

Report

of a

Workshop on

Mainstreaming Environment into Development Programs through Education, Training and Communication: Best Practices and Future Challenges

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Summary

The present report synthesizes the key points made, and the general lessons learned, in a workshop on the topic of **"Mainstreaming Environment into Development Programs through Education, Training, and Communication: Best Practices and Future Challenges"**, held in Toronto, Canada in June, 1997. This workshop was part of a larger international conference on **"Global Knowledge '97: Knowledge for Development in the Information Age"**, hosted by the World Bank and the Government of Canada in partnership with various other organizations. A core group of 32 individuals from 20 different countries participated in the workshop deliberations, including senior development officials; policy and decision-makers; environment educators, trainers, and communicators; environment program planners and managers; scholars and academicians; and representatives of international and multi-lateral agencies.

The tone of the present report is descriptive, prescriptive, and provocative, consistent with the tone of the workshop deliberations. The report is organized around several key themes that undergirded the various workshop sessions. First, the policy-making challenges relating to environmental issues in general, and to environment education, training, and communication (EETC) activities in particular, are presented. Second, the need for collaboration among the various EETC stakeholders is emphasized. Third, a need-based, problem-solving methodology for EETC initiatives is prescribed. Fourth, the advantages of "piggybacking" EETC messages on to existing communication channels are highlighted. Fifth, the strategies of institutionalizing and "franchising" training activities, enhancing staff capacity, and sustaining EETC initiatives are presented. Sixth, the FAO/UN-supported EETC initiatives in six Asian countries are presented as a showcase for the various prescriptive principles emphasized in the present workshop. Seventh, the role of new communication technology in supporting EETC initiatives is discussed. Eighth, the importance of mapping and tapping traditional indigenous knowledge systems for the conduct of EETC initiatives is highlighted. Ninth, the need to utilize emotional appeals to mobilize people to preserve and protect the environment is emphasized. Finally, innovative media-based strategies for furthering EETC causes are recommended.

**Mainstreaming Environment into Development Programs
through Education, Training and Communication:
Best Practices and Future Challenges**

The present report synthesizes the deliberations of a workshop on the topic of **“Mainstreaming Environment into Development Programs through Education, Training, and Communication: Best Practices and Future Challenges”**, held in Toronto, Canada from June 22 to 25, 1997. This workshop was part of a larger international conference on **“Global Knowledge ‘97: Knowledge for Development in the Information Age”**, hosted by the World Bank and the Government of Canada, in partnership with various international, public, private, and non-governmental organizations. The purpose of the conference was to explore the role of knowledge and information in sustainable development, and to explore new opportunities for participation, partnership, and dialogue created by the emerging information revolution. The conference program included plenary sessions, symposia, workshops and breakout sessions, and demonstration of new learning technologies, including technological exhibits, on-site computer networks, and video festivals. An estimated 2,000 participants from 124 countries participated in this international conference, including several heads of state. The present workshop on environment education, training, and communication represented one of the several concurrent activities of the international conference.

Workshop Objectives

The specific objectives of the workshop included:

1. To discuss the strategic role and importance of education, training, and communication for mainstreaming environment into development programs.
2. To demonstrate and review best practices in planning, implementing, managing, and sustaining cost-effective environment education, training, and communication programs, based on the results and lessons learned from experiences in various developing countries.
3. To identify strategies and methods for improving the capacity of institutions and their

staff in environment education, training, and communication.

4. To make recommendations and develop action plans for establishing global knowledge partnership in sharing and disseminating environment education, training, and communication know-how through conventional means as well as the new electronic/telecommunication technologies such as distance learning, Internet/Web-based knowledge banks, and virtual networking.

Workshop Participation, Organization, and Structure

The present workshop brought together a core group of 32 participants from 20 different countries, including senior development officials; policy and decision-makers; environment educators, trainers, and communicators; environment program planners and managers; scholars and academicians; and representatives of international and multi-lateral agencies (A complete list of the core workshop participants is provided in Appendix A). More than half of the core workshop participants had extensive experience in planning, implementing, and evaluating environment education, training, and communication programs in developing countries, and almost all of them were members of existing environment education and communication networks sponsored by agencies such as FAO/United Nations, GTZ, the International Academy of the Environment, IUCN/World Conservation Union, UNEP, and the World Bank. This workshop was timely and historic: For the first time, in one global forum, members of each of these environment education networks came together to share experiences and best practices, and also to integrate their global programmatic efforts. In addition to this 32-person core group, the workshop sessions were also attended by other interested participants of the international conference.

This workshop was organized at the initiative of Dr. Ronny Adhikarya, Senior Training Officer of the New Products and Outreach Division of the Economic Development Institute (EDI), World Bank, who until October, 1996, managed and administered FAO/UN's programs on environment education, training, and communication. Dr. Adhikarya was uniquely qualified to organize the present workshop because, in addition to his first-hand experiences with environment education programs at FAO/UN and the World Bank, he was well-versed in the

environment education initiatives of organizations such as GTZ, IUCN/World Conservation Union, UNEP, and the International Academy of the Environment, and personally knew all the key principals involved. The present workshop, while organized by EDI/World Bank, received financial support from eight partner organizations – FAO/UN, IUCN, World Bank/EDI, Ohio University, Asian Institute of Technology, University Putra Malaysia, Commonwealth of Learning, and Simon Fraser University, Canada. This multi-source support of the present workshop reflects the value that the core workshop participants and their respective institutions placed on this Toronto meeting.

The workshop agenda was formulated through a virtual, participatory process. Extensive pre-workshop mailings and deliberations (of a virtual nature) were held between conference participants, which were handled through a web-site established by EDI, World Bank, through the efforts of Dr. Ronny Adhikarya. This web-site (<http://www.worldbank.org/html/edi/toronto/post/index.htm>), as we detail later, continues to serve as a post-workshop discussion forum and includes papers presented at the present Toronto workshop, details of follow-up activities conducted, and other relevant news and announcements on environment education, training, and communication (EETC) matters.

The present workshop's organizational structure included a combination of delivery methods, including panel discussions, round-table consultations, and case-presentations. A total of five workshop sessions spread over three days were held, interspersed with the **Global Knowledge '97** Conference's plenary sessions and other activities (A session-by-session agenda of this workshop is provided in Appendix B). Workshop session #1 included presentations on the policies and strategies to integrate environment education, training, and communication into development programs in such sectors as health, population, agriculture, and non-formal education. Session #2 showcased the best practices and lessons learned from various developing countries in planning, implementing, and evaluating environment education, training, and communication programs. Session #3 discussed the strategies and methods for improving the capacity of institutions and their staff to plan, implement, and manage environment education and communication programs in a sustainable manner. Session #4 discussed the promises and problems of applying innovative strategies and methods, including new computer and

communication technology applications (such as distance education, Internet sites, and virtual networking), to improve the delivery and cost-effectiveness of environment education, training, and communication programs. Session #5, a special session consistent with the overall theme of the **Global Knowledge '97** Conference, focused on the strategies to reduce the knowledge-gap between the information rich and poor, including the challenges faced by environmental policy-makers in evaluating technology-based options to target the resource poor. All five workshop sessions, and their constituent activities, were geared to meet the workshop objectives (specified previously).

In addition to these five workshop sessions, which were open to all participants of the **Global Knowledge '97** Conference, the 32 core workshop participants participated in two closed-door sessions to chalk out collaborative follow-up activities in the realm of environment education, training, and communication with respect to (1) policy outreach, (2) institutionalization and capacity-building, (3) development of learning support materials, (4) strategic alliances and new initiatives, (5) research and evaluation, and (6) innovative media practices and training of media personnel. These closed-door deliberations, also synthesized by the present author (Singhal) with help from workshop participants Drs. Chye-Hean Teoh and Ronny Adhikarya, are detailed in Appendix C. There exist substantive areas of overlap between the closed-door discussions and the deliberations in the five open workshop sessions, a reason why the present author has chosen to place the contents of the closed door deliberations in Appendix C. Thus Appendix C is a stand alone document, as is the core body of the present report (without the appendices). Such an organizational structure of the present report avoids textual redundancy and lends itself to be consumed by a variety of readers, both inclusive and exclusive of the core workshop participants.

Purpose of the Report

The present report synthesizes the key points made, and the general lessons learned, in the five workshop sessions about mainstreaming environment education, training, and communication (EETC) activities into development programs relating to agriculture, health, education, and population. The nuances and the essence of best practices in EETC from various

in-country experiences are derived, and the associated policy, institutional, and programmatic challenges are highlighted. Toward this end, the present report draws upon several papers presented during the workshop, including Adhikarya (1997), Contado (1997), Halim (1997), Martaamidjaja and Rikhana (1997), Wentling (1997a; 1997b; 1997c), Yassin (1997), and others; comments of the lead respondents in each session; discussions during the question-and-answer sessions; and the observations and reflections of the present author (Singhal), who participated in the workshop deliberations and took detailed notes in each session. The purpose of the present report is not to chronologically describe the activities of the various workshop sessions. Rather, its purpose is to highlight the main topics, issues, and recommendations made during the workshop sessions with respect to policy, strategy, institutionalization, and technological aspects of mainstreaming environment education, training, and communication programs into development programs. In essence, the present report is organized around the key themes that emerged during the workshop deliberations; it does not purport to be a historiography of the workshop deliberations.

The tone of the present report is descriptive, prescriptive, and sometimes provocative, consistent with the tone of the workshop deliberations. The workshop participants realized that they could not always be prescriptive; sometimes description was fine. At the same time, environmental issues were viewed as being much too important to leave to spontaneous, non-interventionist options. The present report tries to capture the diversity of voices of the various workshop participants. An attempt is also made to provide coherence and unity to the workshop deliberations, while recognizing and appreciating the contradictions and paradoxes there-in.

How is the present report organized? First, the policy-making challenges relating to environmental issues in general, and to environment education, training, and communication (EETC) activities in particular, are presented. Second, the need for collaboration among the various EETC stakeholders is emphasized. Third, a need-based, problem-solving methodology for EETC initiatives is prescribed. Fourth, the advantages of "piggybacking" EETC messages on to existing communication channels are highlighted. Fifth, the strategies of institutionalizing and "franchising" of training, enhancing staff capacity, and sustaining EETC initiatives are presented. Sixth, the FAO/UN-supported EETC initiatives in six Asian countries are presented as a

showcase for the various prescriptive principles emphasized in the present workshop. Seventh, the role of new communication technology in supporting EETC initiatives is discussed. Eighth, the importance of mapping and tapping traditional indigenous knowledge systems for the conduct of EETC initiatives is highlighted. Ninth, the need to utilize emotional appeals to mobilize people to preserve and protect the environment is emphasized. Finally, innovative media-based strategies for furthering EETC causes are recommended.

Policy Challenges and Future Directives

A palpable undercurrent common to all five workshop sessions was that environmental issues are laden with policy-related challenges. Some of these challenges were identified, and policy-guides for the future were presented.

The Equality Challenge

Environment issues are inseparable from the issue of equality. The poorest, weakest, and the most vulnerable populations typically live in the most degraded part of the environment. One must guard against the domineering tendency to label the “victims” as “culprits”, akin to castigating the young, hungry deer that nibbles at the plant that hides it from the hunter. Further, the poor and the weak are often hard to reach with conventional media channels. The policy challenge is to search for ways to protect the environment without affecting the basic needs of the poor.

The Challenge of the “Tragedy of the Commons”

Policy-making on environmental issues is exacerbated by the challenges relating to the “Tragedy of the Commons”, a situation in which each person pursues what they believe is best for them, but cumulatively push the whole system toward disaster (Hardin, 1968). So the Indian farmer who practices poor soil conservation, or the Nigerian peasant who applies too much pesticide, or the Colombian rancher who allows his herd to overgraze a common land, may increase production in the short run. But, in the long run, the top soil erodes, streams get polluted, and floods result (Rogers & others, 1988). Excessive pesticide use disrupts the

naturally-occurring food chain; overgrazing leads to the process of desertification. The “tragedy of the commons” points to the inherently complex and systemic nature of environmental problems, and the policy-making challenges there-in for those involved in environment education, training, and communication activities.

Front-End, Pro-Active, and Integrated Policy-Making Mechanisms

Unfortunately, to date, issues of environment education, training, and communication (EETC) have, if at all, been incorporated in the policy-making apparatus at the back-end; not at the front-end. As forests have denuded, deserts expanded, cities have become polluted, soil has eroded, and the waters fished out, environment issues have “bubbled up” on the desks of policy-makers. The 1992 U.N.-sponsored Earth Summit in Rio de Janeiro was also a reaction to the deepening environmental mess that the world was finding itself in. While the past concern over environmental matters has been characterized by “reaction”, the future policy agenda calls more for “pro-action”.

Agenda 21 of the 1992 U.N. Earth Summit called upon member countries to increase environmental awareness and education about responsible ecological practices among their populations. However, few programmatic activities have been systematically implemented to date in developing countries to realize this objective (Adhikarya, 1996). One problem is that environmental issues do not, in the eyes of most people, including those of policy-makers, fit in one neat sectoral category. Environmental concerns underlie health, agriculture, population, and other development sectors, and there is a lack of political clarity on who “owns” this problem. For example, certain kinds of cancer (a public health issue) are caused by excessive and inappropriate use of fertilizers and pesticides (both agricultural issues), and mineral mining and industrial pollution (both industrial issues). Likewise, vehicular injuries result from urban congestion. Respiratory and water-borne illnesses stem from polluted air and water sources. Such a multi-sectoral, multi-dimension environmental problem calls for an integrated, multi-sectoral policy and programmatic response. Environmental concerns need to be systematically incorporated in the policy and program agenda in the farming, public health, industrial, education, and other sectors. Needed is a permanent, pluralistic, and integrated policy agenda for the environment, not a

temporary, sporadic, and ad-hoc one.

The future policy agenda for mainstreaming environment issues into existing development programs should, to the extent possible, subscribe to two key principles. First, the policy principle of “prevention”: A dollar invested in preventing environmental degradation is notably wiser than spending hundreds of dollars to clean up the ensuing mess. Second, the policy principle of “people-centeredness”: That is, focusing primarily on the felt-needs of the common people; not the perceived needs of an elitist minority with vested interests. Hence, the challenge really is to put into place environmentally-friendly policies that in the long-run can sustain economic growth.

Perhaps more than any other group, policy-makers of the world, nations, regions, and municipalities hold the key to environmental dilemmas. Needed are environmental champions who embody “vision” and implement a clear “mission”. “A robust environment, after all, is good politics”, noted Senator Juan Flavio of the Philippines in the present workshop.

Collaboration Among Stakeholders

Given that environmental issues cut across various disciplines, agencies, and concerns, it is not uncommon for EETC initiatives to be besieged by turf-battles, differences in opinions and approaches, and skepticism and suspicion of the other party. For instance, environmental groups who subscribe to the ecology-based model, want to protect resources like land, water, and soil. On the other hand, farmers want to exploit these resources for increasing production. Hence, the operative word for any effective environment education, training, and communication initiative is “collaboration”.

It is important that before launching any EETC initiative, all stakeholders’ concerns are represented. To the extent possible, EETC programs must be designed to harmonize stakeholder interests, including those of government agencies, private industry, community-based organizations, and the target beneficiaries (Adhikarya, 1997). Strategic alliances and inter-sectoral partnerships should be built for mainstreaming EETC activities into field-level development programs. The proverbial left hand should know what the right hand is doing and not try to undo or duplicate it. Involving the private sector in environment initiatives is critical, for instance, in

the greening of parks, planting of trees, sponsoring environmental initiatives, and creating recycled products. Similarly, the mass media should serve as an agenda-setter of environmental issues for the general public and the policy-makers (Dearing & Rogers, 1996). A cadre of trained environment journalists can make environmental issues newsworthy and important, catalyzing public debate on specific environment issues among parliamentarians, public opinion leaders, community activists, and business leaders. Environmental advocacy by all relevant stakeholders can result in favorable resource allocation by governments and donor agencies. Collaboration and networking among stakeholders provides opportunities for sharing of know-how, peer-learning, peer-reviewing, and even inter-sectoral/inter-agency competition. Further, collaboration between EETC program managers and scholars/academicians can help in the conduct of summative evaluations, cost-benefit analyses, and in the compilation and dissemination of best practices through conference presentations and publications.

Need-Based, Demand-Driven, Problem-Solving EETC Methodology

In addition to the need to forge new collaborative forays between stakeholders, EETC activities call for innovative methodological approaches. Barring a few exceptions (that we showcase later), most development programs that have incorporated environment education, training, and communication (EETC) programs, to date, have given inadequate attention to applying needs-based, demand-driven, problem-solving, and participatory methods (Adhikarya & Posamentier, 1987; Adhikarya, 1994; Adhikarya, 1997). Most have been slogan-oriented, generalized, macro-level EETC programs that have not included strategically-planned, multi-disciplinary, and behavioral science approaches in their design and implementation. Further, EETC programs have rarely been subject to rigorous empirical evaluations, thus, hindering the process of identifying and replicating the best learned practices.

How can future environment education, training, and communication (EETC) initiatives overcome the aforesaid methodological problems? First, rather than reinventing the wheel, it may be wise to conduct an inventory analysis of the processes, strategies, results, and best practices of strategically-planned EETC programs that have been conducted to date (we showcase such EETC initiatives later in the present report). Second, systematically apply knowledge, attitude,

and practice gap-analysis strategies to design an EETC strategy, utilizing holistic and multi-disciplinary approaches to design and implement programs. Third, identify and prioritize strategic entry-points for integrating EETC messages in existing development programs. Fourth, select, position, and package relevant EETC content, utilizing principles of audience segmentation. In a later section of this report, we showcase FAO/UN's EETC initiatives in six Asian countries, which subscribed to such a need-based, demand-driven, problem-solving EETC methodology.

A sound EETC methodology should also make strategic use of communication channels, both mass and/or interpersonal, in order deliver the EETC content to the target clientele in an effective manner. For this purpose, the concept of "piggybacking" holds special importance.

Piggybacking

One way to mainstream EETC activities into development programs is by piggybacking messages on to existing communication channels – such as agricultural extension workers, school teachers, or health workers -- that regularly reach a large clientele. As opposed to creating a new, untested delivery system for EETC messages, "piggybacking" offers the advantage of cost-efficiency, reliability, and sustainability (Adhikarya, 1996; Contado, 1997). Given there exist 1.3 billion farm workers in the world, agricultural extension agents represent a highly-strategic interpersonal communication channel for delivering EETC messages to farmers. Teachers in schools and colleges also represent a viable piggybacking channel. Since 1984, The Centre for Environment Education (CEE) in India has involved about 10,000 middle school teachers to deliver environment education messages to tens of thousands of school-going children. In Thailand, the non-formal education program which has a clientele of 2 million people, adopted a problem-based environment education curriculum about a decade ago.

While piggybacking of EETC messages may seem like an excellent idea, one must guard against overloading the capacity of the existing channel. Extension workers and school teachers already have much to do. Piggybacking can only be effective if there is a strong commitment and necessary investments made (1) in developing and modifying the training curricula, and (2) in adequately training of master trainers, extension workers, and the members of the client audience.

Training and Capacity-Building

The effectiveness of any EETC program, whether or not it piggybacks on an existing communication channel or establishes a new one, is often determined by the quality of training received by its resource persons. For it to be effective, the training curriculum should be participatory, module-based, pre-tested, and implemented through strategic institutional partnerships (as we showcase later in the present report). The challenge is to create a standardized training module on EETC which is also locally adaptable. In Thailand, the environment education curriculum in the non-formal education program is adapted to suit local geographical conditions. The program's curriculum in the forest-rich Northern Thailand focuses primarily on the preservation of trees and wildlife; in the southern coastal areas it focuses on marine life, and so on.

Depending on who (master trainers, extension workers, or farmers) is to be trained, an assessment of the trainee's training needs is crucial. Also critical is expertise in module writing. And perhaps most important is the institutionalization of training at the local, regional, national, and global level so that EETC initiatives are sustainable over a long period of time.

Institutionalization and Sustainability

Most of the past EETC initiatives, barring some exceptions, have overemphasized aspects of program implementation, giving inadequate attention to the institutionalization of EETC activities, including the building of staff capacity in strategically designing and planning such initiatives (Adhikarya, 1997). This practice has led to a heavy dependence on "outsourcing", reliance on external expertise, and dominance of donor agencies in executing programs for local organizations (Adhikarya, 1997). When no sound "exit" strategy exists, a perpetual syndrome of dependence is fostered. Such external dependency can be minimized or even eliminated by having donor agencies "wholesaling" or "franchising" their tested EETC training programs to local agencies, instead of trying to "retail" such activities themselves (Adhikarya, 1996; 1997). In this way, institutional and staff capacity can be built at the local, regional, national, and international level, and over a period of time a pool of highly-qualified environment education, training, and communication experts can be created. The FAO/UN-supported training programs in several

Asian countries have been able to do so, as we showcase later in the present report. Several follow-up activities have already been initiated since the Toronto workshop which promote institutionalization of EETC at the national, regional, and global level (see Appendix D).

An opportunity also exists to position the subject of environment education, training, and communication as a “niche” in the course curricula of such subjects as Development Communication and Human Resource Development. Incorporation of EETC principles is also important in the staff and in-service training of development policy-makers, practitioners, managers, and field-workers.

In the past several sections, we have highlighted the importance of pro-active policy-making, collaboration among stakeholders, a need-based methodology, piggybacking, and institutional capacity-building for the effective conduct and sustainability of EETC programs. In the next boxed section, we showcase FAO/UN’s EETC initiative in six Asian countries as a subscriber of several of these prescriptive principles.

Catalyzing Change: Showcasing FAO/UN’s EETC Initiative

The FAO/UN-supported projects in six Asian countries – Indonesia, Bangladesh, China, Thailand, Philippines, and Malaysia -- which incorporated participatory environment education, training, and communication activities in existing agricultural extension and training programs represent, in many respects, a showcase for several of the prescriptive principles outlined in the present workshop report. The FAO/UN-supported projects, described by Adhikarya (1996) and evaluated independently by Professor Tim Wentling of the University of Illinois (Wentling, 1997a), represent a model case of piggybacking, institutionalization, local capacity-building, and sustainable programming. They undertook needs-based, demand-driven, diagnostic planning of the environment education and training curriculum. Further, they involved a strategic partnership between FAO/UN and an influential in-country training institution, whose mandate was receptive to environmental concerns and included an education, training, and communication component.

FAO/UN’s projects in the realm of environment education and training through agricultural extension programs began in 1987 in Indonesia (see Adhikarya, 1996, available

on the WWW, for a detailed history of this prototype project). Dr. Ronny Adhikarya of EDI/World Bank, who in 1996 was coordinating this FAO initiative, seized the challenge when agricultural extension educators and trainers in Indonesia felt a critical need to include environment education in the regular agricultural extension training curriculum. As opposed to relying on the conventional practice of hiring foreign expert consultants to train Indonesian agricultural extension workers, FAO/UN collaborated with Indonesia's Agency for Agriculture Education and Training (AAET), which regularly provides in-service training to its 33,000 agricultural extension workers. FAO's Extension, Education and Communication Service (SDRE) Division provided seed money and technical support to AAET to master the process and method of designing and utilizing well-planned and pre-tested environment education training curricula, modules, and teaching-learning materials (Adhikarya, 1996). The institutional and staff capabilities of AAET to mainstream environmental education, training, and communication issues in its agricultural extension programs was thus enhanced. While FAO provided some seed money for each phase of the project, expenditures for scaling up activities, for instance, the costs of reproducing environment education and training modules (EETM) materials, and the cost of training extension workers in environment education activities were borne by AAET.

To showcase the Indonesian case, and to formally launch a program to mainstream environment, education, and training activities into ongoing agricultural extension efforts, SDRE/FAO/UN in cooperation with Universiti Putra Malaysia sponsored a regional consultative workshop in Kuala Lumpur, Malaysia, in 1994. Some 23 individuals -- experts in agricultural extension; environment education, training, and communication (EETC); and program managers and government officials -- from 10 countries met to evolve a conceptual framework for undertaking FAO/UN-supported EETC activities. With lessons learned from the Indonesian experience, the best practices, strategies, methods, and operational and implementation procedures for mainstreaming EETC activities into existing agricultural extension programs were chalked out. These agreed-upon, standardized EETC procedures included participatory mechanisms to ensure a client-orientation of programs, and extensive horizontal knowledge interchange among participating institutions and environment

education and training planners within the country, region, and globally (Adhikarya, 1996). In this Kuala Lumpur workshop, eight institutions from six Asian countries, including the AAET in Indonesia, decided to launch future EETC activities. Several of the participants of the 1994 Kuala Lumpur workshop participated in the present Toronto workshop, sharing their in-country EETC experiences (Martaamidja & Rikhana, 1997; Yassin, 1997; and Halim, 1997). The network of individuals who participated in the Kuala Lumpur workshop in 1994, and then later in other programmatic and consultative forums, played a critical role in enhancing the effectiveness of this FAO/UN's environment education, training, and communication initiative through participatory consultations, peer learning activities, program reviews, and maintaining quality assurance and standards (Adhikarya, 1996; Singhal & Kandath, in press).

What outcomes resulted from this FAO/UN supported initiative? This programmatic effort provided opportunities for knowledge-sharing and partnerships across institutions and agencies within and across the eight participating institutions in the six Asian countries. It led to participatory staff training in EET processes and methods, such as needs assessment, training module development, pre-testing, multi-media materials packaging and production, training of trainers, and training module utilization for training of extension workers. More tangibly, this effort led to the development of an environment education and training module (EETM) in each participating institution. Each training module is 15 to 25 hours in length, providing a tremendous flexibility for adaptation and utilization in short training courses. To date, more than two batches of master trainers have been trained by all the participating agricultural extension institutions in the six Asian countries. In addition, hundreds of agricultural extension workers and thousands of farmers have been educated and trained in sustainable and desirable environmental practices. In Bangladesh alone, some 200 agricultural extension workers and 6,000 farm families were trained in EETC activities in 1997 (Halim, 1997). Copies of the environment education training module (EETM) were distributed to an additional 15,000 Bangladeshi agriculture extension workers. Various NGOs in Bangladesh have also requested the use of the EETM for their grassroots training activities. In each of these six countries, the potential for utilizing the EETM outside the agricultural

sector is now being explored. In addition, a virtual knowledge partnership network has been created between individuals and resource persons involved in the FAO/UN-supported EETC activities: An Internet WWW site, managed by EDI/World Bank, where the ex-FAO official Dr. Ronny Adhikarya is presently based, is already in place for information-sharing and dissemination (its URL address has been provided previously).. Also, FAO/UN is publishing a book (Wentling, in press) to document and more widely disseminate the lessons learned and the best practices of its EETC activities.

By developing partnerships with high-quality, in-country training institutions (such as AAET in Indonesia), who could multiply the training effort, FAO/UN was, in essence, “wholesaling” or “franchising” its environment education training. Instead, if FAO/UN had decided to retail its environment education training courses on its own, it would have required substantial donor resources and would have had very limited in-country impact. By franchising to national training institutions, the EETC effort is assured sustainability. Further, the capacity of the in-country institutions and their staff are enhanced, while ensuring that the training curriculum is culturally and geographically relevant. Most importantly, such efforts are neither donor-driven or donor-dependent, and illustrate a well thought out “exit” strategy on part of the donor organization.

The experience gleaned from the six in-country FAO/UN projects suggests that environment education, training, and communication programs can be mainstreamed and piggybacked onto existing agricultural extension programs. The key lessons include the building of strategic alliances, carefully identifying and selecting partner organizations, encouraging buy-in of relevant stakeholders, strategically positioning environment education messages for the poor, weak, and vulnerable client populations, and carefully choosing entry points for environmental messages (Adhikarya, 1997). Programs can be made more sustainable by incorporating participatory curriculum development procedures, using local trainers and resources, facilitating the ownership and marketing of EETC product lines (such as the training modules), the franchising and wholesaling of training to influential, in-country organizations for multiplier effect (as FAO/UN did with Indonesia’s AAET), enforcing quality standards, and adhering to an agreed-upon conceptual framework (Adhikarya, 1996;

Wentling, 1997a; Wentling, in press). FAO/UN's multi-country experience with EETC institutionalization also highlights the importance of developing global partnerships, facilitating EETC program replications, and documenting, sharing, and disseminating best practices through workshops, conferences, and publications, as exemplified by the forthcoming Wentling (in press) EETC book. Needed next are third-party empirical evaluations, including cost-benefit analyses, of the short and long-term environmental benefits derived from these FAO/UN initiatives in the six Asian countries.

FAO/UN's Extension, Education and Communication Service (SDRE), its partner organizations in the six participating Asian countries, and the members of its EETC network, need to be complemented for developing and utilizing a well-tested conceptual framework for environment education, training and communication activities, and for devising practical, standard operating procedures, which are also flexible and adaptable in different contexts. Concurrently, a similar program, sponsored by SDRE/FAO and the United Nation's Population Fund (UNFPA) incorporated population education concerns into agricultural extension training programs of 12 countries in Africa, Near East, and Latin America. There is a tremendous need to find resources to support and scale-up such sustainable environment and population education, training, and communication initiatives. The FAO/UN initiatives, described above, represent the proverbial, prototype case of catalyzing change where small inputs yield big social outcomes.

A Contingent View of New Communication Technology

A good deal of discussion in the present workshop centered around the role of new information technologies -- such as computer-based communication systems, satellites, optical fibers, and telephony -- in environment education, training, and communication activities. It was highlighted that new technologies make possible access to a wealth of knowledge and information, facilitate sharing of know-how, and contribute to efficiencies associated with information storage, retrieval, and usage. Such new technologies continue to flourish and "whether we like it or not, the world is becoming smaller, virtually", in the words of a workshop participant.

However, on a global level, one must not lose sight that access to such new technology is mostly an elitist privilege. Technologies such as the Internet, or even lesser still -- the telephone - represent in most developing countries a "class" phenomenon, not a "mass" phenomenon, and may help increase gaps between the information rich and the poor (Tichenor & others, 1970). So guarding against technological determinism, that is, the viewing of technology as the driver of social change, may be prudent. The following story, narrated by one of the workshop participants, is compelling. Foreign aid workers told a village woman in a poor developing country with unabashed excitement: "We will set-up computers in your village and hook you to the Internet and then you can communicate with the entire world". "No, thank you", said she. "Why waste so much money? Just provide me a bicycle so that I can go talk to my friends in the next village". So one needs to guard against a seemingly "high tech" but realistically "low touch" approach. Also, in developing countries, new technologies operate in a harsh infrastructural environment: Power outages, non-working telephone lines, and inadequate maintenance procedures. Development managers should remember that new technologies are capital intensive and call for new teacher-learner competencies.

However, the new technologies can represent a wonderful resource for policy-makers and program managers to share technical know-how and best practices through the development of global, national, and local information data banks, management information systems, virtual universities, Internet, and World Wide Web (WWW) services. For instance, the planning of the present workshop and the subsequent dissemination of the workshop deliberations was greatly facilitated by the Internet and WWW services available to several of the core workshop participants. New communication technologies can also provide opportunities for developing countries to leap frog a technological era, without sinking large sums of money in obsolete infrastructure. Data storage, processing, transmission, and retrieval capacities have increased hundreds of times in the past decade and costs have substantially dropped, providing unprecedented opportunities for leap-frogging.

In sum, workshop participants, shunned both the utopian and dystopian views of new communication technology, subscribing to a more contingent view of technology in terms of its role in mainstreaming environment education, training, and communication in existing or newly-

initiated development programs. The contingency view holds that technology can have both desirable and undesirable impacts, and that these impacts are differentially determined by the context in which the technology is introduced at a particular time (Contractor, Singhal, & Rogers, 1988). Workshop participants agreed that new technologies should not replace or override indigenous knowledge systems, often derived from the accumulated wisdom of several centuries.

Sensitivity to Indigenous Knowledge

In mainstreaming environment education, training, and communication issues into development efforts, program managers and planners should especially be sensitive to client beneficiaries' closely-held indigenous knowledge systems. It is easy to overlook, deprecate, and sometimes even purposely ignore the prevailing traditional local wisdom, and end up with disastrous social outcomes. The case of Balinese rice fields is illustrative. For centuries, rice fields on the island of Bali in Indonesia have produced up to a ton of rice per acre per year with little or no added fertilizer. Because of ample rice yields, the small densely-populated island can support more than 2 million people. Unknown at one time to most experts, these high rice yields are supported by a complex irrigation system managed by Hindu priests and water temples that regulate water flows (Lansing, 1991). Rice fields are ingeniously terraced so that irrigation water descends from a high crater lake, tumbling from one rice plot to another, inching its way for miles down to the sea (Rogers, 1995). Water temples do more than manage water to the crops. Each rice terrace is a complex ecosystem and pests like rats, brown leaf hoppers, and others are controlled by the coordination of water flow and usage among neighboring farmers. When Green Revolution agricultural technologies were introduced in Bali in the past few decades, the indigenous irrigation practices and knowledge-base was ignored by the program managers, wreaking havoc on the Balinese rice fields: Pest populations increased, fishes and eels died of pesticide poisoning, and rice yields dropped precipitously (Rogers, 1995).

Environment educators and trainers should be aware and especially sensitive to the indigenous knowledge systems of the client beneficiaries (Freire, 1970; Chambers, 1986). A good strategy is to build on what the clients' already know. Local folklore, tales, proverbs, and analogies that the clients are familiar with can be creatively adapted to teach new practices. For

instance, to teach rice farmers the family planning concept of "spacing" children, one can use the analogy of transplanting rice seedlings. If one plants the seedlings too close to each other, they fight over nutrients. Such analogous strategies derived from the indigenous knowledge base of the client audience are invariably more effective than expert-driven strategies derived from an alien context.

In the previous two sections, the role of new communication technology and indigenous knowledge systems in promoting EETC activities were discussed. In the next two sections, we discuss the role of emotional message appeals and mass media strategies in promoting EETC activities.

Tapping the Power of Emotion

Persuading people to protect and preserve the environment is difficult, especially when their livelihood depends on it. Rational and intellectual appeals fall on deaf ears on an empty stomach. Even if environment conservation messages are heard, as one workshop participant said: "What is heard is often not understood; what is understood is often not accepted; what is accepted is often not done; and what is done is often not maintained". In the absence of coercion, the communicative challenge is to go beyond intellectual parleys and to affect people emotionally. People fight for what they love and willingly give up their lives for what they consider sacred. In Mexico City, in December, 1997, the present author (Singhal) saw a poor Mexican Indian couple who walked for 8 days and crawled on bruised knees for the last six miles to enter the Basilica of the Virgin Mary of Guadalupe. Along with this couple, some 4.5 million pilgrims descended on Mexico City that weekend to celebrate the feast day of the Virgin Mary. So the communicative challenge can be posed as follows: Can Mother Earth be made as sacred as the Virgin Mary?

History too often tells us that emotionally-charged people can do anything to protect or even desecrate temples, mosques, and churches. But why don't people take up arms when their Mother Earth is desecrated? Or, why don't people simply check themselves and their loved ones from desecrating the environment? In Thailand, when trees are dressed in saffron-colored monk's clothes, lumberjacks bow to them in respect and leave them alone. Also in Thailand, when the government tried to convince people through the use of rational, intellectual appeals to stop using

styrofoam cups in making flower wreaths, few people complied. However, when the names of the “offenders” were displayed in public places, styrofoam use dropped dramatically. Why did emotionally embarrassing appeals work better than rational, intellectual appeals? Because people fight for what they hold dear; in this case, their reputation.

In sum, emotions have an important role to play in the fight against the desecration of Mother Earth. However, to date, the power of emotions has not been systematically and ethically tapped for this universally-sacred activity.

Appropriate and Innovative Use of Mass Media

In addition to employing appropriate message appeals, choosing the right mix of communication channels is important for the effective conduct of EETC activities. Previously, we highlighted certain advantages of “piggybacking” on existing interpersonal communication channels – such as extension workers and school teachers -- to reach a large number of target beneficiaries in a reliable and sustainable manner. One should also carefully consider the use of appropriate mass, folk, and other credible local media channels in promoting EETC activities. In developing country contexts, radio can be an especially powerful carrier of environmental education messages. Radio can reach the poor, weak, and the most vulnerable segments of society, including those who live in the most degraded part of the environment, in ways that TV or print can not. Further, radio programming is inexpensive and can offer tremendous economies of scale in terms of the number of people reached per unit dollar of investment. As one development policy-maker and practitioner said during the workshop: “If one has 20 percent of needed resources and wants to derive 80 percent benefit, radio is the answer”.

The Entertainment-Education Strategy

Whatever the communication channel, the challenge is to make environment education interesting so as to get the audiences’ attention, keep them engaged, and arouse them to take action. One such media-driven, audience-engaging approach, consistent with the principles of social marketing (Kotler & Zaltman, 1971) and other behavioral science approaches, is the entertainment-education strategy. Entertainment-education is the process of purposely designing

and implementing a media message to both entertain and educate, in order to increase audience members' knowledge about an educational issue, create favorable attitudes, and change overt behavior (Singhal, Rogers, & Brown, 1993; Singhal & Rogers, in preparation). The entertainment-education strategy is remarkably versatile: It can be employed with both mass and interpersonal channels including radio, television, print, film, theater, music, and theater. It can also be incorporated in a variety of popular genres such as soap operas, cartoons, rock music, folk drama, and others. In the past decade or so, media practitioners in several developing countries have designed and implemented entertaining soap operas on radio and television to promote literacy, gender equality, family planning, and HIV/AIDS prevention; rock music campaigns to promote sexual responsibility and racial tolerance; and street theater to promote maternal and child health.

Research evaluations of past entertainment-education programs show that this strategy is effective (Singhal & Rogers, 1989; Nariman, 1993; Piotrow & others, 1997). Such programs have consistently generated large audiences (with audience ratings of up to 90 percent for some entertainment-education soap operas in certain countries). By keeping the audience members entertained and engaged over a long period of time (for instance, several years in the case of soap operas), such programs generate strong audience effects because of their emotive content, message repetition, and by virtue of spurring interpersonal communication among audience members about the plot, the media characters, and their modeled behaviors. The entertainment-education strategy is rather unique in that it allows for commercial and social interests to co-exist. By attracting a large audience, these programs attract commercial sponsorship and allow for cost-recovery. They can also serve a vital agenda-setting role for policy-makers, mass media, and the public about an education issue or topic. In recent years, entertainment-education programs in countries such as India, Indonesia, and St. Lucia have promoted environment conservation and population control messages. It is important that best practices of the entertainment-education strategy be show-cased for national policy-makers, broadcast officials, and media practitioners, especially to those who have an interest in launching EETC activities.

Conclusions

A tremendous opportunity exists to mainstream environment education, training, and communication (EETC) activities into development programs in agriculture, health, education, and population. To do so, needed are (1) front-end, pro-active policy-making mechanisms, (2) collaboration among the various EETC stakeholders, (3) a need-based demand-driven EETC methodology, (4) harnessing of existing delivery mechanisms (exemplified by the strategy of “piggybacking”) (5) high-quality training of resource people and the building of institutional and staff capacity at the local, national, and global level, (6) a contingent view on the role of new communication technologies, (7) sensitivity to indigenous knowledge systems, (8) an emotional approach to mobilizing people, and (9) appropriate and innovative use of mass-media strategies, for instance, utilizing the strategy of entertainment-education which allows for the balancing of both commercial and social interests.

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Appendix B
Workshop Agenda

**Mainstreaming Environment into Development Programs
through Education, Training and Communication:
Best Practices and Future Challenges**

Monday, June 23, 1997

Session 1:

Chairperson:

Ms. Alicia Barcena, Deputy Chair, Commission on Education & Communication, IUCN/World Conservation Union, and Senior Advisor, United Nations Environment Program (UNEP)

Partner Organizations: FAO/UN and IUCN

14.30 - 16.00
Toronto Colony
St. David Room

**Mainstreaming Environment into Development Programs:
Policies and Strategies for Education, Training and
Communication**

Presentations:

"Communicating Environment Concerns through Health Education Programs: Lessons Learned from Policy Advocacy and Coordination in the Philippines"

Dr. Juan Flavier, Senator and Former Secretary of Health, the Philippines

"Strategic Incorporation of Environment Concerns into Non-Formal Education: Present Priorities and Future Needs in Thailand"

Dr. Kasama Varavarn, Director General, Dept. of Non-Formal Education, Min. of Educ., Thailand

"Translating Sustainable Development Policies into Environment Education Actions: FAO/UN's Strategies in Assisting the Information Poor"

Dr. Tito Contado, Chief, Extension, Education, and Communication Service (SDRE) Food and Agriculture Organization (FAO) of the United Nations, Italy

"The World Bank's Efforts in Developing Policies and

Strategies for Environment Education, Training and
Communication"

Dr. D. Lakshmanan Ariasingam, Environment Department, The World Bank, USA

Lead Respondents:

Dr. M. Shafie Sallam, Chairman Governing Council, Regional Centre on Agrarian
Reform & Rural Development for the Near East (CARDNE)

Prof. Everett M. Rogers, Chairman, Dept. of Communication & Journalism, University of
New Mexico

Tuesday, June 24, 1997

Session 2:

Chairperson:

Dr. Tito Contado, Chief, Extension, Education & Communication Service
FAO/United Nations

Partner Organizations: FAO/UN, World Bank/EDI, and Ohio Univ.

09.00 - 10.30
Toronto Colony
St. David Room

**State of the Art in Environment Education, Training and
Communication: Lessons Learned and Best Practices
from Country Experiences**

Presentations:

"Participatory Environment Education through
Agricultural Extension Training: Innovative Partnership
Methods and Best Practices from FAO's Experiences"

Prof. Tim Wentling, rayce Wicall Gauthier Prof. & Head, Dept. of Human Resource
Education, College of Education, Univ. of Illinois at Urbana

"Environment Education in Indian Schools: Towards a
Nationwide Effort"

Ms. Meena Raghunathan, Programme Coordinator, Centre for Environment Education
(CEE) India

"Promoting Sustainable Rural Development Practices
through Environment Education Training of Agricultural
Extension Workers: Results and Lessons from Indonesia"

Dr. Soedradjat Martaamidjaja, Director
and Ms. Mariam Rikhana, Subject Matter Specialist
Agency for Agricultural Education and Training
(AAET), Indonesia

"Present Challenges and Future Directions of
Environment Education and Communication"

Dr. Ronny Adhikarya Senior Training Officer, New Products & Outreach Div. (EDINP),
the World Bank.

Lead Respondents

Dr. Ellard Malindi, Permanent Secretary, Ministry of Agriculture, Malawi
Prof. Arvind Singhal, College of Communication, Ohio University
Dr. Chye-Hean Teoh, Dept. of Geography & Environmental Science, Monash University

Tuesday, June 24, 1997

Session 3:

Chairperson:

Dr. Nicanor Austriaco, Executive Director,
Continuing Education Center, Asian Institute of Technology (AIT), Thailand

Partner Organizations: AIT, FAO/UN and Univ. Putra Malaysia

11.00 - 12.30
Toronto Colony
St. David Room

Institution Building for Sustainable Environment Education Programs: Best Practices and Future Challenges

Presentations:

"Partnership in Environment Education & Training to
Support Rural Development: Results and Experiences from
the Philippines"

Prof. Alfredo B. de Torres, Inst. of Environmental Science and Management (IESAM) and College of Economics and Management, Univ. of the Philippines at Los Baños, the Philippines

"Capacity Building Strategies and Methods in Environment Education in Malaysia: Present Needs and Future Directions"

Prof. Sulaiman Yassin, Dean, Faculty of Arts & Sciences, University Putra Malaysia

"Institutionalizing Environment Education into Agricultural Extension and Training: Results and Experiences from Bangladesh"

Prof. Abdul Halim, Bangladesh Agricultural University,

Lead Respondents

Dr. Joseph Mbindyo, Director, School of Journalism, Univ. of Nairobi, Kenya
Dr. Soedradjat Martaamidjaja, Director, Agency for Agri. Educ. & Training, Indonesia
Dr. Carlos Cavalcanti, President, Brazilian Assoc. of Rural Extension, Brazil

Tuesday, June 24, 1997

Session 4:

Chairperson:

Dr. Charles Okigbo, Executive Coordinator,
African Council for Communication Education (ACCE), Kenya

Partner Organizations: COL, Simon Fraser Univ., AIT, and IUCN.

14.30 - 16.00
Toronto Colony
St. David Room

**Innovative Strategies and Methods in Environment
Education and Communication: Applications of Computer
and Information Technologies**

Closed-Door Session

16.15 - 18.30
Toronto Colony

St. David Room

**Planning Session for Suggested EETC Follow-Up and
Networking Activities**

Wednesday, June 25, 1997

Special Event:

Convener:

Prof. Everett M. Rogers, Univ. of New Mexico

09.00 - 10.30

Toronto Colony

St. David Room

Panel Discussion on:

**"Narrowing Development Know-How Gap: How New
Communication Technologies Can Help Educate the
Information Poor"**

Convener/Moderator:

Prof. Everett M. Rogers, Dept. of Communication & Journalism
Univ. of New Mexico

Panelists:

Dr. Juan Flavies, Senator, and former Secretary
of Health, the Philippines

Dr. Kasama Varavarn, Director General,
Dept. of Non-Formal Education, Min. of Education, Thailand

Prof. Tim Wentling, Grayce Wicall Gauthier Prof.
& Head, Dept. of Human Resource Education,
College of Education, Univ. of Illinois at Urbana

Dennis Foote, Vice President, Academy for Educational Development
Washington D.C.

Appendix C

Summary Record of Discussion among Core Workshop Participants About Next Steps

Next Steps and Follow-Up Activities for Environment Education, Training and Communication (EETC) Networks

I. Policy Outreach

1. IUCN/World Conservation Union is spearheading a policy advocacy initiative with OECD member countries to place higher priority (both in terms of programmatic activities and financial support) on environment education, training, and communication (EETC) issues. GTZ in collaboration with IUCN/World Conservation Union will prepare a policy & strategy paper for OECD's Development Assistance Committee (DAC) to provide increased resources/development aid for EETC programs. Workshop participants have agreed to contribute specific and relevant inputs and a small task-group has been formed to assist in the preparation and finalization of the policy & strategy paper which will be discussed in an OECD/DAC meeting in October 1997.

2. IUCN/World Conservation Union is also drafting a position paper on the topic of national environmental planning and invites inputs from EETC network members.

3. The Regional Centre on Agrarian Reform and Rural Development for the Near East (CARDNE) is planning to develop specific policies (with an EETC component) to guide agriculture extension strategies and programs among member countries. Most member countries at present do not have established agricultural extension policies nor guidelines for incorporating environment concerns into their agricultural education and training.

4. The Arab Planning Institute (API) based in Kuwait has a strong interest in sensitizing leaders/policy-makers in the Arab region in environmentally-friendly policies that support economic growth, through organizing specific senior policy seminars or workshop.

5. Corporation OIKOS, an NGO dealing with environment education and training issues in Ecuador, is collaborating with UNITAD to develop an environment education curriculum for 17 countries. It invites other EETC network members and interested organizations to collaborate and/or share their experiences.

6. The Center for Environment Education (CEE) in Ahmedabad, India will prepare an information networking activity proposal for knowledge sharing among top-level national policy-makers and middle managers of development programs on environment education and training priorities, lessons learned, and best practices.

7. EETC network organizations should try to place the issue of "environment education and training for sustainable development" into the meeting agendas of international agencies. Environmental education can be incorporated through various development sectors, such as health, agriculture, public works, etc. in the larger call for sustainable development programs.

II. Institutionalization of Training and Capacity-Building

8. A need exists to develop several regional centers of excellence around the world which can serve the training needs for EETC activities. The need for sensitizing policy-makers and training-of-trainers

(TOT) on environment topics is high and largely unmet to date.

9. The Asian Institute of Technology (AIT) in Thailand has received a directive from its new President to initiate programs directed at legislators and policy-makers in Asia (and elsewhere). AIT perceives a need to sensitize national legislators/policy-makers in environment issues. AIT with possible collaboration with the EDI/World Bank will seriously look into the prospects of developing institutional capacity to (1) sensitize policy-makers on EETC, and (2) provide training of trainers on improving their training quality. AIT will also look into the possibility of creating strategic linkages with API and CARDNE to direct programs on the environment to policy-makers and senior managers of development projects. In these efforts, the focus will be on sharing of processes and methodologies so that capacity-building occurs.

10. With respect to institutionalization of training on environment education and communication (EETC) issues, higher priority must be given to training of master trainers, and to EETC curriculum development, testing and adaptation. More training courses may be launched by national training institutions participating in this workshop and AIT in future years on EETC issues drawing upon the eight environment education training modules (EETM) developed in six countries through FAO's initiative.

11. In the context of supporting institution and capacity building, the Economic Development Institute (EDI) of the World Bank will study the possibility of organizing a Trainers' Workshop for master trainers on improving training quality through innovative curriculum development and distance learning methods. Possible partnership with AIT's Continuing Education Center (CEC) and the College of Education, University of Illinois in organizing such a workshop will be explored.

III. Development of Learning Support Materials

12. A tremendous need exists to conduct an inventory analysis of case-studies and best (and worst) practices with respect to environment education, training, and communication. This inventory analysis needs to be conducted at the global, regional, and national levels. Information/data compiled through such an inventory-analysis can then be used as inputs to sensitize policy-makers, to design and conduct various national, regional, and international training programs on EETC activities, and to produce environment publications, newsletters, and public awareness materials.

13. The Centre for Environment Education (CEE), India and its South and Southeast Asia Network for Environmental Education (SASEANEE) will prepare a proposed collaborative activity (for consideration by interested partner institutions) to develop and produce EETC resource database and materials, which should be made available both in printed and electronic/Web-based versions, such as: (a) a Directory of EETC oriented organizations (both governmental and NGOs) giving details of their capacities, resources, expertise and experiences in EETC, (b) an inventory-analysis of government-initiated EETC programs in the region outlining its policies, strategies, and activities, and (c) EETC's Best-Practice CaseReports which should focus on the process, methods, results and lessons learned from government and NGOs experiences in planning and implementing EETC programs in the Asian region.

14. FAO's EET network members are preparing a book to document the process, methods, results and lessons learned from the six countries' experiences in undertaking participatory environment education activities through agricultural extension and training programs, including the development and utilization of the Environment Education Training Modules (EETM).

15. To serve the needs of documentation, information-sharing, dissemination and follow-up discussion on EETC ideas and news, a Post-Workshop WebSite (a sequel to the one created for the Pre-Workshop discussion/briefing activities) will be maintained by EDI/World Bank. Such a WebSite is aimed at facilitating exchange of EETC know-how and experiences among network members and partner organizations, as well as publicizing relevant EETC activities and events.

IV. Strategic Alliances, New EETC Initiatives, and Show-Casing

16. EDI/World Bank will consider "partnership" activities with interested agencies or organizations (such as IUCN/World Conservation Union, FAO, GTZ, AIT, etc.) to promote environment education, training, and communication, including the integration of environment issues into non-formal education/training and public awareness programs of development agencies and NGOs.

17. The Brazilian Association of Rural Extension (BARE) has a strong interest in integrating environment education, training, and communication issues in the ongoing work of its agricultural extension services. BARE will hold a meeting on this issue in Brazil later in 1997 or in early 1998. It wants to learn from best practices of other EETC network partners. Brazil has the potential to be a showcase in Latin America with respect to integration of EETC issues with agricultural extension services. BARE would want to invite representatives of its neighboring countries to such a meeting in collaboration with interested partner organizations.

18. The Ministry of Agriculture and Livestock Development in Malawi is interested in learning from FAO's EETM network member organizations and resource persons on the strategies and methods of integrating environment education into agricultural extension training programs. Malawi's Ministry of Agriculture would like to serve as the base for launching EETM activities in Africa and be a regional model for such efforts.

19. Bangladesh Agricultural University would like to continue in (1) developing new environment education modules on various specific topics, (2) developing EET modules for sensitizing policy-makers, (3) developing problem-solving packages on environment issues that can then be commercially sold, and (4) launching mobile training programs on EETC activities in developing countries.

20. Universiti Putra Malaysia (UPM) sees a strong need for (1) a workshop on the EET module development strategy, (2) working with policy-makers on the environment issues through "back boys", or key people who have access to decision-makers, (3) implementing local Agenda 21 with the urban population in Malaysia, and (4) involving the private sector in EETC issues.

21. The Commonwealth of Learning (COL), Canada, has a strong interest in working with EETC network member organizations which want to disseminate environmental messages through distance education programs. COL has developed several media series on environmental issues (in cooperation with UNESCO) that can be made available to network partner organizations.

22. The African Council for Communication Education (ACCE), Kenya, indicated interest in developing expertise and in adapting the EETM method to address population and other pressing development issues. ACCE proposes that the FAO-sponsored EETM processes and activities be show-cased for a working group that meets in Kenya in October, 1998. ACCE is also eager to serve as a center

for training of media personnel on environmental education, training and communication issues.

23. GTZ- Germany wants to learn from the experience of FAO's EETM network member organizations and resource persons.

24. Indonesia will be hosting a national seminar on "Management of Industrial Waste and Garbage" in early 1998. GTZ will look into the possibility of sending an international expert to serve as a resource person for this seminar.

V. Research and Evaluation

25. To facilitate further replications and expansion of the FAO's EET activities, an assessment of its strategies, methods and training modules utilization is suggested. Furthermore, evaluation of its impact in terms of applications of the EET approach at the field-level in support of agricultural extension activities (i.e., by extension workers and farmers) should be attempted. Process and summative evaluation, including procedures for obtaining empirical data on the learning impact, should be included in participatory environment education through agricultural extension and training activities. Similar research and evaluation of other EET programs should also be encouraged and the dissemination and sharing of such evaluation results should be facilitated for improving further the cost-effectiveness of future EET programs.

26. The Department of Human Resource Education, University of Illinois has proposed a research project with respect to the use of new information & communication technologies in support of environment education and training programs, including virtual information networking activities among EET network members.

VI. Innovative Media Practices and Training of Media Personnel

27. EETC network member organizations should pay more attention to initiating and evaluating innovative mass media approaches to environment education, training, and communication. A serious consideration should be given to the use of entertainment-education radio and TV soap operas that deal with such educational topics in an entertaining way. Such programs allow for cost-recovery, reach a massive audience, have generally stronger effects because of their message repetition, emotive content, and spurring of interpersonal communication, and serve a vital agenda-setting role for policy-makers, mass media, and the public. An opportunity exists to evaluate a presently on-going environment-education TV soap opera in St. Lucia and to create and evaluate a new radio soap opera in India on the topic of environment conservation. The School of Interpersonal Communication, Ohio University and the Department of Communication and Journalism, University of New Mexico have been involved in designing and evaluating such media initiatives in various developing countries (India, Tanzania, China, and others) and offer to show case the best practices associated with these innovative media strategies to national policy-makers and other interested sponsors of such initiatives.

28. A strong need exists to create a cadre of environmental journalists. Media training institutions should incorporate EETC issues in their journalistic curriculum. As mentioned previously, ACCE in Nairobi, Kenya can serve as a center for training of media personnel on environmental issues.

VII. Use of New Technology

29. New communication technologies (for instance, computer-assisted learning, Internet-based virtual networking, Web-based distributed and collaborative learning, etc.) need to be consciously incorporated in designing, implementing, and monitoring environment education, training, and communication programs. They are also invaluable tools for documentation and sharing of various field-based EETC experiences.

30. A virtual information networking among workshop participants was proposed through a specially designed WebSite to continue the workshop discussion and to facilitate exchange of ideas and experiences on EETC, including possible follow-up collaborative EETC activities. WB/EDI's Pre-Workshop WebSite has now been expanded to include a Post-Workshop WebSite for the above mentioned purpose.

A description of the follow-up activities already undertaken by the core workshop participants, refer to Appendix D.

Appendix D

Post-Workshop Follow-up Activities

POST-WORKSHOP FOLLOW-UP ACTIVITIES

Several follow-up activities have been initiated after the June, 1997 Toronto workshop on **"Mainstreaming Environment into Development Programs through Education, Training, and Communication: Best Practices and Future Challenges"**. These follow-up activities directly emerged from the workshop sessions and the closed-door meetings held between the core participants in Toronto. A detailed note on these follow-up activities is available electronically at <http://www.worldbank.org/html/edi/toronto/post/index.htm>. However, short synopsis of each activity is also provided here.

#1. Developing Innovative Training Curriculum

In order to provide senior trainers an opportunity to improve their "know-how" in curriculum design and training module development processes and methodology, the World Bank's New Products and Outreach Division (EDINP) in collaboration with the Asian Institute of Technology and the College of Education, University of Illinois is organizing a Trainers' Workshop on "Improving Training Quality through Peer Learning and Distance Mentoring" in April or May, 1998.

#2. Finalization of Book on Environment Education through Agricultural Training

Under the editorship of Dr. Tim Wentling of the College of Education, University of Illinois and with the support of Dr. Tito Contado of the FAO/United Nations, a book on "Participatory Environment Education and Training for Sustainable Agriculture: Best Practices in Institutional Partnerships, Peer Learning and Networking" is being finalized. Ten of the core workshop participants are contributing chapters to this volume, including several who were directly involved with the FAO/UN supported environment education, training, and communication activities in six Asian countries.

#3. Environment Education & Communication Policy Paper for OECD/DAC

Under the direction of Mr. Manfred Oepen, a GTZ consultant, who was also one of the core workshop participants in Toronto, a policy and strategy paper on environment education and communication has been prepared for OECD/Development Action Committee (DAC), under the sponsorship of GTZ in collaboration with IUCN/World Conservation Union. Several EETC workshop participants provided inputs in the preparation of this policy paper.

#4. Proposal from Centre for Environment Education, India

One of core workshop participants in Toronto, Ms. Meena Raghunathan, Programme Coordinator of the Centre for Environment Education (CEE) India, has prepared a draft proposal titled "Environmental Education, Training and Communication (EETC) in South and Southeast Asia: Taking Stock of the Present to Build for the Future", building on some of the workshop ideas. This proposal is presently being circulated among the core workshop participants for possible next steps.

#5. Senior Policy Seminar on EETC for the Near East

Dr. Mohamed Shafie Sallam, one of the core workshop participants in Toronto and the Chairman of the Executive Council of the Regional Centre on Agrarian Reform and Rural Development for the Near East (CARDNE), has recommended to its Governing Council the organization of a Senior Policy Seminar on "Mainstreaming Environment Education into Agricultural Training and Extension Program in the Near East". It is proposed that the Seminar will be held in mid or late 1998.