities to (1) improve their environmental information base, (2) identify priority environmental problems, and (3) monitor environmental trends. To achieve these objectives, the project provides for training seminars and workshops in Africa, medium-term academic and technical training for Africans, and resource management programs in four East and South African countries. The project was designed and is being implemented under the collaborative technical assistance mode; i.e., it is being implemented by the same contractor that designed the project.

The project was initiated in October, 1980 and has been under way for approximately seventeen months. The contractor has been slow in the initial implementation of the project's training activities and only five of 49 planned seminars and workshops have been carried out to date. However, there has been a recent increase in the rate of accomplishment with respect to this aspect of the project. Resource Management programs are operational in three of the four planned countries. The first of two permanent contract field positions was filled in January, 1981 when a technician was assigned to Nairobi. The second position in Abidjan was filled in November, 1981. Project activities to date have focused on East Africa.

ARTICLE I - TITLE

Environmental Training and Resource Management (698-0427)

ARTICLE II - OBJECTIVE

The overall objective of this evaluation is to re-examine the original project design. The evaluation should assess progress towards meeting the planned outputs, purposes and goals of the project as set forth in the project paper and AID contract No. AID/afr-C-1697, identify significant issues or problems, and recommend any changes that would assist in the achievement of the project purposes. It should also determine if the project's original purposes continue to be valid and whether the approach being undertaken is the most effective and appropriate method of achieving these objectives.

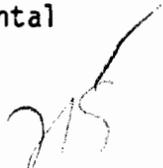
ARTICLE III - STATEMENT OF WORK

The contractor will prepare an evaluation report consisting of the following:

1. A summary of major findings and recommendations.
2. A description of the evaluation methodology.

3. A project background section summarizing the project's objectives, the project's development/design process, and describing project activities to date.
4. An analysis of the accomplishments of the project to date in respect to the project's stated purposes. The analysis should cover, but not be limited to, such aspects of the project as planned vs. actual outputs of both the training and resource management programs, the contractor's compliance with the scope of their contract, planned vs. actual costs of project activities, the development objective of the project, the degree to which project related training is being utilized and the extent to which the project supports other AID development activities, particularly energy and food production.
5. Identification of significant problems or issues regarding project implementation or the achievement of the project issues.
6. Recommendations for improving project implementation or project design. Such recommendations should include, but not be limited to:
  - a. Whether the specific mix of training being carried out under the project remains relevant in the terms of the host government and AID mission requirements.
  - b. The degree of host country program involvement vs. contractor involvement in implementation of project activities.
  - c. Whether the project could be carried out in a more cost-effective manner; and if so, what the trade offs would be.
  - d. Whether the present contractual mode is the most appropriate and effective method of project implementation and/or achieving project objectives.
  - e. The point at which the resource management activities could be shifted from the regional program to mission bilateral programs.
  - f. Whether the project can reasonably be expected to achieve the original purposes and outputs within the remaining life of the project and within the original project budget. If not, what can the project be reasonably expected to accomplish within the established time framework and approved funding levels.

To carry out the evaluation, the evaluation team will:

1. Discuss the project with appropriate AID/W officials, review the Project Paper, project workplans/budgets, training documents, and other unclassified project correspondence and records.
  2. Examine the contractor's arrangements for technical and administrative background of field operations through visits to SECID, University of North Carolina and Clark University.
  3. Discuss the project and its implementation with (a) the Directors and appropriate USAID staff in Sudan, Kenya, and Tanzania; (b) the Directors and appropriate staff in the REDSO's; and (c) host-country personnel who have been instrumental in project implementation from the host country standpoint.
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4. Conduct interviews in each of the above countries with a selected number (5-10) of training program participants.

5. If timing of the evaluation coincides with on-going training activities, the contractor should plan to spend one or two days observing an environmental training program in the field. One such program might be a workshop being planned for Tanzania between April 27 and May 8, 1982.

#### ARTICLE IV - REPORTS

The contractor will submit ten copies of the report to AFR/RA within 15 working days after the team returns to the United States. The report will be bound and typed on plain white bond paper.

#### ARTICLE V - RELATIONSHIPS AND RESPONSIBILITIES

The evaluation team will be composed of a project design/management specialist familiar with the AID project design/project management system and an environmental scientist with experience in environmental training programs and natural resource management programs. The environmental scientist should be familiar with African environmental/natural resource problems and prior African experience is considered mandatory. The project design/project management specialist will be designated as the team leader.

~~The evaluation team will work under the general direction of AFR/RA Project Officer.~~ In Africa the team will work in close collaboration with the AID Regional Environmental Officer in REDSO/EA and the AID Mission Environmental Officers in the Missions to be visited by the evaluation team.

#### ARTICLE VI - TERMS OF PERFORMANCE

The services requested will be required for 38 calendar days beginning on/about April 19, 1982 in accordance with the following schedule:

|            |  |
|------------|--|
| Week No. 1 | Three days AID/W and three days at SECID and University of North Carolina (both located in Chapel Hill, North Carolina). |
| Week No. 2 | Sudan  |
| Week No. 3 | Tanzania   |
| Week No. 4 | Kenya  |
| Week No. 5 | Three days at Clark University and three days in AID/W for debriefing and report preparation.                            |
| Week No. 6 | Three days in Washington to finalize report.   |

#### ARTICLE VII - WORK DAYS ORDERED

Each of the two evaluation team members are expected to work no more than thirty-three (33) work days. A six day work week with no premium pay is authorized.

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