

PN - ABX-066

# GreenCOM

Environmental Education and Communication Project

## Technical Advisory Group Meeting

### Summary Report

**An Applied Research Agenda for GreenCOM,  
the Environmental Education and Communication Project**

**June 9-10, 1994**

**Sponsored by  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
Academy for Educational Development  
Washington, DC**

**Contract # PCE-5839-C-00-3068-00**



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# Executive Summary

The 1994 Technical Advisory Group (TAG) meeting of the Environmental Education and Communication (GreenCOM) project was held on June 9 and 10 at the Academy for Educational Development in Washington, DC. In general, the purpose of the GreenCOM TAG meetings is to provide the contractor with guidance as to the project's applied research agenda, to help ensure that the project makes a substantial contribution to broader lessons learned and thereby to assist the agency in achieving its objectives with respect to issues such as biodiversity and global climate change.

The TAG members, staff of the GreenCOM team and USAID, and invited guests attended this first meeting. The purpose of the first meeting was to familiarize the TAG members with each other and with the project, its activities and the context for the applied research agenda. Input on innovative research designs, an analytic framework to help organize and communicate results, and cutting edge issues in the domain of environmental education and communication (EE&C) was obtained by having groups develop, discuss and present research on three illustrative country cases.

Applied research recommendations for GreenCOM included the following:

- ◆ Interventions should be designed on the basis of solid, albeit rapid formative research, research that is organized and informed by a theory-based, yet practical analytic framework.
- ◆ Impact evaluations should be reserved for mature interventions where there is evidence of successful implementation and where there is strong reason to expect impact on important outcomes. Impact evaluations should be designed with the specifics of the intervention in mind.
- ◆ It would be valuable for GreenCOM to develop an understanding of the relationship and the important contributions of the various approaches to intervention design, including education, social marketing and participatory models.
- ◆ GreenCOM should consider a variety of indicators of success, including changes in knowledge, attitudes, beliefs and behaviors as well as hard environmental impacts.

# Proceedings

## Background

The 1994 Technical Advisory Group (TAG) meeting of the Environmental Education and Communication (GreenCOM) project was held on June 9 and 10 at the offices of the Academy for Educational Development in Washington, DC. The agenda for the meeting is presented in Annex A. The primary objective of the TAG meetings is to provide the contractor with expert guidance and review of the applied research agenda of its GreenCOM project. The focus of this first meeting was:

- ♦ to familiarize TAG members with the purpose and scope of the project;
- ♦ to discuss a preliminary framework to guide applied research activities; and
- ♦ to develop model applied research plans for three illustrative cases.

Recommendations from the TAG meeting will be used to provide the contractor with input into developing an applied research agenda that is both methodologically and theoretically sound as well as scaled appropriately to country resources and capabilities. A solid applied research agenda will help GreenCOM ensure that its activities make a substantial contribution to broader lessons learned with respect to environmentally sound policies and practices and to the education and communication methods upon which these programs are based.

## Introduction

Brief introductory remarks were made by Mr. Stephen Moseley, AED President; Dr. Twig Johnson, Director, A.I.D. Office of Environment and Natural Resources; Dr. Norman Rifkin, A.I.D. Director, Office of Education; and Dr. Anthony Meyer, A.I.D. GreenCOM Project Officer.

All stressed the importance of integrating science and education to improve environmental conditions and human lives. They expressed expectations about the potential of the GreenCOM project to change the way that things are done, and noted that the TAG was one of the engines for accomplishing this. In particular, GreenCOM will help A.I.D. achieve its strategic objectives with respect to both biodiversity and global climate change.

## Developing an Applied Research Agenda for GreenCOM

*Presenter: Susan E. Middlestadt, GreenCOM Applied Research Director*

Dr. Middlestadt described how the TAG members can provide assistance to GreenCOM in developing its applied research agenda. In her presentation, she set the context for the research

with a brief description of GreenCOM's potential programs, described the type of research advice needed at this time, and gave an overview of the types of research GreenCOM will be conducting.

GreenCOM will be working all over the world, on a wide variety of *green, brown and blue* issues and using a diverse set of education and communication interventions. All these different interventions, however, have one thing in common. They all involve **people**. Stated one way, as an education and communication project, GreenCOM's mission is to understand and influence people as they act in their environment. The TAG and the staff form an interdisciplinary teams to help inform the interface between the environmental sciences and the behavioral, education, communication and other social sciences. From a research perspective, GreenCOM will take advantage of the vast array of programmatic activities as opportunities to develop general lessons learned.

At this point in the project, Dr. Middlestadt indicated that GreenCOM needs three types of advice. First, advice is needed about an analytic framework that will help organize results, findings and studies and will help the researchers to better communicate with program managers. Second, advice is needed on specific study designs, innovative designs that are both flexible to changing conditions in country or project objectives and projects change and that can be accomplished with limited, strategically utilized resources. Third, advice is needed to identify cutting edge issues in the domains of environmental education and communication.

GreenCOM's research agenda will consist of three types of research:

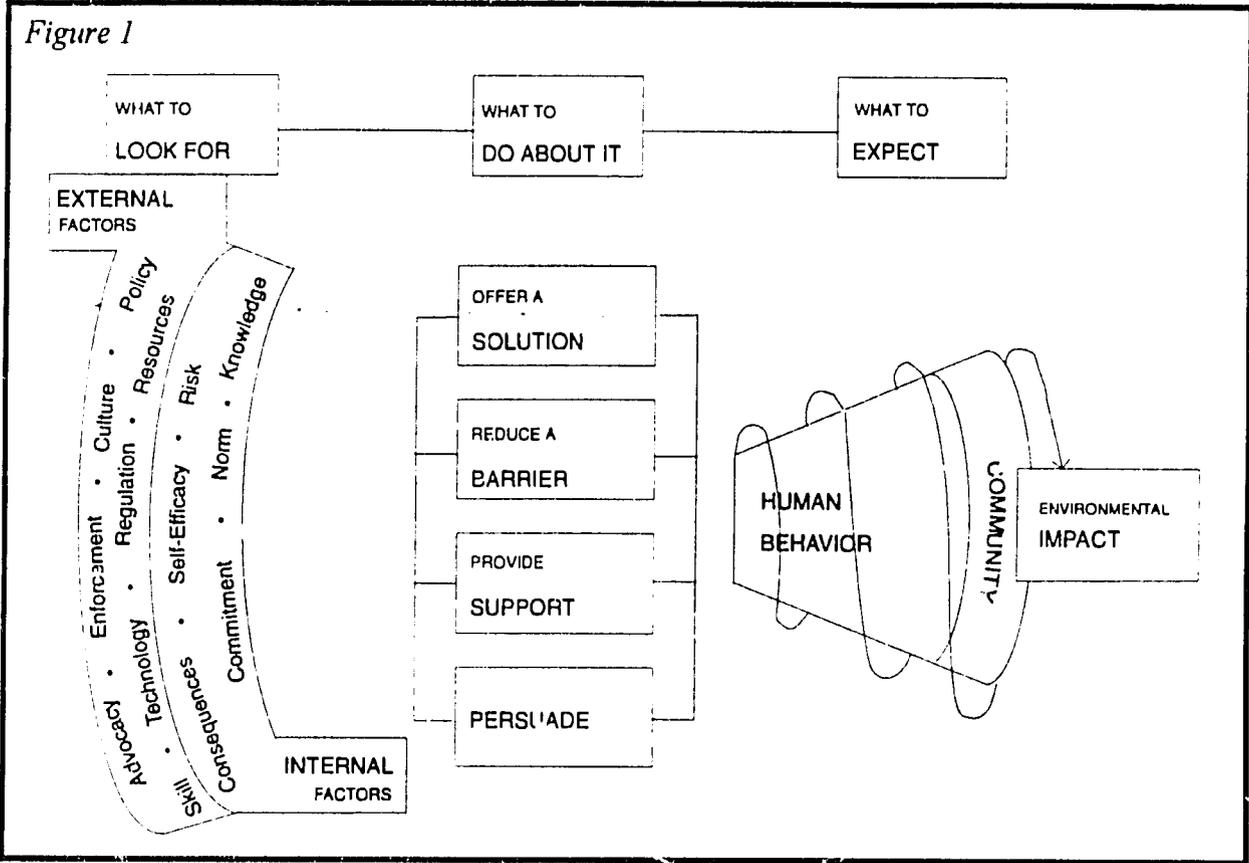
- ♦ smaller-scale operations research studies to help design and redesign education and communication interventions;
- ♦ larger-scale evaluation studies to assess and compare the impact of these programs; and
- ♦ studies to help understand gender differences.

Some examples of operations research might include studies of communities living around protected areas using tools like rapid rural appraisal, surveys, focus group discussions; exit interviews with people leaving interpretative centers to determine how they found out about the center, their reactions and perceptions and its impact on their attitudes and beliefs; or formative research on the benefits and barriers to alternative practices like net rather than dynamite fishing, integrated pest management rather than use of chemical pesticides, agroforestry or terracing.

Impact studies may need to use creative designs and should be reserved for demonstrating key lessons learned early in the project. Since much of GreenCOM's work will be in schools, school-based designs might be particularly useful. In El Salvador, tracking and monitoring of the entire country program will be done with data USAID is obtaining through a contract with the Gallup organization.

Since a consideration of gender issues will be made throughout all of the programs, research will also have to assess, report and analyse separately by gender. The research agenda will include gender studies. For example, in Jordan, GreenCOM will investigate and compare the impact of environmental clubs in girl and boy schools. Other studies might include examining the different views of the use of forests.

After presenting this context, Dr. Middlestadt described the role and value of an analytic framework to coordinate the applied research activity, to facilitate the development of generalizable lessons, to help set research priorities, and to create more effective interventions. She presented examples of frameworks including the one in Figure 1.



Finally, Dr. Middlestadt described the activities she had designed to obtain advice on the research agenda. The process included dividing the TAG members and staff into three groups, each of which would be assigned an illustrative country case and would be asked to design research studies. Reports on the studies would provide study designs, indicate the cutting edge issues that would be addressed and discuss how the study would help to shape the analytic framework.

## Introduction of Participants

*Chair: Anthony Meyer, GreenCOM Project Officer*

A key purpose of this first TAG meeting was to familiarize the TAG members with each other as well as the members of the GreenCOM team. Dr. Meyer referred the meeting participants to the section of the briefing book that gave a brief biographical sketch of the project's personnel, including the TAG members. In addition, he moderated an introduction in which each meeting participant described his or her background and contribution to or interest in the GreenCOM project. A participant list and biographies of the TAG members can be found in Annex B and Annex C of this report. Dr. Meyer noted that the strength and diversity of disciplines among those present would result in rewarding work sessions that would benefit the project greatly.

## GreenCOM: Its Purpose and Activities

*Presenter: C. Benjamin Tyson, GreenCOM Project Director*

Mr. Tyson presented an overview of GreenCOM mechanism. The project is sponsored by the Agency for International Development - Bureau for Global Programs, Field Support, and Research.

The goals of GreenCOM are:

- ♦ to reinforce the effectiveness of existing USAID environmental development projects by providing important EE&C and behavior change support;
- ♦ to serve as a vehicle for the identification, synthesis, and dissemination of EE&C and behavior change strategies that prove effective across various settings.

GreenCOM is designed as a five-to-seven year contract, initiated in October 1993. The prime contractor is Academy for Educational Development; subcontractors include Chemonics International, Global Vision, Inc., and the North American Association for Environmental Education; and with the Futures Group, PRC Environmental Management, Inc, Porter/Novelli and the Kingsbury Group. A **core contract** provides for key staff and home office support and limited field activity, primarily in the area of research. A **requirements contract** includes buy-ins from USAID offices (e.g., WID); regional bureaus (e.g., Africa); and USAID missions (e.g. El Salvador, The Gambia, and Jordan).

In the next five years, GreenCOM plans to establish long-term activities in six countries, with shorter-term activities taking place in an additional fifteen or so. Discussions are underway with USAID missions in countries ranging from Bolivia to Uganda.

GreenCOM will be developing a variety of educational and communication interventions, including school-based curricula, instructional materials, teacher training, youth clubs,

interpretive centers, mass media and social marketing campaigns, contests/award schemes, extension education programs, technology diffusion, policy support, NGO strengthening and NGO mobilization, and participatory approaches.

The project will be working on a variety of green, brown and blue issues. In particular, GreenCOM will address important environmental issues as: **biodiversity** (e.g., wildlife conservation, coral reef preservation, fisheries conservation, parks and preserves, deforestation), **climate change** (e.g., attributed to greenhouse gases, burning of fossil fuels, deforestation, and conversion of rangelands, waste management), **human health** (e.g., pollution prevention, municipal water supplies, solid waste management, and air quality) and **agriculture** (e.g., soil erosion, range conservation, soil salinity, water conservation, and pesticide safety).

## Education, Participation, and Social Marketing

*Presenter: William Smith, GreenCOM Technical Advisor*

Dr. Smith focused his remarks on the relationship of the GreenCOM project to the overall environmental movement, with special emphasis given to the primary strategies being used by the environmental community to influence human behavior. A three-part conceptual framework was presented which included the interaction of regulatory strategies, educational strategies and new product marketing strategies. Attention was given to GreenCOM's research role in assessing and proposing where modern communication and education can be used to strengthen these efforts.

Dr. Smith further discussed the project's potential for strengthening community mobilization and gender research as special GreenCOM contributions. He stressed the importance of interaction between policy, new scientific developments and people's perceptions of both policy and science. GreenCOM should be used as a vehicle to foster understanding of how perceptions affect behavior, and to provide policy makers with models of assessing how perceptions are best influenced by programs.

## Three Country Profiles

*Presenter: The Gambia Susan E. Middlestadt  
El Salvador Richard Bossi  
Gender in Jordan Mona Grieser*

Members of the GreenCOM team presented profiles of three country activities. Brief presentations were supplemented by written profiles that were included in the briefing document and are available in Annex D to this report. These presentations served two purposes:

- ♦ to familiarize the TAG members with the programmatic aspects of GreenCOM project field activities by presenting details on three specific countries; and

- ♦ to prepare the TAG members and other participants for the small working group sessions in the afternoon.

### ***The Gambia***

Deforestation, soil erosion, decreased biodiversity, saltwater intrusion, and natural resource misuse represent major environmental issues in The Gambia. GreenCOM will be working through the Agriculture and Natural Resources (ANR) project as the environmental education component. Dr. Irma Allen, the resident advisor, will be collaborating with and providing technical assistance to the EE&C working group of the National Environment Agency (NEA) addressing three key goals:

- ♦ to introduce environmental concerns into formal education system;
- ♦ to increase environmental awareness and responsiveness of government staff and community leaders; and
- ♦ to increase public awareness and participation in environmental concerns through non-formal education targeted at specific knowledge, attitudinal and behavioral objectives (e.g., reduced burning of grasslands, increased participation in tree planting, live fencing, windbreaks).

In The Gambia, there are three applied research requirements:

- ♦ one EE&C impact evaluation study;
- ♦ three small operations research studies; and
- ♦ gender issues and differences integrated throughout.

### ***El Salvador***

Soil erosion, deforestation, water pollution, solid waste disposal problems and threatened loss of biodiversity affect the country. GreenCOM will implement the environmental education component of PROMESA. GreenCOM has placed Mr. José Ignacio Mata as the resident advisor to provide assistance in the following areas:

- ♦ developing a National Environmental Education Plan;
- ♦ planning and implementing a series of national public awareness campaigns through media and outreach activities of different organizations;
- ♦ helping to integrate environmental education into school curricula;

- ♦ training extension agents in pesticide use, soil conservation, and agroforestry, particularly connected to fuelwood use;
- ♦ beginning education and interpretative centers in parks;
- ♦ mobilizing municipalities around environmental issues; and
- ♦ developing environmental education activities in support of environmental and natural resource management interventions in the demonstration area.

Applied research requirements include:

- ♦ two EE&C impact evaluation studies;
- ♦ six small operations research studies;
- ♦ gender issues and differences integrated throughout.

### ***Jordan***

Water issues form the main environmental challenge facing Jordan, including reduction of losses from the water supply and protection of water resources from contamination. GreenCOM will assist the Royal Society for the Conservation of Nature in their implementation of a grant under the USAID/Jordan Water Quality Improvements and Conservation Project. In addition, GreenCOM will conduct a study of gender differences. This latter study will be funded by the R&D/WID buy-in to the core contract.

Research requirements include a study of the differential impact on girls and boys of environmental education in a school club setting.

## **Description of Breakout Group Assignments**

*Presenter: Susan E. Middlestadt, GreenCOM Applied Research Director*

Dr. Middlestadt discussed the activities and assignment for the afternoon breakout sessions. Annex E presents the full assignment. Briefly, participants were divided into three working groups. Each group member was assigned to focus on one of the three countries presented in the morning session. Each group consisted of two or three TAG members, two GreenCOM staff members, an A.I.D. representative, a recorder, and additional meeting participants. One of the TAG members was designated as a reporter to present the group's findings the following day.

The purpose of the afternoon session was to develop model studies for applied research to help design and evaluate environmental education and communication activities. The advice of the TAG members would be used in two ways. First, since the three country projects were actual

activities, the advice would be useful in the design of specific studies. Second, the logic and thinking behind the advice would help project staff more generally as they look for research opportunities in other field settings.

A GreenCOM core staff member first presented an overview of the country's activities, ending with a presentation of three suggestions for model studies for the group to develop. Then each group was instructed to develop research recommendations. Each group would discuss methods (participants, design, and instruments), hypotheses, assumptions, cutting edge issues to be addressed, and the likely contribution of the study to the GreenCOM analytic framework.

## **Specific Research Recommendations**

*Moderator: Kate Barba, GreenCOM Project Manager*

Each group presented its recommendations to the full meeting team for discussion by the full set of participants on the second day of the meeting. A summary of each group's deliberations is presented below.

### ***The Gambia***

*Group Members: John Baldwin, TAG Reporter  
Robert Hornik, TAG member  
Susan E. Middlestadt, GreenCOM Applied Research Director  
C. Benjamin Tyson, GreenCOM Project Director  
Kate Barba, GreenCOM Project Manager  
Rosalie Norem, USAID/WID  
John Strand, AED*

Dr. Baldwin presented three model research designs for The Gambia. The first was an impact evaluation of supplemental curricular materials intended for the primary school teachers. A key question raised by the group was whether to study the dissemination of the materials using the natural channels or to study the impact of the materials under pilot conditions. Here the issue is whether to assess implementation of an intervention or the impact of an intervention in a situation when implementation is assured (i.e., when it is certain that the teachers will have received the materials in their classrooms and been trained how to use them). The group decided on the latter option using 6 to 8 primary schools in a treatment group and 6 to 8 in a control group. A baseline study could be conducted in both treatment and control schools; materials could be developed and administered to the treatment schools; a follow-up study could be conducted in both treatment and control schools to assess the impact of the supplemental curriculum on the classroom, students, teachers and the community. Survey and observational instruments could be used.

During the presentation to the larger group, a key issue raised was the content of the materials. Should the same materials be used in all treatment schools or should each school decide which to use? On the one hand, supplemental materials may be more effective if they are relevant to local conditions and have been developed with community input. On the other hand, evaluation of impact is more difficult if each community selects its own goals and objectives.

The second design was an operations research study in the Foni Jarrol Conservation District to document the formation and consequences of the Village Conservation Committee. The purpose of the study would be to assess changes and to identify possible causes or contributory factors in the changes. Key informant oral interviews of many different players (e.g., women, village leaders, extensionists and researchers) would be conducted in two adjacent areas, one which is located in the District and one is a similar area situated where no watershed activity was initiated.

During the discussion it was recognized that with no baseline, this design would only allow GreenCOM to suggest hypotheses rather than to demonstrate the reasons for the success of the intervention. The use of simple impact measures (e.g., measuring sediment in a quart jar of water) was recommended. Again the question of indicators of success arose. Should they be indicators of impact on the environment and/or impact on people, their knowledge, attitudes, beliefs and behaviors?

The third study considered by this group was an assessment of the impact of a National Environmental Award Scheme on the public's knowledge, attitudes, beliefs and behaviors. The key was to determine how to take an awards approach to the next step of publicizing, supporting and fostering the winners as positive role models. Measures such as the number and quality of applications, the content of the media, community and industrial change in the content areas targeted by the awards and possible annual surveys of the general public in sentinel areas were suggested.

### *El Salvador*

*Group Members:*      *Martin Fishbein, TAG Reporter*  
                                 *Lynne Hale, TAG member*  
                                 *Judy Braus, TAG member*  
                                 *Richard Bossi, GreenCOM Operations Support Manager*  
                                 *Orlando Hernandez, GreenCOM Senior Research Officer*  
                                 *Anthony Meyer, GreenCOM Project Officer*  
                                 *Nancy Diamond, WID Office*  
                                 *Behi Badamchian, PRC Env. Mgt. Inc.*

Dr. Fishbein presented a summary of the discussion of El Salvador group. A key focus of the discussion of this group was on a methodological issue, i.e., the value and appropriateness of school-based sampling frames to assess the impact of environmental education and communication interventions. The group decided that such a sampling frame would be appropriate for some types of interventions depending on the scope and target audience of the intervention. In using such a sampling frame, one would need to keep a number of concerns in

mind: who would be surveyed and who would be missed (while 85% of the population attend school, attendance drops off severely after grade three); how would the schools be stratified (urban/rural; coastal/highland); how can one sample the community (male and female guardians, other influentials); are other bases more appropriate than school (churches, resource users associations); and what behaviors should be assessed (a common set or locally determined behaviors).

The second study was an operations research study to examine the potential of women as entry points for behavior change. Using rapid ethnographic research, GreenCOM would first need to determine specifically what the relevant behavior is. Then the researchers would need to identify who engages in the behavior as well as who supports or hinders the behavior, to identify specific benefits or barriers to the behavior. It would be recommended to disaggregate the sample and the analyses by gender and by type of resource user (e.g., wood collectors, shellfish collectors and fisherfolk in the mangrove areas or farmers, squatters or members of cooperatives located in the highlands). One design might be to compare women vs. men vs. couples as effective entry points to changing a particular environmental behavior.

The third study concerned the role of laws and policies in influencing environmental behaviors and practices. Discussion revolved around the people and communication issues, such as, the understanding of the policy/law among different segments of the population, interpreting and implementing the law, the input the users had in setting the policy, and the barriers to and facilitators for compliance with laws and policies.

### *Jordan*

*Group Members*      *Thomas Zosel, TAG Reporter*  
*Marjorie Thorpe, TAG member*  
*Mona Grieser, GreenCOM Senior EE&C Specialist*  
*William Smith, GreenCOM Technical Advisor*  
*Michael Philley, GreenCOM Deputy Director/Field Support*

Mr. Zosel presented a model study whose purpose was to examine the impact of an eco-club program on water consumption at school and at home. The participants would be 50 high schools with eco-clubs stratified by gender of school as well as other characteristics such as water use patterns, urban/rural, or type of science program/equipment available; 50 schools without eco-clubs would be a control group. The intervention would serve the dual objectives of providing train-the-trainer opportunities to teachers as well as allowing students to participate in a contest. The contest would see which club could design the best strategy to conserve water. Training would cover how to record information from the water bill, how to develop strategies that reduce water consumption as well as how to develop materials on water consumption. A key hypothesis was whether male vs. female eco-clubs were be more effective at reducing water consumption.

Since the study relied on the appropriateness of water consumption reduction as an outcome, discussion focused on how to develop appropriate indicators. Monitoring water bills as well as

assessing water tank levels were proposed. Also discussed was the feasibility of adapting the intervention to a different outcome (e.g., recycling of gray water). In addition, several of the TAG members were concerned about the feasibility of having and/or demonstrating impact in school settings vs. in the home.

## **Concluding Remarks and General Research Recommendations**

*Moderator: Anthony Meyer, GreenCOM Project Director*

Dr. Meyer solicited final general comments and recommendations from the TAG members. Mr. Zosel recommended GreenCOM examine local multinationals and the role they may play in providing assistance to a country's EE&C efforts. Dr. Hornik reminded GreenCOM to be sure that an intervention is mature and fully implemented before an impact evaluation is designed and executed. Ms. Hale posited that the strength of a global project like GreenCOM is in being able to examine broader hypotheses as well as to provide input to specific programs.

Dr. Fishbein reiterated the concern for developing general principles of behavior change. In addition, he reinforced the value of formative research in designing interventions. Dr. Baldwin recommended that the project keep in mind the larger world community of those concerned with the environment and the role GreenCOM might play as a thread linking them. Dr. Thorpe emphasized the value of strengthening local capacity and of using indigenous talents, both male and female individuals and institutions. That is, the project should not just build national capacity but provide a space for it to develop. Ms. Braus indicated that both environmental education and social marketing as approaches for designing interventions can be effective and recommended GreenCOM coordinate global as well as local goals.

**Annex A**

**Environmental Education and Communication (GreenCOM) Project  
Technical Advisory Group (TAG) Meeting  
June 9 and 10, 1994**

**Academy for Educational Development  
1255 23rd Street, NW  
Washington, DC 20037  
1st Floor Conference Room**

**June 9, 1994 Morning**

**The Context of GreenCOM's Applied Research  
Chair: Anthony Meyer, Office of Education, GreenCOM Project Officer**

- 8:00 Registration and Coffee Service**
- 9:00 Welcome (AED)**  
Stephen Moseley, President  
William Smith, Executive Vice President
- 9:05 Opening Remarks (AID)**  
Twig Johnson, Director, Office of Environment and Natural Resources  
Norman Rifkin, Director, Office of Education
- 9:10 Purpose of the TAG**  
Anthony Meyer, Office of Education, GreenCOM Project Officer
- 9:15 The GreenCOM Applied Research Agenda**  
Susan Middlestadt, GreenCOM Applied Research Director
- 10:15 Break**
- 10:30 Introduction of Participants**
- 10:45 GreenCOM: Its Purpose and Activities**  
C. Benjamin Tyson, GreenCOM Project Director
- 11:00 Education, Participation, and Social Marketing**  
William Smith, Executive Vice President, GreenCOM Technical Advisor

11:15           **Three Profiles**  
                   The Gambia           Susan E. Middlestadt  
                   El Salvador           Richard Bossi  
                   Gender in Jordan       Mona Grieser

12:00           **Purpose of Break Out Groups**  
                   Susan E. Middlestadt, GreenCOM Applied Research Director

12:15           **Lunch**

June 9, 1994 Afternoon

Developing Applied Research Study Designs

The break out groups will be held in conference rooms on the fourth floor of the Academy for Educational Development. Please meet with the GreenCOM staff members on your team in the first floor conference room at 1:30. We will escort group members to the appropriate rooms.

1:30           **Break Out Group Discussions**

Country	The Gambia	El Salvador	Gender in Jordan
Room	Milpa	Rumors	Surva
TAG Members	Hornik/Hale/Zosel	Fishbein/Braus/Arensberg	Novelli/Thorpe/Baldwin
GreenCOM	Middlestadt/Tyson	Bossi/Hernandez	Grieser/Smith
AID	Barba	Meyer	Philly

4:45           **Discussion Outline Submitted**  
                   To Laurie Clark, GreenCOM Program Assistant

Reception from 5 to 7 pm, Foyer outside First Floor Conference Room

June 10, 1994 Morning

**Discussion of Applied Research Study Designs**  
**Chair: Kate Barba, Office of Environment and Natural Resources**  
**GreenCOM Project Manager**

- 8:30           **Coffee**
- 9:00           **Distribution of Discussion Outlines**
- 9:15           **Recommendations for Research (The Gambia)**  
TAG Member
- 10:00          **Break**
- 10:15          **Recommendations for Research (El Salvador)**  
TAG Member
- 11:00          **Recommendations for Research (Gender in Jordan)**  
TAG Member
- 11:45          **General Discussion**  
TAG Members
- 12:15          **Closing Remarks**  
Anthony Meyer and Michael Philley
- 12:30          **Adjournment**

**Annex B**

**GreenCOM TAG Meeting  
June 9-10, 1994  
Participant List**

**TAG Members**

Walter Arensberg  
Deputy Director  
World Resources Institute  
1709 New York Avenue, NW  
Washington, DC 20006

John Baldwin  
Department of Planning, Public Policy and Management  
School of Architecture and Allied Arts  
University of Oregon  
Eugene, OR 97403-1209

Judy Braus  
Director, Environmental Education  
World Wildlife Fund  
1250 24th Street, NW  
Washington, DC 20037

Martin Fishbein  
Professor of Psychology  
Research Professor, Institute of Communications Research  
University of Illinois, C-U  
Visiting Scientist at Centers for Disease Control and Prevention  
1600 Clifton Road  
Mailstop E-44  
Atlanta, GA 30033

Lynne Hale  
Associate Director  
Coastal Resources Center  
University of Rhode Island  
Narragansett, RI 02882-1197

Robert Horrik  
Professor of Communication Research  
Annenberg School of Communication  
University of Pennsylvania  
3620 Walnut Street  
Philadelphia, PA 19104-6220

William Novelli  
Executive Vice President and Chief Operating Officer  
CARE  
151 Ellis Street  
Atlanta, GA 30303-2426

Marjorie Thorpe  
Deputy Director  
UNIFEM  
304 East 45th Street, 6th Floor  
New York, NY 10017

Thomas Zosel  
Manager, Environmental Engineering and Pollution Control  
3M Corporation  
PO Box 33331  
Building 2-3E-09  
St. Paul, MN 55133-3331

**GreenCOM Core Team:**

c/o Academy for Educational Development  
1255 23rd Street, NW  
Washington, DC 20037

C. Benjamin Tyson, Project Director  
Richard Bossi, Operations Support Manager  
Mona Grieser, Senior EE&C Specialist  
Susan E. Middlestadt, Applied Research Director  
Orlando Hernandez, Senior Research Officer  
Laurie Clark, Program Assistant  
Lynn Pina, Financial Manager  
Roxana Bandes, El Salvador Field Support Specialist

**GreenCOM Subcontractors**

Henry Cole  
Vice President  
The Futures Group  
1050 17th Street, NW  
Suite 1000  
Washington, DC 20036

Richard Grieser  
President  
GLOVIS, Inc.  
11802 Saddlerock Road  
Silver Spring, MD 20902

Edward McCrea  
Executive Vice President  
NAAEE  
1255 23rd Street, NW  
Washington, DC 20036

Susanna Mudge  
International Consulting Division  
Chemonics  
2000 M Street, Suite 200  
Washington, DC 20036

Mary Paden  
The World Resources Institute  
1709 New York Avenue, NW  
Washington, DC 20006

Robert Porter  
Porter/Novelli  
1120 Connecticut Avenue, NW  
Washington, DC 20036-3902

Firouz Rooyani  
Vice President, International Program  
PRC Environmental Management Inc.  
1505 PRC Drive  
McLean, VA 22102

Raisa Scriabine  
President  
The Kingsbury Group International  
4917 Redford Road  
Bethesda, MD 20816

**Other Contractors:**

Asif Shaikh  
President and Chief Executive Officer  
International Resources Group, Ltd.  
1400 I Street, NW, Suite 700  
Washington, DC 20005

Thomas Wittenberg  
Project Manager  
Abt Associates Inc.  
Hampden Square - Suite 500  
4800 Montgomery Lane  
Bethesda, MD 20814-5341

**AED:**

Stephen Moseley  
President  
1875 Connecticut Avenue, NW  
Washington, DC 20009

William A. Smith  
Executive Vice President  
1255 23rd Street, NW  
Washington, DC 20037

Gregory R. Niblett  
Vice President  
1255 23rd Street, NW  
Washington, DC 20037

**AID:**

Kate Barba  
GreenCOM Project Manager  
AID/G/R&D/ENR  
1111 19th Street  
Room 250  
Arlington, VA 22209

Jeffrey Brokaw  
AID/LAC/DR/E  
Room 2242, NS  
Department of State  
Washington, DC 20523

Bruce Byers  
AID/G/R&D/ENR  
Room 513, SA-18  
Department of State  
Washington, DC 20523

Daniel Deely  
AID/G/R&D/ENR  
Room 506B, SA-18  
Department of State  
Washington, DC 20523

Nancy Diamond  
AID/G/R&D/WID  
SA-18  
Department of State  
Washington, DC 20523

John Gaudet  
AID/AFR/ARTS/FARA  
Room 2941, NS  
Department of State  
Washington, DC 20523

Ronald Greenberg  
AID/ENI/EUR/DR  
Room 4440, NS  
Department of State  
Washington, DC 20523

Gilbert Jackson  
AID/ANE/NE/DR  
Room 208, SA-2  
Department of State  
Washington, DC 20523

Twig Johnson  
AID/G/R&D/ENR  
Room 509, SA-18  
Department of State  
Washington, DC 20523

Philip Jones  
AID/AFR/ARTS/FARA  
Room 2941, NS  
Department of State  
Washington, DC 20523

Elena Kim  
Department of State  
Bureau for Oceans and International  
Environmental and Scientific Affairs (OES)  
Washington, DC 20520

Karin Kolstrum  
AID/COMP/NE/OJT  
Room 1546, SA-14  
Department of State  
Washington, DC 20523

Mary (Molly) Kux  
AID/ANE/ASIA  
Room 3214, NS  
Department of State  
Washington, DC 20523

Dennis Long  
AID/ENI/NIS/EET  
NS  
Department of State  
Washington, DC 20523

Karen Menczar  
AID/LAC/DR/E  
Room 2242, NS  
Department of State  
Washington, DC 20523

Anthony Meyer  
AID/G/R&D/ED  
Room 609, SA-18  
Department of State  
Washington, DC 20523

Pam Muick  
AID/ANE/ASIA  
Room 3214, NS  
Department of State  
Washington, DC 20523

Rosalie Norem  
AID/G/WID  
Room 714, SA-18  
Department of State  
Washington, DC 20523

Julie Owen-Rea  
AID/AFR/ARTS/HHR  
Room 2841, NS  
Department of State  
Washington, DC 20523

Michael Philley  
AID/G/R&D/ENR  
Room 509D, SA-18  
Department of State  
Washington, DC 20523

Thomas (Tobey) Pierce  
AID/ANE/ASIA/SA  
Room 3318, NS  
Department of State  
Washington, DC 20523

Babette Prevot  
AID/LAC/SAM  
Room 2251, NS  
Department of State  
Washington, DC 20523

Glen Prickett  
AID/PPC  
Room 3892, NS  
Department of State  
Washington, DC 20521

Anthony Pryor  
AID/AFR/ARTS/FARA  
Room 300, SA-18  
Department of State  
Washington, DC 20523

Samuel Rea  
AID/G/R&D/ED  
Room 609, SA-18  
Department of State  
Washington, DC 20523

Timothy Resch  
AID/AFR/ARTS/FARA  
Room 300, SA-18  
Department of State  
Washington, DC 20523-0089

Norman Rifkin  
AID/LAC/DR/EHR  
Room 2239, NS  
Department of State  
Washington, DC 20523

Gary Russell  
AID/LAC/DR  
Room 2239, NS  
Department of State  
Washington, DC 20523

Alex Segarra  
AID/LAC/DR  
Room 2239, NS  
Department of State  
Washington, DC 20523

Ambassador Sally Shelton  
Senior Advisor to the Administrator  
AID  
Department of State  
Washington, DC 20523

Garland Stanrod  
AID/G/PO  
Room 705C, SA-18  
Department of State  
Washington, DC 20523

George Taylor  
AID/ANE/ASIA/DR  
Room 3214, NS  
Department of State  
Washington, DC 20523

Dwight Walker  
AID/ANE/NE/DR  
Room 200, SA-2  
Department of State  
Washington, DC 20523

Robert Ware  
AID/FA/O/B/PCE  
Room 1507, SA-14  
Department of State  
Washington, DC 20523

John Wilson  
AID/G/R&D/ENR  
Room 506I, SA-18  
Department of State  
Washington, DC 20523

## GreenCOM TAG Members

### WALTER ARENSBERG

For the past six years, Mr. Arensberg has served as the deputy director of the World Resources Institute's (WRI) Center for International Development and Environment. In this role, he oversees the USAID-funded Environmental Planning and Management Project, which provides technical support services in strategic planning for resources management, environmental monitoring, and information systems, and training for community organizations throughout Africa, Asia, Central and South America, and the Caribbean. Prior to joining WRI, Mr. Arensberg was a consultant to the International Institute for Environment and Development, where he evaluated various programs implemented by non-governmental organizations (NGOs). He also was a general partner in the urban planning firm of Skidmore, Owings, & Merrill for 14 years, where he managed domestic and international land use, transportation and urban redevelopment projects, as well as conducted environmental impact assessments and policy analysis. From 1966 to 1968, Mr. Arensberg served as evaluation officer for the U.S. Peace Corps. Mr. Arensberg has a M.A. in city planning from Harvard University.

### JOHN BALDWIN

Dr. Baldwin is an accomplished environmental scientist and educator. Currently, he is head of the Institute for a Sustainable Environment, at the University of Oregon. In 1993, he served as president of the North American Association for Environmental Education (NAAEE), the largest professional organization of its kind in the world. He has extensive domestic and international experience on a range of environmental issues, but is especially well recognized for his work on the effects of pollution on humans. For NAAEE, he is working with colleagues in Kiev, Ukraine to establish an environmental education center in that city. Dr. Baldwin was also the principal investigator of a project entitled "Chernobyl: Applied Information for Education and Decision-Making" and continues to serve as a visiting associate professor of the environmental science program at the International University in Moscow. He has a Ph.D. in Zoology and Wildlife Ecology from the University of Wisconsin.

### JUDY BRAUS

A leading environmental educator in the U.S. and internationally, Ms. Braus is currently the director of environmental education for the World Wildlife Fund (WWF). Supported by a \$2.5 million grant from Eastman Kodak, she is developing and implementing a national biodiversity environmental education program for the U.S. Prior to joining WWF, she spent two years as Program Manager for Environmental Education with the U.S. Peace Corps where she: helped develop long-term objectives and plans for new environmental initiatives in several countries; developed model workshops to link environmental education with

English and science teaching; and designed an agency-wide strategy for incorporating environmental content into pre-service training for all Peace Corps volunteers. From 1987 to 1991, she served as the National Wildlife Federation's director of environmental education, and also was senior editor of the children's magazine, *Ranger Rick*. Ms. Braus is co-author of *Environmental Education: Creating a Program That Works!*, a 200-page book for national and international audiences. She has a B.S. in environmental science from the University of Maryland.

### **MARTIN FISHBEIN**

Dr. Fishbein is a preeminent behavioral scientist and creator of the *Theory of Research Action*. At present, he is professor of psychology and research professor at the Institute of Communications Research, University of Illinois. He is also a consultant to the National Institute of Mental Health's AIDS Research Program and serves on several NIMH advisory committees. Dr. Fishbein has been honored by the American Marketing Association for his contributions to marketing research. He holds a B.A. degree in psychology and economics from Reed College and a Ph.D. degree in psychology from the University of California, Los Angeles.

### **LYNNE HALE**

Ms. Hale is associate director of the Coastal Resources Center (CRC) at the University of Rhode Island (URI), an organization dedicated to developing strategies for the effective management of coastal environments in the U.S. and worldwide. She is a specialist in the design and management of coastal ecosystem management programs with more than 20 years of domestic and international experience in public education, participation, training, and outreach activities. Concurrently, she is assistant director of the USAID-funded Coastal Resource Management Project, a ten year cooperative program with major pilot programs in Ecuador, Sri Lanka and Thailand. Since 1977, she has worked intermittently on coastal and marine resource issues that impact native Alaskan communities. In addition to her position with CRC, she is an adjunct assistant professor in URI's Department of Marine Affairs. Ms. Hale has a M.S. in biological oceanography from the University of Rhode Island.

### **ROBERT HORNIK**

Dr. Hornik is an expert in development communications, evaluation design and analysis. He is professor of communications at the Annenberg School of Communications and director of the Center for International Health and Development Communication. His research has been instrumental in helping program and field practitioners develop a better understanding about the factors that influence people to change their health and nutrition behaviors. Dr. Hornik has served as principal investigator or co-principal investigator on five A.I.D.-funded research projects including HEALTHCOM and AIDSCOM evaluation subcontracts, and has participated in several prestigious committees, including the National Academy of Sciences' Committee on International Nutrition Programs, and the WHO/Global Program on AIDS'

Steering Committees on Behavioral Research and Evaluation. Among his numerous publications on development communication is *Development Communication: Information, Agriculture, and Nutrition in the Third World*. He has a Ph.D. in communication research from Stanford University.

### **WILLIAM NOVELLI**

Since 1990, Mr. Novelli has served as executive vice president and chief operating officer of CARE, a relief and development organization with long-term projects in health, agriculture, agroforestry, environmental protection, and small business support in developing countries around the world. Before joining CARE, he was president and co-founder of Porter/Novelli for eighteen years, the sixth largest public relations agency in the United States. Porter/Novelli is at the forefront of social marketing projects in developing countries, collaborating with non-profit organizations such as the Academy for Educational Development in implementing USAID-funded projects. From 1970 to 1972, Mr. Novelli was director of advertising and creative services at U.S. Peace Corps, where he directed promotion and recruitment efforts. For many years, Mr. Novelli taught graduate-level courses on business management and health communication and the mass media at the University of Maryland. Mr. Novelli holds a M.A. in communications from the University of Pennsylvania.

### **MARJORIE THORPE**

Since August 1992, Ms. Thorpe has been working at the United Nations Development Fund for Women (UNIFEM), first as deputy director and currently as acting director. She has held a range of prestigious posts, including United Nations Ambassador of Trinidad and Tobago from 1988 to 1992. A literary scholar who has served as university dean at the University of the West Indies, Dr. Thorpe spearheaded many initiatives to advance women's issues. In particular, she was the driving force behind the creation of a women in development studies program at the University and initiated other important research studies critical to women's issues. She has been a prominent advocate on behalf of gender and women in development and a frequent conference speaker on the subject. She is the recipient of several notable awards and fellowships, such as a Ford Foundation Fellowship to the Institute of Development Studies at the University of Sussex, a Senior Fullbright Fellowship, and the Canadian International Development Agency Fellowship. Dr. Thorpe holds a Ph.D. from Queen's University in Canada.

### **THOMAS ZOSEL**

An environmental engineer and pollution prevention specialist with 25 years of professional experience, Mr. Zosel is one of the nation's foremost experts and promoters of industrial waste reduction. Currently, he is manager and one of three initiators of 3M's renowned pollution reduction program, "Pollution Prevention Pays" -3P. Mr. Zosel has been at the forefront of developing corporate and industry strategies for promoting and adopting waste

reduction technologies in advance of new, more stringent environmental regulations. A nationally recognized authority on the Clean Air Act, regulatory reform, emission trading, and implementation pollution prevention technology, he is a member of EPA's Clean Air Act Advisory Committee and co-chair of the Subcommittee on Pollution Prevention and Early Reduction, and chair of the American Institute of Chemical Engineers Center for Waste Reduction Technologies. Mr. Zosel has a B.S. in Chemical Engineering from the University of Wisconsin.

## Annex D

### The Gambia Brief Country Profile

#### Country Overview:

- Situated in West Africa, The Gambia is bounded to the west by the Atlantic Ocean and on all other sides by Senegal. It is a small country with a total land area of about 400 square kilometers. Its most dominating feature is the River Gambia which flows the entire length of the country and has numerous creeks, known as bolons. Most of the land is low plateau, broken by a few flat-topped hills.
- Subtropical climate with dry season from November to May and wet season from June to October. Steady decline in rainfall throughout Sahelian Africa
- Over nine different ethnic groups with Mandinka, Fula and Wolof accounting for approximately 80% of the population.
- Population density over 80 per km, one of the highest in Africa. Density has almost tripled since 1963. About half of the population is under 15. In 1963, 9% of Gambians lived in greater Banjul area: in 1983, this had doubled to 21%.
- About 78% of eligible boys and 54% of eligible girls are enrolled in primary school. In rural areas, 45% of children attend informal/Islamic schools and 26% attend formal school. In urban areas, 15% attend informal/Islamic school and 62% attend formal school.
- The majority of Gambia's working population is employed in agriculture, feeding their own families and producing some surplus for sale.
- Groundnuts provide majority of export earnings; tourism is second largest export earner after agriculture.
- Irrigation used where and when there is insufficient rainfall; mainly used for growing rice during dry season.

#### Environmental Issues:

- Natural resources are degrading rapidly as a result of population growth and inappropriate resource use.
- Massive deforestation - dense forest has decreased from 60% to 5% since 1940 causing soil erosion, excessive runoff and destruction of habitats.
- Decreased biodiversity undermines tourist industry.

- Fuelwood consumption exceeds regeneration.
- Saltwater intrusion of Gambia River valley.
- Livestock displaced into less productive ranges.
- Adoption of new techniques (animal traction and horticultural crops).

**Response of the Government:**

- Signed Banjul Declaration (1977)
- Developed Gambia's Environmental Action Plan (1992-2001)
- Established National Environmental Agency in Office of the President
- Made grant to Land Tenure Center to study land tenure patterns
- Negotiated Agriculture and Natural Resources (ANR) Project with USAID
- To strengthen institutional capacity of Ministry of Natural Resources and the Environment and other agencies;
- To facilitate the adoption of community-level natural resource management;
- To increase environmental awareness and understanding and to bring about effective public participation and community involvement in environmental management (GreenCOM component);

**GreenCOM Activity:**

- Dr. Irma Allen as resident advisor (24 months)
- In coordination with EE&C working group and ANR project
- Three goals/elements of EE&C activity
  - To introduce environmental concerns into formal education system
  - To increase environmental awareness and responsiveness of government staff and community leaders
  - To increase public awareness and participation in environmental concerns through non-formal education targeted at specific knowledge, attitudinal and behavioral objectives (e.g., reduced burning of grasslands, increased participation in tree planting, live fencing, windbreaks)

### **GreenCOM Research Requirements:**

- At least one EE&C impact evaluation study
- At least three small operations research studies
- Gender issues and differences integrated throughout

### **Abbreviations:**

MNRE	Ministry of Natural Resources and the Environment (1990)
GEAP	Gambia Environmental Action Plan (1992-2001)
NEA	National Environmental Agency
ANR	Agriculture and Natural Resources Project with EE&C component facilitated through GreenCOM

### **Support Materials Available:**

- GreenCOM Delivery Order
- Social Studies Atlas
- Population Data Bank
- Gambia Environmental Action Plan
- CV on Dr. Irma Allen (GreenCOM Resident Advisor)
- Environmental Education and Communication Inventory

### **Studies to be designed:**

- Impact evaluation of teacher training and supplemental curriculum materials  
  
Study to assess the impact of teacher training and supplemental support materials on schools, teachers, children, parents and community. What is the role of education in facilitating behavior change of the teachers, students and parents? See briefing book for description.
- Operations research study of the Foni Jarrol Conservation District to assess the formation of Village Conservation Committee to manage the use of land use patterns to protect their watershed. See briefing book for description of work of soil and water management unit.
- Using a National Environmental Award Scheme to influence the public's knowledge, attitudes, beliefs and behaviors: How to take the next steps  
  
Study of the National Environmental Award Scheme currently being run (see briefing book) to determine how to assess its impact and how to take it to the next steps.

## **El Salvador Country Profile**

### **Country Overview**

- Situated in Central America, Guatemala to North and Honduras to the East. It has 8,124 sq. miles, about the size of Massachusetts.
- Topographically, the country has a hot Pacific coastal plain rising to a cooler plateau. Valleys are densely populated.
- Population is 5.6 million (1992 estimate) with a density of 686/sq. mile. For comparison purposes, the population density of other countries is: Guatemala 234/sq. mile; India 700/sq. mile; Belgium 848/sq. mile.
- Seventy-five percent of the population is literate. There is an 82% attendance rate among the primary school age population. Important urban-rural variations exist.
- In terms of communications and media, there is 1 TV/12 persons and 1 radio/2.6 persons. Daily newspaper circulation is 47/1000 persons.
- The labor force structure is such that 40% of the population is in agriculture, 27% services and 16% industry.
- Twenty-seven percent of El Salvador's land area is arable.
- Main crops are: coffee (22% GDP), cotton, corn and sugar. Main industrial subsectors are: food and beverages, textiles and petroleum products.
- Per capita GDP is \$1,010.
- There are climatic variations depending on altitude. Average annual temperatures are 28°C, 22°C and 20°C for <500, 500-1000 and >1000 meters above sea level respectively. The rainy season, which usually begins in April/May, may last from 5 to 7 months depending on the altitude.
- There are several volcanos (Santa Ana, San Salvador, Izalco, San Vicente, Tecapa, San Miguel) parallel to the Pacific Coast.
- There is considerable seismic activity in El Salvador. Most of the epicenters for tremors and earthquakes has been in the Pacific. The last massive earthquake struck the capital in 1986.
- The country had a civil conflict from 1979 to 1993.

## **Environmental Issues**

- Soil:** Soil erosion affects 50% of the land. Losses to erosion in one representative watershed were estimated to be 50 tons of soil per hectare annually.
- Forest:** Ninety-eight percent of El Salvador's original forest has been cut. The main reason for deforestation is the conversion of forest to agriculture. Furthermore, annual consumption of firewood exceeds sustainable supply by 50,000 hectares. In rural areas, 92% of energy consumed is firewood. Seventy-five percent of fuelwood consumed in rural areas is gathered from scrublands, fence rows, and individual trees.
- Water:** A major concern is water pollution. Ninety percent of rivers are polluted with sewage, agricultural runoff (particularly pesticides), industrial waste and sediment. There are no functioning sewage treatment systems. Thus, raw sewage and a variety of industrial contaminants flow directly into rivers.
- Coastal Resources:** Red tides are frequent, damaging the fisheries industry. The catch of white shrimp, lobster, rock crab and grouper have declined considerably.
- Biodiversity:** A 1985 Environmental Profile for El Salvador indicated that there are 700 tree species, 365 orchid species and 75 bromeliad species. In terms of fauna and major groups, 110 mammals, 450 birds, 80 reptiles, 30 amphibians, 40 freshwater fish and 700 marine fish have been identified.
- Protected land which theoretically shelters most of the biodiversity is less than 0.6% of the country's surface.

## Response of the Government

- The National Council for the Environment (CONARA) was created in 1991. The Council brings together representatives from all ministries plus the Office of the Presidency and the Salvadoran Institute for Municipal Development.
- CONARA has a coordinating and monitoring unit: the Secretaria Ejecutiva del Medio Ambiente (SEMA). This unit developed a National Environmental Emergency Plan in 1992.
- SEMA has responsibilities over activities carried out by the Ministry of Agriculture through its different entities: the Agricultural Technology Center (CENTA), which is involved in agricultural extension and agroforestry; the Directorate General for Natural Resources (DGNR), which is involved in national park and forestry management; and the Center for Fisheries Development (CENDEPESCA). It also has responsibility for coordinating the environmental education activities of the Ministry of Education; urban water systems implemented by the Ministry of Public Works; power supply implemented by the Ministry of Economy; and rural potable water interventions implemented by the Ministry of Health.
- There are several fledgling, poorly-financed environmental NGOs working at the community, regional, and national level in El Salvador.
- SEMA is the implementing agency for a the USAID-funded Salvadoran Environmental Protection Project (PROMESA). This project has three major components:
  - policy reform,
  - demonstration interventions in a demonstration area, and
  - environmental education.
- Under PROMESA, the field demonstration area will be established to measure the effects of policy reform, environmental education and improved conservation practices. Practices will include techniques for erosion control, improved water management, sustainable fuelwood and secondary forest product extraction, and natural habitat protection. The operation of three natural resource units of the Ministry of Agriculture and two NGO's working in the area will be strengthened. In addition, two municipal governments will be involved in showing the how and why of natural resource management.

## GreenCOM Activity

- Provide technical assistance for the implementation of the environmental education component of PROMESA.
- More specifically, GreenCOM will provide assistance to:
  - develop a National Environmental Education Plan;
  - plan and implement a series of national public awareness campaigns through media and outreach activities of different organizations;
  - help integrate environmental education to school curricula;
  - train extension agents in pesticide use, soil conservation and agroforestry particularly connected to fuelwood use;
  - begin education and interpretation centers in parks;
  - mobilize municipalities around environmental issues;
  - develop environmental education activities in support of environmental interventions in the demonstration area.
  - provide 36 person-months of long-term resident advisor (Jose Ignacio Mata).
  - provide 76 person-months of short-term expatriate technical assistance.
  - provide 136 person-months of local hire services.
  - provide 50 person-months of short-term participant training in environmental education and communication (EE&C) techniques.
  - provide 72 person-months of long-term participant training.
  - Prepare an implementation plan in June. Seven foreign experts in different fields (formal education, mass media campaigns, national parks and interpretative centers, agricultural extension, community mobilization and applied research) will participate in the development of this plan. In addition, they will provide input to the drafting of the National Environmental Education Plan. (See chart on team members traveling to El Salvador on this assignment.)

## **GreenCOM Research Requirements**

- At least two EE&C impact evaluation studies.
- At least six small operations research studies.
- Gender issues and differences integrated throughout.

### **Studies to be Designed**

- **Comprehensive school-based sampling frame**

Use a comprehensive school-based sampling frame to study the impact of all interventions. Use multiple stage random sampling to draw samples of program beneficiaries. Select first a school, then a class, and finally students within a class; then obtain a sample of parents (male or female) participating in a project supported activity. Because of the lack of (other) sampling frames, this would provide a potential mechanism to get a representative sample. However, because of the school drop out rate, it may prove more advantageous to work with early grades at the elementary school level. A weighting procedure may be developed to allow for extrapolation of results to the general population. The identification of households with children enrolled in school may serve as the basis to identify relatively comparative households where children may not be attending school.

- **Women as entry points for behavior change**

Agroforestry projects carried out in Central America have found useful the involvement of female farmers in the implementation of interventions that are perceived risky by male farmers. In couples where both members are farmers, risk taking may be less in those plots managed by women. The success of interventions carried out in female-managed plots have been emulated by men. Interventions that selectively target female and male farmers to better understand their behaviors, adoption rates and spread effects may have different economic implications.

- **Park interventions**

Environmental education is often defined by Salvadoran authorities as the knowledge and attitudes necessary to understand and appreciate an individual's relationship with his or her environment. One main objective of environmental education programs is to generate new cultural perceptions, attitudes and behaviors in the relationship people have with their physical environment. In this regard, there is interest in understanding the impact that intermediate behaviors and mental shortcuts have on

environmentally sound practices. To what extent might interpretative centers in parks play in helping to develop these mental short cuts and intermediate behaviors? How can park-based EE&C interventions be assessed to shed light on this issue?

- **Impact of policy**

Currently, some environmental NGO's are promoting reforestation initiatives that require tree cutters to plant 200 seedlings for every tree felled. If such an approach were to become national policy, an assessment of adoption rates by different groups (i.e., fuelwood gatherers, furniture makers) and the related incentives to encourage them to abide by such a law might be conducted.

## **Support Materials Available**

USAID. PROMESA Project Paper.

USAID. GreenCOM's Delivery Order.

Current, Dean and Modesto Juárez. **The Present and Future Status of Production and Consumption of Fuelwood in El Salvador.** Tropical Agricultural Center for Research and Training (CATIE), August 1992.

Davenport, Russell. **Environmental Education in El Salvador: A Diagnosis.** PACA/CARE/USAID. April 1992.

Ham, Sam. **Environmental Interpretation. A Practical Guide for People with Big Ideas and Small Budgets.** North American Press: Golden, Colorado. 1992.

Requena, Fernando L. and Becky A. Myton. **Surface and Groundwater Contamination in Selected Watersheds in Southwestern El Salvador.** Water and Sanitation for Health Project. December 1991.

Requena, Fernando L. and Emilia de Quintanilla. **El Salvador: Program for Monitoring Surface and Groundwater in the Watershed Between The Barra de Santiago and El Imposible.** Water and Sanitation for Health Project. September 1993.

Secretaría Ejecutiva del Medio Ambiente (SEMA). **Environmental Strategy and Action Plan. Summary of Objectives and Strategies.** January 1994. (Spanish).

Serrano, Francisco L. et. al. **Biodiversity and Ecology in the Watershed of the Barra de Santiago/El Imposible.** Salvanatura. July 1993. (Spanish).

Several ecological/biodiversity maps.

## **Gender in Jordan Brief Profile**

### **Key Gender Issues:**

- Sensitivity to gender considerations needs to be integrated throughout the development and implementation of environmental education and communication activities, including all research activity.
- Gender differences might include:
  - Differential impact of environmental degradation and improvement;
  - Differential knowledge, attitudes and beliefs about the environmental and environmental behaviors and practices;
  - Differential impact and receptivity to EE&C interventions;

### **Country Overview:**

The Hashemite Kingdom of Jordan was established in 1922 in the Eastern region of the Mediterranean to the east of the Jordan Rift Valley. Its population of 3.5 million occupies an area of 90,000 square kilometres. Its population growth rate is 3.4 % with 48% under 14. Its population is primarily urban--1,089,650 live in Amman. Rough estimates place the Palestinian refugees from 1948 and 1967 as approximately 35-45 percent of the total population.

Jordan's limited natural resource base include Phosphate, Potash and Limestone. Less than 7% of its land area is arable. Virtually all of its oil needs are imported and water is a scarce resource. It has a small productive base and the service sector accounts for more than 60% of GDP. Women are generally excluded from this sector. Life expectancy as of 1990 is 65 years, infant mortality at 45 per 1000, literacy was 70% in 1990. School enrollment is 94% for basic education and 66% for secondary education. Most of the population has access to electricity and potable water through house connections. 18% of the population lives below the poverty line and the unemployment rate is at 20-25% and increasing due to a downturn in the regional economy. 49% of the population is female.

In 1989 51,819 women were employed in the formal sector (compared to 158,812 men). In 1986 a World Bank study of working women in the Government of Jordan (GOJ) showed 94 in all departments, of which 64% were in clerical, administrative or secretarial positions. Less than 24% were professional women.

Current A.I.D. projects to help women include the Jordan River Design project which provides income-generation activities to 250 families Save the Children which reaches 800 rural poor through its income-generation activities for women. The National Handicraft Development Program reaches 2,500 women.

Traditionally women's orientation, in Islamic and Christian families, is to the home, children and the extended family. Laws do not discriminate against women in salaries or retirement benefits. Other gender-related statistics are difficult to obtain.

### **Environmental Issues:**

Jordan has three climactic regions The Jordan Valley which includes the Jordan River basin, the Dead Sea and Wadi Araba--Western border of Jordan. Rainfall in this region is between 300 and 100mm. The mountainous region, with elevations from 750-1200 metres has rainfall from 300-500mm with occasional snow. The Badia region (elevation 600-700 metres) is cold and dry with rainfall averaging 70mm/annum.

Precipitation is the major source of fresh water. Most regions are considered arid or semi-arid with a dearth of water for farming, grass or even trees. It is also the principal source of water for rivers, streams, dams, springs and underground water. The rainy season is October to April (85% of all water falls in that period).

All development is affected by water availability. In 1990 Jordan's water need was estimated at 990 MCM (Million cubic metres) of which 880 were supplied. This need is increasing. 92% of the rainfall evaporates. 5.4% of rainfall replenishes groundwater, while surface runoff amounts to 2.4%. Rainfall is unsteady.

Jordan shares its water resources with its neighbours, making it highly dependent for its water needs. The River Jordan basin is its most important water source where allocation of water quotas with other riparians remains a major issue. There is no regionally unified and agreed management plan for sharing this resource. The Yarmouk River Basin is considered to be the backbone of development in Jordan.

Major environmental issues related to water:

- Protection of water resources from contamination
- Reduction of losses from the water supply
- Improvement of irrigation efficiency and crop yields
- Reuse of treated water waste in irrigation and industries
- Improvement in domestic water use efficiency

Water problems in agriculture include:

- Demographic changes leading to population growth leading to political instability
- Lack of irrigation water
- Soil salinity in times of scarcity
- Increased use of fertilizers and pesticides to improve efficiency
- There is no land use management plan

### **Response of the Government:**

Multiple (See UNCED report)

### **GreenCOM Activity:**

- Technical assistance to the Royal Society for the Conservation of Nature in their implementation of a grant under the USAID/Jordan Water Quality Improvements and Conservation Project (one local expert for one year and five weeks of short-term technical assistance);
- Study of gender differences in designing and implementing EE&C funded by the R&D/WID to core contract.

### **Abbreviations:**

RSCN Royal Society for the Conservation of Nature  
GOJ Government of Jordan  
Essential Schools=Primary Schools

### **Support Materials Available:**

- GreenCOM Delivery Order (WID office)
- Description of RSCN and its mission
- Description of GreenCOM activity with RSCN
- Study description
- Jordan Country Report to the UN (UNCED)
- Water issues in Jordan and Jordan Environmental Act
- Ecoclubs--breakdown by boys and girls schools
- Map of Jordan

### **Studies to be designed:**

- Study of the differential impact on girls and boys of environmental education in a school club setting (see description in briefing book). Note that since there are single gender and mixed schools, we have the opportunity of determining if the differential impact on girls and boys is different in single gender vs. mixed schools.
- Impact evaluation study of the participatory teacher/student training of the kind conducted by RSCN, including impact on teachers, students and parents.
- A comparison of elite vs. community women (class) in their perceptions of the importance of water and in their receptivity toward household water consumption patterns.

## Annex E

### Environmental Education and Communication (GreenCOM) Project Technical Advisory Group (TAG) Meeting June 9 and 10, 1994

#### GreenCOM TAG Breakout Group Assignment Developing Model Applied Research Studies

The purpose of the afternoon session is to develop model studies for applied research to help design and evaluate environmental education and communication activities. Your advice will help us in two ways:

First, since I have chosen three country projects that we are in the process of implementing, your advice will help us design specific studies.

Second, the logic and thinking behind your advice will help us more generally as we look for research opportunities in other projects. So we are particularly interested in the whys of the design.

You will have three hours from 1:30 until 4:30. In this time, we would like you to complete the following steps:

Introduce yourselves to each other.

One of the objectives of this first TAG meeting is to familiarize us with each other. There is a bio of each TAG member and GreenCOM staff member provided in the briefing book. Since we are a multidisciplinary team, please focus on the disciplinary skills and approaches you bring to the group.

Choose a TAG member as the reporter.

The reporter will be responsible for leading a discussion of the group's recommendations and seeing that the recorder prepares the study description to facilitate this presentation.

Review of the profile of the country.

The briefing book contains a 3-page brief country profile. Susan, Rick and Mona can lead this review.

Review the studies to be designed.

At the end of each profile, I have briefly outlined three studies. I would like design advice on each of these studies.

Review the study description outline - (the last page of this document).

This outline shows the information we would like included about each study. As you can see, there are several places where I would like you to describe the logic and thinking behind the study. This will help us as we generalize your advice to other research opportunities.

Design three applied research studies for that country.

You will have one hour for each study. Take 45 minutes to develop the design and 15 to finalize. The AID staff member is responsible for keeping the group on time.

Use other information as available.

For your reference, your briefing book contains a brief country profile, the project delivery orders and other information. In addition, in each room we have provided additional support materials. The available project materials are listed at the end of the country profile. The GreenCOM staff members will be responsible for providing information about the projects and for ensuring that the advice given is useful and on target.

Make assumptions if necessary.

In some cases, the specific information will not be available. At this point, the group will have to make some assumptions. The GreenCOM staff members will assist in determining when it is necessary to make assumptions and in identifying the most useful assumptions.

Complete a study description.

We have provided a flip chart to assist in the development of the design. Once each design has been finalized, we have provided a recorder and a personal computer for each room to facilitate the preparation of a written description. The recorder will essentially fill in the study description outline under the group's direction.

Again, take about 45 minutes to develop design and 15 to finalize.

Review study description.

The recorder's responsible is to complete the form under the direction of the TAG members. The recorder can print this draft description for review by all team members. Each study description should be in outline form - no more than 2 pages.

Turn in study descriptions.

To Laurie Clark by 4:45. We will then duplicate them for distribution to the entire group. The recorder will know where she sits.

Come to reception.

On Friday morning, the TAG member nominated to be reporter will present the study designs and lead a discussion to get feedback from the other TAG members and the GreenCOM team.

Summary of responsibilities:

TAG member reporter	Report on recommendations Direct recorder in completing study description
Other TAG members	Design and give rationale for design.
GreenCOM staff	Provide project and country information. Keep advice useful.
AID representatives	Keep group on time. Help keep advice useful.
Recorder	Assist reporter in completing study description.
All	Give sage and useful advice.

Good Luck and Thanks.

**Country:**  
**Model Study Description:**

**Purpose:**

**Method:**

**Participants:**

**Design:**

**Instruments:**

**Hypotheses:**

**Assumptions:**

**What cutting edge issue is being addressed and why this issue is important:**

**Key environmental behaviors to be addressed:**

**How the study will inform the analytic framework:**

**Other comments:**

