



Technical Advisory Group Meeting Summary Report

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

January 22-23, 1998

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EXECUTIVE SUMMARY

The 1998 Technical Advisory Group (TAG) meeting of the Environmental Education and Communication (GreenCOM) Project was held on January 22 and 23, 1998, at the Academy for Educational Development in Washington, D.C. This report provides a brief overview of the presentations made by the GreenCOM team describing the applied research activities either completed or initiated since February 1997 or to be initiated in 1998. This report also attempts to draw overall content and recommendations from the discussions and consultative sessions regarding current and future research as well as program activities which were highlighted at the meeting. A copy of the meeting agenda is provided in Annex A. Visuals used in making specific country presentations during the TAG as well as summaries of the research activities presented are included in Annexes D and E.

The purpose of the annual TAG Meeting is to review GreenCOM's applied research activities and provide guidance on the development of future research endeavors. The meetings further assist the project in achieving its goals within the strategic framework of the U.S. Agency for International Development's (USAID) Center for Environment, the Center for Human Capacity Development and the Office of Women in Development. GreenCOM also uses the opportunity to highlight its major accomplishments and obtain guidance for upcoming communication and educational interventions.

TAG members, GreenCOM staff, USAID project officers and guests attended the meeting. The participant list is included in Annex B.

TAG members were asked for their input regarding:

- ▶ the core elements and evaluative techniques regarding a participatory approach to research;
- ▶ recommendations regarding activities to be initiated in Egypt pertaining to the enforcement of an environmental code which can focus on industrial pollution control;
- ▶ suggestions pertaining to the direction of GreenCOM's future applied research agenda in El Salvador where EE&C activities will be focused on water quantity and quality in one watershed.

Regarding a participatory approach to research, TAG members suggested many core elements which make up such an approach. Some of these elements included:

- ▶ Process used in the selection of stakeholders representing the views of different interest groups invited to participate in the design of an intervention.
- ▶ Core constituencies that end up being represented at a negotiating table.

- ▶ Catalytic and negotiating role played by outside EE&C and development professionals.

TAG members also had suggestions on how to evaluate participation. For example,

- ▶ Participation should be considered a means and not an end in itself. Consequently, evaluations should focus on how a participatory process contributes to changes in attitudes, beliefs and practices that have environmental implications.
- ▶ Design evaluations that allow for comparisons between participatory vs. non-participatory EE&C initiatives.
- ▶ Determine if the creative thinking and empowerment that have presumably resulted from participatory initiatives survived the first participatory experience, and whether they are being applied in other development efforts undertaken by the concerned communities.
- ▶ Have participatory initiatives evaluated by outside evaluators to add objectivity to the design, findings and their interpretation.

An important caveat of participatory initiatives is that they can be costly: timewise, environmentally and financially. Science is not always the leading contributor in participatory development initiatives. Culture and politics may play that role and have a greater influence on the content of interventions than science. Consequently, communities should be properly advised to prevent them from making inappropriate decisions.

Regarding activities in Egypt TAG recommendations included the following:

- ▶ identify and target the most polluting industries and in so doing reduce the number of industries that would be targeted;
- ▶ further segment them either by sector (i.e., air, water, tourism) or by ownership status (i.e., foreign or Egyptian which could be either private or public);
- ▶ sell compliance with environmental pollution code as a means of being cost-effective, facilitate companies to go through different stages of the compliance process, create a fund to help companies start cleaning up, and stress compliance both as a right and a responsibility for which complying industries may be rewarded;
- ▶ get support from different sectors of society expressing their favorable attitude about compliance with the environmental code;
- ▶ use social clubs and chambers of commerce to develop mentoring relationships between industries and for rewarding industries that have complied.

Regarding El Salvador, the TAG members suggested:

- ▶ adopting a different educational content for upper vs. lower watershed residents; emphasizing in each case immediate advantages that may result from the adoption of behaviors appropriate for each sub-audience;
- ▶ including a control group to the research design to ensure that the impact of contextual trends is taken into account when reporting program impact;
- ▶ consider the applicability of using a school-based sampling framework;
- ▶ if omnibus surveys are used, over-sample the watershed where the intervention will be implemented or request that a special sample be drawn from the area by the firm implementing the omnibus survey.

BACKGROUND

GreenCOM is the United States Agency for International Development's (USAID) Environmental Education and Communication (EE&C) Project. Initiated in October 1993, GreenCOM has a seven year contract with USAID's Bureau for Global Programs, Field Support and Research. The Technical Advisory Group (TAG) meetings assist the project in achieving its goals within the strategic framework of USAID's Center for Environment to ensure GreenCOM's applied research activities constitute a valuable contribution to efforts to promote sustainable living resources, sustainable energy use, and sustainable cities. Other USAID objectives addressed by GreenCOM include improving basic education and embedding gender analysis within each project activity.

GreenCOM has worked with USAID missions, bureaus and host countries to address a wide range of environmental concerns, from municipal solid waste disposal, water and biodiversity conservation, to community management of forest and coastal resources, environmental policy formulation, training, and advocacy. Presently, environmental education and communication (EE&C) activities have been completed, or are now being carried out by GreenCOM, in 24 countries. Four of these are emphasis countries: El Salvador, Egypt, the Gambia, and the Philippines. To date, GreenCOM's applied research activities across these countries include formative (operations) research studies and impact evaluation studies. Gender analysis, or the exploration of differential roles, views and/or effects of an intervention by gender, is an integral component of each project activity.

The fourth annual TAG meeting of the GreenCOM Project was held on January 22 and 23, 1998, at the offices of the Academy for Educational Development in Washington, D.C. The purpose of the annual TAG meeting is to review and critique applied research activities completed by GreenCOM during the past year and provide expert recommendations regarding the project's future applied research agenda.

The TAG members are a voluntary advisory group of professionals and academicians who are recognized experts from a wide range of fields. These specialists bring a diverse set of skills and experience to bear upon the field of Environmental Education and Communication. In attendance at the meeting were: John Baldwin, Martin Fishbein, Lynne Hale, Robert Hornik, Paul Nowak, Tiahoge Ruge and Thomas Zosel. Brief biographies of each TAG member are provided in Annex C.

The primary objectives of the 1998 TAG Meeting were to:

- ▶ Familiarize TAG members with applied research activities conducted by GreenCOM since the third TAG meeting convened in February 1997;
- ▶ Pursue input from TAG members regarding core elements and evaluative methods for a successful participatory EE&C initiative;

- ▶ Seek recommendations by TAG members on using social marketing as a way to drive environmental compliance in Egypt;
- ▶ Invite suggestions from TAG members regarding the direction of GreenCOM's future applied research activities in El Salvador.

GreenCOM uses the input provided by TAG members to enhance the design and emphases of its applied research activities. TAG members' recommendations will further assist GreenCOM in identifying those methods and evaluative techniques used by the project which have the strongest potential of contributing to the field of EE&C, and should thus be the focus of dissemination efforts.

The structure of this report follows the agenda of the meeting and first summarizes introductory remarks made at the meeting. Secondly it focuses on the presentation of current research activities in five sites. Thirdly, it provides a summary of the discussion regarding participation. This portion will also include remarks made in separate group discussions which focused on three different GreenCOM research activities. The final section will review comments about research activities in Egypt and El Salvador. For detailed descriptions of each of the research activities presented at the meeting by GreenCOM staff, see Annex D.

Opening Remarks

Stephen Moseley, President of the Academy for Educational Development, gave a brief welcoming speech. Additional opening remarks were made by William Sugrue, Deputy Assistant Administrator, Center for Environment of USAID.

Mr. Sugrue described GreenCOM as his favorite project in the USAID portfolio. He also stated how environmental issues are continuing to be a priority. To make this point, he gave an example on how his daughter is learning about greenhouse gases in her elementary school class. Other comments included measuring success and future funding for GreenCOM projects.

Purpose of the 1998 TAG Meeting

Presenter: Kate Barba, USAID GreenCOM Project Officer

Ms. Barba explained that the TAG Meeting is held annually to obtain vital input on GreenCOM applied research activities from the TAG Members who are experts in the social sciences and education. The primary purpose of TAG members is to assist GreenCOM in examining the project's field activities, providing input on research design, both conceptual and procedural, and carrying out EE&C activities.

Anthony Meyer, USAID Senior GreenCOM Project Officer

Dr. Meyer indicated that GreenCOM activities have moved from often being a focalized intervention to having national implications, thus contributing to the heating-up process and helping different sectors in society get involved in environmental protection and conservation. The work in El Salvador as well as the future work to be done in Egypt described later in this document are perfect examples of what GreenCOM's activities can do.

GreenCOM and the Social Dimension

Presenter: Brian Day, GreenCOM Project Director

Mr. Day noted that the theme for this year's TAG is the Social Dimension of EE&C. He then addressed the question "Why is GreenCOM growing now?" Mr. Day attributed GreenCOM's success to three factors: 1) Environment is a priority, 2) GreenCOM now has a proven track record, and 3) GreenCOM's outreach to communities to involve them in their own environmental issues. Mr. Day completed his remarks with a request for the best methods to involve populations in environmental communications and education.

Cross-Cutting Issues for GreenCOM Research: An Overview

Presenter: Susan Middlestadt, GreenCOM Senior Research Advisor

Dr. Middlestadt introduced the presentations to be given by members of the GreenCOM team as brief summaries of completed and ongoing research activities that illustrate the value of moving beyond the technical fixes and physical infrastructure. The activities described address USAID's Center for the Environment strategic objectives in three critical areas: Biodiversity, Forestry, and Water.

Summaries of each of the research activities presented at the meeting are included in Annex D and E.

BIODIVERSITY AND FORESTRY

Nicaragua - *Identifying Turtle Protection Behaviors*

Presenter: Richard Bossi, GreenCOM Latin American Task Manager

The main point of this presentation was the perceived difference, among Nicaraguan respondents to GreenCOM interviews, between behaviors performed by individuals and those that can be performed by the community. Mr. Bossi outlined the context of the research, within the La Flor Wildlife Refuge, a nesting beach for Olive Ridley sea turtles. Current policy includes a moratorium on turtle egg collection from July to January and a government-established egg distribution program. There has been increased pressure on the turtle population at La Flor since an influx of newcomers moved to the area. GreenCOM research sought to find out where to focus an educational intervention relating to turtle egg protection based on input from three sources: 1) community members, 2) biologists, and 3) the government. Data from the first source, the community, indicated that respondents perceived a difference between what they can do and what the community can do to ensure there are always turtles. That is, certain behaviors must be adopted community-wide for turtles to be protected; individuals cannot protect the turtles alone. Data was also presented about respondents= actual behaviors. Barriers to protecting turtles were also identified.

Recommendations for future initiatives were also presented as follows:

- ▶ address both individual behavior and community practices
- ▶ tell individuals what actions they can adopt as individuals
- ▶ allow community participation in decision-making

Nepal - *Research: A Light in the Forest*

Presenter: Orlando Hernández, GreenCOM Director of Research

Dr. Hernández discussed research in Nepal in relation to the goals of the Environment and Forest Enterprise Activity there. These include: the creation of 1600 Community Forest User Groups (CFUGs) with up to 270,000 members, and an increase from 5 to 62% of the forest land area under CFUG management. Research findings indicated that addressing three core areas 1) knowledge of policies and regulations 2) skills, and 3) perceptions about community forestry will lead to successful community forestry. Of particular interest are the community forestry policy and the soil-conservation policy because they pertain directly to how CFUGs are formed and how CFUG forest management plans are prepared, approved and implemented. Key skills needed by CFUG members include appropriate silvicultural and soil-conservation techniques. Perceptions about community forestry that matter for successful community forestry to be include: a community sense of ownership, a sense of collective responsibility, timely resolution of boundary conflicts, and a sense of struggling toward a common goal. Female participation in

CFUGs was also discussed. Dr. Hernández stated that, while there is some female participation, it is not broad-based and it is relatively recent. Also, females have so far been excluded from training sessions.

Recommendations regarding the content of educational materials to be produced include:

- ▶ information about policies, procedures for the formation of CFUGs, and the required content of CFUG constitutions and forest management plans;
- ▶ ways of conflict resolution;
- ▶ different silvicultural and forest protection practices;
- ▶ underlying themes such as sense of ownership, the CFUGs unity and the importance of forest.

Comments/Questions

Nicaragua

- ▶ Is there a threshold of *Acommon good*; how many people need to be involved in the behavior (turtle protection) for others to join in ?
- ▶ What role do market issues play? Are people going to stop being involved in poaching eggs just to *Aparticipate in good behavior* or based on market situations?
- ▶ Although turtle eggs are not seen as an aphrodisiac in the buffer zone communities around the Refuge, other areas do see the eggs as having such a power and this does increase the market for them.
- ▶ Submit research findings to the Nicaraguan government and allow for a process to have them understood by appropriate officials.

Egypt - Building Partnerships: How District Irrigation Engineers Can Help Save Water

Presenter: Cheryl Groff, GreenCOM Egypt's Resident Advisor

Ms. Groff presented the just completed KAP study of district irrigation engineers, starting with a brief outline of the project in Egypt which is tied to the Water Policy Reform Program. Our researchers focused on district irrigation engineers since they are the front-line representatives of the Ministry of Public Works and Water Resources. These engineers are directly involved with the farmers in the country, and farmers use 86% of the water in Egypt. One of the many problems in communication between these two groups is the very high ratio of farmers to engineers (more than 400/1). The study focused on: (1) the knowledge district irrigation engineers have of different policies and their perception about how competent they feel to explain these policies to water users; (2) the engineers' knowledge about the water situation in Egypt and ways in which improvements in water quality can also increase water availability; (3) the engineers' attitudes toward farmers and water user groups; and (3) the extent to which the engineers teach farmers how to manage irrigation water more efficiently. This research was helpful in identifying training content for the engineers, and in identifying indicators and targets to measure the success of these training activities. Findings suggest that engineers:

- ▶ report being acquainted with the major policies concerning the use of irrigation water, but do not feel confident enough to inform farmers properly about these policies;
- ▶ have positive attitudes about farmers and about farmer participation in decision-making, but only half are aware that water user associations exist and only a few were able to explain why a farmer should join a water user association;
- ▶ declare they know ways in which farmers could save water; but only half could cite the leading way of saving water (>do not overwater=), and only one third were able to cite three practices farmers can adopt to save water; and
- ▶ only 12% were currently doing at least two things to help farmers save water.

Recommendations for content of training activities included: informing engineers about policies and WUAs (Water Users Associations); increasing the perception that irrigation engineers have both technical and communication responsibilities; developing a link between water pollution and water quantity; improving engineers' skills in communication with farmers; and improving engineers' skills in conflict resolution.

El Salvador - *Sustainability of Water Projects in Rural Communities*

Presenter: José Ignacio Mata, GreenCOM El Salvador's Resident Advisor

The main point of this presentation: increasing access to clean water in rural households. Two action tracks were presented. The first involves environmental education in the watersheds, which has three components: 1) viewing the watershed as a source of water for human consumption, 2) having municipalities view the watersheds as a collective responsibility, and 3) adopting new agricultural practices in the watershed. The second track addresses the involvement of the population to achieve sustainable municipal water projects, going beyond physical infrastructure and including men and women as a focus of projects. Many ways of involving the population were discussed. Specifically, empowering municipalities by training specialized teams, assisting authorities in policy formulation, and developing the capacity of the community to organize. Other ideas included local education, communication campaigns, and maintenance training. Often when the infrastructure breaks down there is nobody to fix it properly.

Middle East - *Consensus Building Around Best Practices in Water Conservation*

Presenter: Mary N. Sebold, GreenCOM Program Officer, Middle East

The Middle East Peace Process (MEPP) is a separate entity involving a variety of working parties, specifically the Multilateral Working Group on Water Resources (MWGWR), the group with which GreenCOM has been most involved. Ms. Sebold presented GreenCOM supported research findings about best practices in domestic water conservation in the Middle East, both qualitative and quantitative data. The qualitative research involved a description of best practices, both in modernity and from antiquity. Two examples of best current practices were presented. The first was from the Palestinian areas; a decal promoting water conservation. The second involved water saving devices in use at an Israeli kibbutz. The quantitative research presented awareness of MEPP and MWGWR among four groups who took part in an omnibus survey (Jordanians, Israelis, Palestinians and Tunisians). The data indicated that awareness of both MEPP and MWGWR was highest among Jordanians and that Palestinian women were more aware than Palestinian men.

This research will be used to develop best practices videos for each site and for the region during a second project stage. It is also being used to determine the best media for dissemination of water conservation information. The main conclusion from this presentation was that sharing best practices around a common topic like water scarcity will both conserve water and foster peace.

Comments/Questions

Egypt

- ▶ Is training for the engineers sufficient to change their behaviors: explaining policies to farmers, promoting water user associations, teaching farmers appropriate ways to manage water efficiently? Often when training occurs out of context, behavior change is not initiated let alone sustained.
- ▶ Even if the training does work, the engineers relate to so few people, due to high ratio of farmers to engineers- can the message really get out ?
- ▶ The Water Communication Unit needs to have a better idea of what engineers do and communicate that information back to the Ministry.
- ▶ The Water User Associations want the farmers to eventually be able to fix any technical problems and check for clean water themselves.
- ▶ Need to educate the people about how much it really costs to deliver clean, fresh water to the community.
- ▶ Progress on solid waste issues; have possible Ministry cooperation on this issue.

Middle East

- ▶ The impact of the videos needs to be sustainable; videos will be made in manner that shorter videos can be pulled out easily.
- ▶ Regional cooperation (just coming to the table) among all the sites is seen as a strategic objective.

Participation is one of many tools in the EE&C toolkit and GreenCOM is still struggling with the research implications of being more participatory. The aim of this session was to get input from TAG members on how to integrate participation into future GreenCOM research approaches. Three perspectives on participation were presented, and are summarized as follows.

Orlando Hernández, Director of Applied Research, GreenCOM

The application of social marketing principles to the EE&C relies on the use of a five-step process:

- ▶ needs assessment
- ▶ planning of intervention
- ▶ pre-testing
- ▶ implementation of the intervention
- ▶ monitoring and evaluating the intervention.

Research is involved in three of those steps: needs assessment, pre-testing, and monitoring and evaluation. Furthermore, the behavioral focus that has been adopted by social marketing implies that one starts with behavior and identifies ideal and target behaviors. Some determinants involved include: knowledge, outcome beliefs, normative beliefs, self efficacy, etc. The use of these determinants helps develop the content of interventions and sets the stage for defining what indicators need to be used when evaluating them.

GreenCOM is a project that is expected to bring together three approaches, however: a belief centered approach to behavior change, participation and gender. That is both a mandate and a challenge. The integration of participation and a belief-centered approach to behavior change may have implications for the traditional role research played in social marketing as well as for the content and rigor of the research that may be carried out to design and evaluate EE&C interventions.

Because of the involvement of stakeholders in program design, the first two steps of the previously outlined process, needs assessment and intervention planning, get merged. Furthermore, because beneficiaries are involved in planning the intervention and in designing messages and even educational materials, the pre-testing stage of that same process may not be necessary or may be substantially modified. Finally, the end result of a participatory activity may not be an educational intervention but a plan of action for stakeholders to implement. Promotional activities in the traditional sense of the term may be absent from that intervention. Consequently, the end-product of a participatory initiative may be quite different. The behavioral focus of social marketing may be also modified. And the indicators that we are traditionally used to evaluate interventions may not longer be valid.

There is a need to both define the core elements of participation and the indicators that can be used in evaluating participatory EE&C initiatives. There is also a need to see how a belief-centered approach to behavior change and participation can be integrated as development approaches. Dr. Hernández indicated that internal discussions within GreenCOM suggest that it is not possible to integrate EE&C interventions based on a belief centered approach with those considered to be more participatory in nature. However, he argued that this may not be necessarily true and suggested that there is at least one way of bringing these approaches together. One possible starting point to begin thinking about how to integrate them is by considering the potential psycho-social impact that participatory initiatives have on stakeholders. Based on two GreenCOM experiences, one in Morocco and one in the Phillipines, participation seems to have changed:

- 1) the perception that stakeholders have of the problem under consideration;
- 2) the image that they had mutually of each other leading to some level of trust, possibly setting the groundwork for the development of a partnership between them; and
- 3) the level of commitment stakeholders were willing to express publicly about their own future actions to solve the problem under discussion.

Mona Grieser, Senior EE&C Advisor, GreenCOM

Ms. Grieser's comments involved a comparison between social marketing and participatory communication. In cultures with a hierarchical structure, a participatory approach levels the playing field and flexibility is key. The presenter made a comparison on when to use social marketing vs. when to use participatory communication. She argued that social marketing is useful when there are only one or two easily definable ideal behaviors, when the *Apromise* is limited, and when positive rewards are easy and quick. Participatory communication, on the other hand, is useful when addressing a complex set of interacting behaviors, when the *Apromise* is large, and when rewards are either absent, delayed or negative.

Additional differences between social marketing and participatory communication were presented. The most important being that the primary objective in social marketing is to change negative environmental behavior. The objective for participatory communication is to assist a community in achieving critical thinking as well as other capabilities so they can manage their environment on their own. The goal of participation is consensus, not the best technical product or idea. The role of the expert in social marketing is investigative in nature. In participatory communication, the expert's role is that of a facilitator. Information in social marketing is owned by outside experts, whereas in participatory communication it is owned by the local community. One of the major differences between the two approaches is the outcome. Social marketing has an outcome of a few improved behaviors. Participatory communication has an outcome of increasing the community's ability to take initiative, shoulder responsibility, generate solutions and solve problems.

Ms. Grieser suggested that the stages of participation are very similar to those of social

marketing, they are just different in scope. In participation there are many views, stakeholders, and participants. In social marketing the steps are performed alone mainly by external experts.

José Ignacio Mata, Resident Advisor, GreenCOM/El Salvador

Mr. Mata suggested that the key factors in participation are:

- ▶ flexibility;
- ▶ empowerment of the decision making process;
- ▶ use of local values, culture, language to develop an intervention; and
- ▶ presence of a multiplicity of voices.

An example was given about how in El Salvador different actors have come together to address how to deal with the problem of solid waste disposal in the town of Concepcion de Ataco. In this community, GreenCOM supported the creation of an ecological committee made up of representatives from the municipality, the local health facility, the local representative of the Ministry of Education, the local police and NGOs working in development initiatives in the community. The different stakeholders analyzed the problem and prioritized its solution. Possible actions that stakeholders believed could be undertaken to solve it included: 1) improve curbside waste collection, 2) move the land fill to a different location and construct a new one with more appropriate technical specifications, and 3) set up waste bins throughout the community. To design an improved waste collection system, students conducted research to understand the residents' waste disposal practices, the saliency of waste collection as a local problem, and the willingness to pay for waste collection services. The municipality modified the waste collection system. A local NGO was able to obtain the donation of a lot for the construction of a new land fill. Another NGO built and placed the waste bins throughout town, and coffee producers decided to use the organic waste obtained from coffee processing to produce compost and use it as a fertilizer in their fields.

Discussion

Pros and Cons of Participation

Participatory development initiatives are influenced by culture, science and politics. Participatory development initiatives should help internalize the values of progressive change with one's own proclivities. In other words, development initiatives should be adopted by residents in less developed communities because it makes sense to them to do so. Participatory development initiatives should permit individuals to engage in development actions because they can do them and are thus empowered to implement them. The assumption is that by allowing individuals to engage in development actions, individuals will transcend themselves and improve their lives. Participatory initiatives may not always prove to be fruitful. The World Bank's experience using participatory initiatives in Muslim societies has not been positive. Even though participatory development initiatives are particularly important in the environmental arena, since

many actions that need to be adopted and taken will require the involvement of not only different stakeholders, but also of the community members. Individual change may not be enough to solve an environmental problem as its solution may require larger social involvement and the modification of societal roles.

One of the challenges of participation is how to keep politics under control. It is inappropriate to consider government as intrusive. Participatory development activities should be carried out respecting government, particularly if they are funded by outside donors. Respecting government may contribute to ensuring long lasting and sustainable interventions.

Making a distinction between participation as a means or as an end in itself has worried practitioners for quite some time. This distinction has implications for the development of indicators with regards to measuring the impact of participation. Yet, if participation can lead to empowerment, it is important to consider participation as a means for the proper implementation of a development initiative. Defenders of participation argue that participatory development initiatives cultivate a community's ability to: think creatively and critically, take initiative, assume/shoulder responsibility, articulate ideas, generate solutions, generalize from one set of problems to another, and modify the roles played by disadvantaged groups, including women. However, these are all laudable goals but very hard to measure. Environmental communication and education interventions should have a more specific focus: increasing knowledge, attitudes, and hopefully changing specific behaviors that have environmental impact. Any EE&C activity should not ignore the impact that it has on environmental outcomes.

Defenders of participatory development activities should also be cautious about the possibility of communities and groups making inappropriate decisions. Science should play an appropriate role in guiding the decision-making process. Development funds are limited and should be used wisely. Allowing communities to make mistakes and to learn from their mistakes could be too costly both financially and environmentally. Participatory development initiatives should constitute a marriage between science and process.

What are the elements of participation?

Defining who participates, who the stakeholders are and what stake they are holding is important. Defining what stake is being held will be easier if there are economic incentives attached to any decisions that need to be made. Stakeholders need to be made stockholders. In so doing, their interests will be clear and the cost of making inappropriate decisions even more so. The responsibility for defining who the stakeholders are should reside in the community. Defining stakeholders to be summoned to a meeting may require defining a core constituency that is important and can make a difference. Not all community members may be required in a meeting of this nature. Representatives of a core constituency may be sufficient.

Participation reflects a belief in people and a belief that culture will find its way with information and technology. Participation assumes that people need more than information and that choices

made in development are driven by people.

Outsiders should play the role of a catalyst or of a negotiator that allows stakeholders to come to some type of agreement.

How do we evaluate participation?

To design the evaluation of participatory development initiatives, the following questions must be addressed:

What are the attitudes, knowledge and behaviors that matter and which need to be modified through a participatory activity? Preferably, have evaluations focus on specific attitudes or behaviors.

What impact would a participatory activity have on an environmental problem?

How can the evaluation of participatory activities be done systematically? Is it possible to contrast a participatory development initiative to one that is not? Are experimental vs. control comparisons possible? Can the evaluation of participatory initiatives be carried out by outside evaluators to increase its objectivity?

Did the critical and creative thinking process that may have been generated by a participatory development initiative stick to the point of influencing a new activity? How did it change the course of action for community endeavors in other development related actions?

Can participatory development initiatives be taken to a scale that matters and makes a difference for the environment?

Any model adopted for the evaluation of participatory initiatives should work in different contexts.

Egypt: A Case Study for Using Social Marketing for Environmental Compliance

Review Brian A. Day, GreenCOM Project Director

Under the future Delivery Order that GreenCOM will most likely get from the USAID Mission in Egypt, GreenCOM will be asked to help the Egyptian government, particularly the Ministry of the Interior, with the implementation of three awareness campaigns around environmental issues.

The areas where support is currently being considered are:

- ▶ Environmentally sustainable tourism. This campaign would focus on coral reef protection in the Red Sea.
- ▶ Energy efficiency initiatives. This campaign would address the removal of tariffs, the privatization of energy provision, and the removal of subsidies.
- ▶ Solid waste collection initiatives. This is a big problem in Cairo where currently 50% of the solid waste goes uncollected and 1/3 of particulate matter in the air in Cairo stems from the burning of garbage.

There is a comprehensive environmental code that covers different sectors including air, water, transportation, coastal resources, hazardous and solid waste, environmental tourism and others. Enforcement of Law 4 has been particularly problematic. For example, 22,000 business are supposed to comply with regulations included in this code. Although the deadline for compliance is March 1, 1998, fewer than 40% of the businesses had ever heard of the law and no requests for compliance had been filed.

One of the big challenges GreenCOM is likely to face is the creation of a communication campaign to support Law 4 that both informs people and drives compliance. This is especially challenging since the concept of compliance is absent among Egyptian businesses and people who complain about environmental degradation are seen as disloyal to Egypt. It is also challenging because Cairo has some of the dirtiest air in the world, there is no regulatory system in place and the local expertise about what to do concerning this issue is still relatively naive.

Suggestions/Comments

The vast majority of the comments focused on enforcing Law 4 and driving compliance among industry. TAG members and members of the GreenCOM Project made the following suggestions.

Segmentation

- ▶ Identify and target the most polluting industries. That is, if 90% of the pollution comes from 10% of the industry, targeting 2,000 companies may solve 90% of the problem.
- ▶ Further consider segmenting those polluting industries by sector: oil, air, water, tourism, etc.
- ▶ Find the best approach for each of the three different business communities: 1) Multinational corporations, 2) publicly held corporations, 3) small privately owned businesses (a small but growing segment). Multinational corporations will help Egyptian businesses comply on the basis of good partnerships and privately owned businesses will respond to the financial component.
- ▶ Target the Multinational Corporations first since they are more likely to be ISO (International Standards Organization) compliant and use them as a model of what to follow. The trick here is to do this without it seeming that outsiders are forcing compliance on the local business community.
- ▶ Work on the list of companies and do a weekly/monthly publication about what is going on in the environment (patterned on *Inside the EPA*).

Incentives, Persuasion and Feedback Mechanisms

- ▶ Create a fund that will help industries start cleaning up by giving away 2 of the amount needed.
- ▶ Sell compliance as a means of being cost-effective. Give examples of how industry can save money and increase productivity by complying to environmental regulations.
- ▶ Addressing financial incentives may also imply dealing with companies that may sell in overseas markets or that are prospectively looking at foreign markets, particularly in Europe. When Europe wouldn't accept produce from Egypt the agricultural industry reduced pollution by 90%. Industries were forced to comply or lose business.
- ▶ Stress compliance as a right and responsibility as opposed to a rule with a fine attached to it. Provide awards to companies that comply and publicize it.
- ▶ Help companies learn how to move through the stages of compliance.
- ▶ To get *real* compliance use multiple interventions and use campaigns to get the information back to the enforcement agencies and industry.

- ▶ If the public is made aware that there are real solutions to environmental problems they may put pressure on companies to do something to fix it, especially if they target child health issues.
- ▶ Making use of the strong network of scientists and physicians will drive compliance in those industries but not in business.
- ▶ Draft National Environmental Protection Acts as a way of increasing educational awareness.
- ▶ Use religion in educational awareness campaigns, i.e., Muslim obligation to help the environment.
- ▶ Get major world health officials and other responsible leaders to support the campaign.

How to Convey Messages

- ▶ Make use of local social clubs and chambers of commerce as a way of having industry specific mentor relationships, then, hold good examples up as models of compliance.
- ▶ Have agencies or social clubs give awards such as Excellence in pollution prevention to companies that do well in a given amount of time (monthly).

Additional Considerations

- ▶ Can not move too quickly toward behavior change without educating the people about basic concepts of environment which are currently lacking in Egyptian society.
- ▶ Since there are three levels of effort in such a campaign (enforcement, regulation and information) and little time to do it all, secure help from other organizations and agencies so GreenCOM isn't doing it alone.

Reflections on GreenCOM's Future Research Agenda: El Salvador

Orlando Hernández, GreenCOM Research Director

José Ignacio Mata, GreenCOM Resident Advisor, El Salvador

USAID/El Salvador has one environmental strategic objective; increased access by rural households to clean water. Four intermediate results (IR) are associated with it:

IR4.1: Improved quality of water sources.

IR4.2: Improved performance of water delivery systems

IR4.3: More effective citizen actions to address water issues

IR4.4: Improved municipal management of water resources

GreenCOM's upcoming activities will focus on IR4.3 with special attention paid to:

IR4.3.1: Increased awareness of causes and consequences of insufficient and unclean water.

IR4.3.2: Increased knowledge of options/solutions for clean water.

IR4.3.3: Communities organized around water issues.

GreenCOM's work is likely to be implemented only in one watershed: Bahía de Jiquilisco. Yet, it could be expanded to two additional watersheds.

To respond to these concerns, GreenCOM has proposed to:

- 1) disseminate the causes and consequences of insufficient water quantity and of poor water quality through one regional media campaign and three local campaigns, plus other media such as puppets, printed material, and school based activities;
- 2) promote appropriate waste treatment and water management practices for family consumption through a similar approach;
- 3) promote appropriate soil-conservation practices and a rational use and management of agricultural input among farmers in the headwater area and close to surface water bodies by generating educational materials that can be used by extensionists;
- 4) strengthen the local capacity to manage sustainable water projects promoting community organizations to manage water projects and training these organizations to fulfill their duties, and
- 5) promote the clean-up and reduction of water pollution by agro-industrial processing facilities through discussion and printed materials that propose alternative technologies to disposing liquid and solid waste.

GreenCOM has the mandate to monitor and evaluate these interventions. To meet this mandate, three research activities have been planned. These include a baseline prior to the initiation of activities, an intermediate evaluation at mid-course, and a post intervention measurement to

determine the project's impact.

Very little evaluation research has been done in El Salvador despite the fact that it is the site where GreenCOM has worked the longest. The USAID/Mission has finally decided to support an evaluation effort and the opportunity being provided must be used to the fullest.

Orlando Hernández suggested that advice was needed from the TAG in four areas:

- 1) focus of the upcoming evaluation to study the impact of EE&C interventions around maintaining water quality;
- 2) setting up targets to measure success;
- 3) ways of increasing and measuring participation and its effects;
- 4) defining strategies for collecting data.

Comments/Suggestions

- ▶ adopting a different educational content for upper vs. lower watershed residents; emphasizing in each case immediate advantages that may result from the adoption of behaviors appropriate for each sub-audience;
- ▶ develop a research instrument that asks the same questions to all respondents;
- ▶ including a control group in the research design to ensure the impact of contextual trends is taken into account when reporting program impact;
- ▶ consider the applicability of using a school-based sampling framework;
- ▶ if omnibus surveys are used, over-sample the watershed where the intervention will be implemented or request that a special sample be drawn from the area by the firm implementing the omnibus survey.

ANNEX A: 1998 TAG MEETING AGENDA

**Environmental Education and Communication Project (GreenCOM)
Technical Advisory Group (TAG) Meeting Agenda
Thursday, January 22 - Friday, January 23, 1998**

Sharing our Experience to Date

EE&C and the Social Dimension

Chair: Brian A. Day, GreenCOM Project Director

Thursday, January 22, 1998

8:30 a.m. Registration and Coffee Service

**9:00 a.m. Welcome
Stephen F. Moseley, President
Academy for Educational Development**

Introduction of TAG Members

Opening Remarks

**Emily Vargas-Baron, Deputy Assistant Administrator
Center for Human Capacity Development, USAID/Washington, D.C.**

William Sugrue, Director
Office of the Environment and Natural Resources
Center for the Environment, USAID/Washington, D.C.

Purpose of the 1998 TAG Meeting
Kate Barba
Project Officer, G/ENV/ENR, USAID/Washington, D.C.

Current GreenCOM Field Experience

GreenCOM and the Social Dimension
Brian A. Day, GreenCOM Project Director

Cross-Cutting Issues for GreenCOM Research: An Overview
Susan E. Middlestadt, Senior Applied Research Advisor

Biodiversity and Forestry

Nicaragua - *Identifying Turtle Protection Behaviors*
Rick Bossi, GreenCOM Latin American Task Manager

Nepal - *Research: A Light in the Forest*
Orlando Hernández, GreenCOM Director of Research

10:30 a.m. **BREAK**

Water

10:45 a.m. **Egypt** - *Building Partnerships: How District Irrigation Engineers Can Help Save Water*
Cheryl Groff, GreenCOM Egypt's Resident Advisor

El Salvador - *Sustainability of Water Projects in Rural Communities*
José Ignacio Mata, GreenCOM El Salvador's Resident Advisor

Middle East - *Consensus Building Around Best Practices in Water Conservation*
Mary N. Sebold, GreenCOM Program Officer, Middle East

Discussion of Implementation of Research Issues

12:30 p.m. **LUNCH**

Participation: New Directions for EE&C
Small Group Sessions

Chair: Susan E. Middlestadt

1:45 p.m.

**Is Participation Changing Our Basic Model?:
The Changing Role of Research**

Panelists:

Mona Grieser, GreenCOM Senior EE&C Advisor
José Ignacio Mata, GreenCOM El Salvador-s Resident Advisor
Orlando Hernández, GreenCOM Director of Research

2:30 - 4:00 p.m.

**Small Groups Discussions:
Application of Participation Approaches to Programs**

El Salvador - Moseley Conference Room, 4th floor

! *Facilitator:* Rick Bossi, GreenCOM Latin American Task Manager

! *Technical Resource:* José Ignacio Mata, GreenCOM El Salvador-s Resident Advisor

! *Note-taker:* Peggy L. Preusch, GreenCOM Program Associate

! *TAG members:*

John Baldwin, Director, Institute for a Sustainable Environment,
University of Oregon

Robert Hornik, Professor of Communication Research, Annenberg
School of Communications, University of Pennsylvania

Thomas Zosel, Manager, Environmental Engineering and Pollution
Control 3M Corporation

! *Staff:* Mona Grieser, GreenCOM Senior EE&C Advisor

Morocco - Milpa Conference Room, 4th floor

! *Facilitator*: Brian A. Day, GreenCOM Project Director
! *Technical Resource*: Orlando Hernández, GreenCOM Director of Research
! *Note-taker*: Amanda Alter, GreenCOM Program Associate
! *TAG members*:
 Martin Fishbein, Harry C. Coles Jr. Distinguished Professor, Public Policy Center, Annenberg School of Communications, University of Pennsylvania
 Lynne Hale, Associate Director, Coastal Resources Center, University of Rhode Island
 Tiahoga Ruge, Director, North American Center for Environmental Information & Communication

Nepal - Goldstar Conference Room, 4th floor

! *Facilitator*: Peter L. Spain, GreenCOM Administrative Director
! *Technical Resource*: Mary N. Sebold, GreenCOM Program Officer, Middle East
! *Note-taker*: Paulina Espinosa, GreenCOM Program Associate
! *TAG members*:
 Paul Nowak, Professor, School of Natural Resources and Environment University of Michigan
 Ms. Judy Braus, Director of Environmental Education, World Wildlife Fund
! *Staff*: Susan E. Middlestadt, AED Research Director

3:45 p.m.

BREAK

4:00 - 5:00 p.m.

Report of Small Groups

Summary of today and logistics for tomorrow

5:00 - 6:30 p.m.

Reception

Using Social Marketing for
Environmental Compliance Enforcement

Chair: Peter L. Spain, GreenCOM Administrative Director

Friday, January 23, 1998

- 9:00 a.m. **Egypt: A Case Study for Using Social Marketing for Environmental Compliance**
Review Brian A. Day, GreenCOM Project Director
- Brainstorming Session: Best Methodologies**
- 10:30 a.m. **BREAK**
- 10:45 a.m. **Reflections on GreenCOM's Future Research Agenda:
Remarks & Discussion**
Susan E. Middlestadt, AED Research Director - *El Salvador*
Orlando Hernández, GreenCOM Research Director - *Other Research*
- 11:30 a.m. **Final Recommendations from 1998 TAG**
Brian A. Day, GreenCOM Project Director
- 12:00 noon **1998 TAG Adjourns**

1998 GreenCOM TAG Meeting Participant List

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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 the Harry C. Coles Jr. Distinguished professor of Communication in the Annenberg Public Policy Center at the University of Pennsylvania. He is also a consultant to the Behavioral Intervention and Research Branch in the Division of STD Prevention at the CDC and to the National Institute of Mental Health's AIDS Research Program. 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 affect 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 an 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 of 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 USAID-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.

Paul Nowak

Paul Nowak has been associated with the School of Natural Resources and the Environment at the University of Michigan for more than two decades, where he has been Director of the National Consortium for Environmental Education and Training, Director of Professional Education, and Director of the Wildland Management Center. He serves as a member of the Education Committee of the President's Council for Sustainable Development and on the Global Rivers Environmental Education Advisory Committee. Dr. Nowak also spent five years teaching in the College of Education at Southern Illinois University from 1969 through 1974, and was a science teacher in two Detroit public elementary schools. He has written books, articles, and training materials on solid and hazardous waste, watershed management, and environmental journalism.

Dr. Nowak has B.S. and M.S. degrees from Wayne State University and a Ph.D. in natural resources from the University of Michigan.

Tiahoga Ruge

Ms. Ruge has extensive international experience in promoting the environment through television, films, and other communication vehicles. She is currently director of the North American Center for Environmental Information and Communication, headquartered in Mexico. She has produced and directed films and documentaries on social and environmental issues, including a five-part series on the Biosphere 2 project. She was Science and Culture Counselor for the Embassy in Mexico in India from 1984 through 1988. From 1988 through 1991, back in Mexico, she designed and directed the "Mass Media and Environment: A National Call for Environmental Awareness" project. In 1991, Ms. Ruge received the UNEP Global 500 Roll of Honor award. Ms. Ruge has an M.S. degree in biology from the University of Houston and an M.A. in film direction from Cinecitta in Rome, Italy, where she also worked as an assistant to the film director Federico Fellini.

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: RESEARCH SUMMARIES
