COORDINATION EMERGING NEEDS AND ACTIONS IN ENVIRONMENTAL EDUCATION

Report of the Regional Workshop
for
Eastern and Southern Africa
held in Nairobi, Kenya,
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Prepared by:
Margaret Karembu
Kabiru Kinyanjui

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Acknowledgement

Foreword

It is evident that widespread unsustainable use of natural resources is causing massive and in many cases, irrevocable environmental degradation. This destruction is largely driven by social and economic factors, the most important being low levels of environmental literacy among the populace, an area that environmental education (EE) has widely been acknowledged to address, but which it hasn't. EE should work towards the development of a citizenry that is environmentally knowledgeable and above all, skilled and motivated to work individually and collectively towards achieving and maintaining a dynamic equilibrium between quality of life and quality of the environment.

Although a lot of effort has been directed towards re-orienting EE to achieve these tasks, no significant progress has been recorded. Most of the deficiencies are now being attributed to limited coordination and collaboration among EE stakeholders, weak implementation and follow-up mechanisms, sectoral approaches to EE, lack of institutional and human capacities to facilitate effective implementation, and perhaps most importantly, lack of integration of indigenous knowledge with scientific knowledge systems, despite the acknowledged potential that such integration entails.

Effective learning in EE involves not just a change or growth in understanding but also a willingness to depart from previously held attitudes and beliefs, and to make commitments to new ways of interacting with the world. To accomplish meaningful and effective change, it is necessary to employ a range of learning strategies that address knowledge, attitudes, values, and behavioural orientations as part of an integrated, long term strategy from a social and ecological context.

The Regional Workshop on Environmental Education in Eastern and Southern Africa, held in Nairobi from 2 to 8 November 1997, provided an opportunity for key stakeholders in EE in the region to discuss ways of moving forward in making past commitments a reality, and in particular, strengthening the processes and capacities for acquisition of knowledge, skills, and attitudes for sustainable development at the community, national, and regional levels.

The workshop was unique in many ways: EE as a process involving not just the acquisition of knowledge, skills, values, and practices, but also their application and incorporation in day-to-day activities and experiences, was thoroughly delineated through the environmental learning concept that the workshop adapted. The *Sokoni* (market place) session offered an excellent opportunity for learning and forging practical collaborative links based on first hand experience with new ideas and innovative approaches to EE. Lastly, most of the participants undertook the responsibility of facilitating implementation of most of the activities that the workshop identified.

Most of the agenda was devoted to group discussions and informal interactions focusing on the priority areas that had been identified prior to the workshop. These were: partnerships in EE; technology in environmental learning; integration of indigenous knowledge systems in EE, and community learning processes and practices. This facilitated the drawing up of a three year Action Plan which represents the activities as identified by the stakeholders. This report should thus be seen as a working document for EE partners (policy-makers, researchers, community educators, and donors) to identify with, and support.

In conclusion, it is important to note that IDRC is committed to supporting the research activities identified at the workshop. Funds have been set aside for this purpose, and a sub-regional NGO based in Kenya, EcoNews Africa has taken charge of the start-off research activities, and animating communication among partners. Sida is committed to supporting the establishment of an EE web-site to facilitate coordination, collaboration, and networking among and between donor agencies and the various EE stakeholders in the region. Learning and taking action on the environment is so crucial for our survival that it requires the kind of partnership and collaboration of the form identified in this report. It is our sincere hope that other concerned agencies will consider supporting implementation of the initiatives identified in the three year EE Action Plan.

Kabiru Kinyanjui   Rikard Elfving
IDRC   Sida

List of Acronyms

ACCE	African Council for Communication Education
ACHM	Africa Centre for Holistic Management
AMREF	African Medical and Research Foundation
CBOs	Community-Based Organisations
COMNESA	Community Media Network of Southern Africa
DELTA	Development Leadership Teams in Action
E-mate	Electronic Mate
EAEN	Eastern Africa Environmental Network
EcoSA	Education and Communication for Sustainability in Africa
EE	Environmental Education
ELF	Environment Liaison Forum
EWNHS	Ethiopian Wildlife and Natural History Society
FTPP	Forests, Trees and People Programme
GREEN	Global Rivers Environmental Education Network
GRID	Global Resources Information Data-Base
GTZ	German Development Co-operation
ICCE	International Centre for Conservation Education
ICTs	Information and Communications Technologies
IDRC	International Development Research Centre
IEEP	International Environmental Education Program
IGAD	Inter-governmental Authority on Development
IKS	Indigenous Knowledge Systems
IUCN	International Union for Conservation of Nature and Natural Resources
IUCN-CEC	International Union for Conservation of Nature and Natural Resources - Commission on Education and Communication
KEFRI	Kenya Forestry Research Institute
KU-CERE	Kenyatta University - Centre for Environmental Research and Extension
MISA	Media Institute of Southern Africa

MMC	Mtwara Media Centre
MoE-ZB	Ministry of Education - Zimbabwe
MoE-ET	Ministry of Education - Ethiopia
MoE-K	Ministry of Education - Kenya
MoE-ZM	Ministry of Education - Zambia
MoE-TZ	Ministry of Education - Tanzania
NEMA	National Environment Management Authority
NEMC	National Environment Management Council
NPB-SA	National Parks Board of South Africa
OAU	Organisation of African Unity
PEEPSEA	Project on Environmental Education in Primary Schools in Eastern Africa
PraSuPE	Practical Subjects in Primary Education
RELMA	Regional Land Management Unit
RIPS	Rural Integrated Project Support
SADC-REEC	Southern Africa Dev. Community- Regional Environmental Education Centre
SADC-ELMS	Southern Africa Dev. Community - Environment & Land Management Sector
Sida	Swedish International Development Corporation Agency
UNCED	United Nations Conference on Environment and Development
UNDP GEF/SGP	United Nations Development Programme Global Environment Facility/ Small Grants Program
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
URDT	Uganda Rural Development Training Programme
WESSA	Wildlife and Environment Society of Southern Africa
WWF	World Wildlife Fund
ZEEP	Zambian Environmental Education Program

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INTRODUCTION AND BACKGROUND

As we approach the next millennium, it is becoming increasingly clear that the earth's resources which sustain people and their economic systems are fragile and limited. Ensuring wise use of these resources requires an informed and concerned citizenry. An environmentally responsible citizenry is one with substantive knowledge, values, skills, and determination to act either individually or collectively to resolve current and future environmental issues. To help raise the levels of environmental responsibility, EE has been advocated for, and recognised as a vital tool for promoting new perceptions to guide patterns of behaviour between man and his environment.

EE is a process aimed at producing a citizenry that is knowledgeable about the biophysical and social-cultural environments, aware of environmental problems and management alternatives, and motivated to act responsibly in developing diverse environments that are optimal for living a quality life. EE means learning how to employ new technologies, increase productivity, avoid environmental disasters, alleviate existing disasters, see and utilise new opportunities, and make wise decisions from a philosophical basis of holism, sustainability, enhancement, and stewardship. The means and methods of achieving this task through EE has been a subject of discussion for many years.

During the last two decades in particular, several meetings, symposia, pilot projects, and action programs on EE have been conducted at global, regional, national, and institutional levels. At such meetings, (Belgrade Charter 1975; UNESCO-UNEP 1976; 1987; UNCED 1992; Brundtland Report 1987; Sida 1993;

1994; IDRC 1994) issues related to the structure and scope of EE have been raised. Some of the issues concerned EE content and audiences; aims and objectives; program development strategies and methodologies; EE policies; potential of new and emerging communication technologies for environmental learning; networking in EE; teaching and learning materials development; research, and personnel training needs. Recommendations, pledges, and declarations were also formulated as they applied to the various identified needs, audiences, and educational levels.

Specific recommendations of some of these fora (UNESCO-UNEP 1976; 1986; 1987; UNESCO 1977, 1983; Brundtland Report 1987; UNCED-Agenda 21 1992; ACCE 1992; Sida 1993; 1995; UNESCO-EPD 1994; IDRC 1994; EcoNews/ACCE 1995; SADC-ELMS 1996) included the need to:

- fully integrate EE into national policies and programs;

- mobilise human resources for environmental protection through education;

- produce sufficient and appropriate learning materials adapted to local conditions;

- reorient education towards sustainable development;

- improve human and institutional capacities to address environment and development needs;

- develop EE curriculum prototype programs through regional and national collaboration;

- involve local communities in EE programs;

- carry out research in various EE aspects; and

- establish an interactive communication system for swifter and more systematic collection and dissemination of ideas, experiences, research results, and information on emerging EE needs at both formal and non-formal levels of education.

To be effective, environment and development education should deal with the dynamics of both the biophysical and socio-economic environment and human development; should be integrated in all disciplines; and, should employ formal and non-formal methods and effective means of communication......Agenda 21, Chapter 36 - 1992

Despite the numerous commitments, declarations, recommendations, and pledges that such fora have made over the last two decades, and particularly in the period following the 1992 Rio de Janeiro Earth Summit, little progress has been made in the area of practical application. Implementation strategies remain weak, coordination and collaboration among and between stakeholders is limited, while mechanisms for follow-up of recommendations are inadequate. This has significantly weakened the processes and capacities for the acquisition, transmission, and application of essential environmental knowledge, skills, attitudes, and values for sustainable development. The need to contextualise EE by integrating indigenous/ traditional knowledge and practices with scientific/conventional systems to suit local conditions and ensure a holistic approach to EE is still lacking. These shortcomings are compounded by a general lack of institutional and human capacities to facilitate effective implementation of EE.

It is within this context that holding a regional workshop for stakeholders in EE was considered necessary. The main aim of the workshop was to explore modalities and mechanisms for enhancing cooperation, collaboration, and networking between the various stakeholders, and ensuring that past recommendations for action on EE were effectively implemented.

The objectives of the workshop were to:

- provide a forum for sharing experiences and practices in EE with a view to strengthening cooperation, coordination, and networking among the various stakeholders;

- explore innovative approaches to environmental learning and develop strategies to enhance their utilization in formal and non-formal/informal education;

- formulate strategies and mechanisms for the integration of indigenous knowledge and community learning practices in EE programs;

- create awareness on appropriate and available resources in use for EE; and

- prepare a joint plan of action recommending a strategy for the implementation of the activities agreed upon by the various stakeholders.

Participants were also expected to assess the level of success attained by governments and the relevant international agencies in protecting and enriching the global environment, as pledged since the Earth Summit.

The spirit of the workshop was to move from the rhetoric so often associated with workshops and to take an action-oriented approach towards attitude and behavior change for the sustainable use and management of the

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environment. There was a strong emphasis on devising practicable implementation and follow-up strategies based on the knowledge and skills gained during the course of the discussions.

The 31 key EE actors who participated in the workshop were drawn from Ethiopia, Kenya, Malawi, Namibia, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. They comprised researchers, curriculum developers, community educators, and policy-makers. Representatives from international organizations and donor agencies came from GTZ, IDRC, IGAD, IUCN, Sida, UNDP/GEF-Small Grants Program, UNEP, and the World Bank.

WORKSHOP DESIGN AND METHODOLOGY

The organisation of the workshop and identification of the themes was conducted by a regional Steering Committee comprising persons with vast experience in EE. The Committee met for two days in Nairobi and designed the workshop format, identified the sub-themes, prepared the workshop program, and identified resource persons and participants to the workshop. The main sub-themes selected were: donor cooperation and collaboration for EE; technologies in environmental learning; integration of indigenous knowledge systems in EE; and community learning processes and practices. The selection was based on the premise that behaviour and attitude change towards the environment requires synergy between partnerships, access to technology, harmonisation of scientific knowledge with Africa's rich indigenous knowledge, and community involvement in order to realise a holistic approach to environmental management. Each sub-theme had three relevant case studies. In addition, a video capturing diverse environmental learning activities and innovations was produced.

The video is available in IDRC (on request) at a minimal fee of US$ 5. (See Appendix for the narration)

The workshop format entailed presentations of short papers, case studies, a video, EE games, group discussions, a field trip, as well as a *Sokoni* (market place) session, all based on some aspects of the identified sub-themes. Two days were devoted to plenary sessions where the papers and case studies were presented. For each sub-theme, main papers were presented first, followed by the case studies.

WORKSHOP SUMMARY

Plenary Sessions:

Opening Ceremony

The first plenary session on Monday, 3 November, was taken up by the Opening Ceremony. Welcome remarks were made by Dr Kabiru Kinyanjui of IDRC, while Mr Tom Anyonge delivered the opening remarks on behalf of Mr Anders Karlsson of Sida. The workshop was officially opened by Kenya's Permanent Secretary in the Ministry of Education, Mrs Elizabeth Masiga, while the Deputy Executive Director of UNEP Professor Reuben Olembo, gave the keynote address. *(See full speeches in Appendices)*

Institutional Familiarization

The second plenary session was dedicated to self introductions by the participants who explained the work of their respective institutions. They suggested ways of collaboration with other institutions and organisations represented, and then outlined what they expected to gain from the workshop. *(See Participants Profile, Appendix 2)*

Thematic Presentations

The first paper was presented by Marie Gronvall, a Sida consultant, who discussed donor support to EE in the Eastern and Southern Africa region. A case study on the Southern African Development Community's Regional Environmental Education Centre (SADC-REEC) was then presented by Jim Taylor. In a case study on the Inter-Governmental Authority on Development (IGAD), Berhe Debalkew outlined the role and activities of the membership agency as a participating partner in environmental learning projects.

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The second day of the workshop, Tuesday, 4 November started off with a presentation on Technology in Environmental Learning by Ida Opoku–Mensah. This was followed by three case studies illustrating this theme, namely:

- The Mtwara Media Centre (MMC) of Tanzania, presented by Lars Johansson;

- Community Radio, a project facilitated by EcoNews Africa - a sub-regional communication and information NGO - presented by Lynn Wanyeki ; and

- Technology, Modernism, Educational Resources, and the E-mate Computer, presented by Jim Taylor.

A paper on Utilization of Indigenous Knowledge Systems (IKS) in EE was presented by Joy Chidavaenzi. The three case studies related to this paper were:

- Material Culture: *Lessons from Living Traditions of Eastern Africa*, presented by Sultan Somjee;

- Grain pits as an indigenous technology used in the storage of food, presented by Solly Mosidi; and

- *Komba* Charcoal, an alternative energy source, which was presented by Bernard Bakobi.

In his paper on Community Learning Processes and Practices, Brian Rashid explored the dynamics of progress, based on the premise that every community is unique and has an important role to play in conservation. Three case studies illustrated this theme as follows:

- The Uganda Rural Development and Training (URDT) Programme, presented by Mwalimu Musheshe;

- The possible linkages between formal and non-formal learning situations, in which Daniel Babikwa presented the case of

Manze Primary School in Uganda's Mpigi district; and

- Methodologies of community learning and action among the nomadic Karamojong community, a highly traditional people who live in the north-east of Uganda, and whose resistance to modernity extends even to the use of pen and paper to record proceedings of a development project meeting. This was presented by Joseph Ikalur Obuino. *(Copies of full papers are available at IDRC on request)*

Practical Activities:

The *Sokoni*

Sokoni is a Kiswahili word for a market place which provides contact between buyers and sellers of goods and services. At the EE *Sokoni*, participants had a chance to search for, sell, bargain, share, and exchange ideas, experiences, innovations, information, and resource materials available for environmental learning.

Educational Game

A Namibian Environmental Card Game was introduced and conducted by Connie Botma. The game is used in community education on environmental issues, particularly in areas with high illiteracy levels. It enhances participation and involvement by getting the target group to discuss the issues raised by the game, for example, on deforestation and pollution . The participants played a very animated game.

Group Discussions

The themes that formed the plenary presentations constituted the basis for the discussion groups, viz:

- Group 1: Partnerships for Cooperation and

Collaboration in EE

* Group 2: Technology in Environmental Learning

* Group 3: Utilization of Indigenous Knowledge Systems in EE

* Group 4: Community Learning Processes and Practices

Guidelines for the group discussions were given whereby the members had to address the following:

* the prevailing situation;

* the desired goals;

* identify the main gaps, obstacles, and constraints;

* determine the actions to be undertaken to redress the constraints/gaps/obstacles;

* propose mechanisms and approaches to be employed; and

* agree on who takes the responsibility for catalytic action to spearhead the action plan at the regional and national levels.

Field Visits

Field visits were made to UNEP's Global Resources Information Data-Base (GRID) and a secondary school that has EE activities. At UNEP, participants were exposed to a number of demonstrations regarding environmental data acquisition and dissemination, while the school - Kiambu High School - provided them with an opportunity to share and learn from the students, their experiences in environmental learning.

The workshop participants planted a tree (the Thika Palm) to commemorate the visit, after which the students presented a dramatised poem on the social problem of land-grabbing.

Solly Mosidi donated a book, "Turning Words into Action" to the students, while some participants pledged to contribute magazines and other resources, in particular, the left-over *Sokoni* materials. Other participants expressed willingness to collaborate with, and follow-up on some of the needs expressed by the school.

Conclusions and Recommendations

The outcome of the workshop was a Joint Plan of Action to enhance environmental learning within the region, based on commonly agreed conclusions and goals. This session was co-chaired by representatives of the sponsoring agencies, Rikard Elfving and Kabiru Kinyanjui, from Sida and IDRC respectively, in recognition of the cooperation between the two organisations.

The participants co-opted a working group made up of the Workshop's Steering Committee to act as a link to coordinate the follow-up activities. IDRC would initially act as the focal point. The members of the Working Group Committee are:

Beatrice Adimola	*National Environment Management Authority (Uganda)*
Juliana Chileshe	*Zambian EE Program (Zambia)*
Rikard Elfving	*Sida (Sweden)*
Marie Gronvall	*Sida Consultant (Sweden)*
Margaret Karembu	*Workshop Coordinator (IDRC)*
Kabiru Kinyanjui	*IDRC (Kenya)*
Wagaki Mwangi	*EcoNews Africa (Kenya)*
Jim Taylor	*Wildlife and Environment Society of Southern Africa (South Africa)*

WORKSHOP PROCEEDINGS

Welcome Remarks

By Kabiru Kinyanjui - IDRC

It is my privilege and duty on behalf of the two agencies that have sponsored this workshop - IDRC and Sida - and the Steering Committee of the Regional Workshop on Environmental Education to extend to all participants a very warm welcome to the meeting. To the participants who have come from outside the country, we extend a special welcome to Kenya and Nairobi in particular. *Karibu* to all of you.

This morning, we are greatly honoured first by the presence of Mrs Elizabeth Masiga, the Permanent Secretary, Ministry of Education, Kenya, who has kindly agreed to officially open this workshop. Secondly, Professor Reuben Olembo, the Deputy Executive Director, UNEP, who will be giving the Keynote Address to the workshop later this morning. Finally, Mr Tom Anyonge, who will make introductory remarks on behalf of Anders Karlsson, the Counsellor, Embassy of Sweden.

The workshop is jointly sponsored by IDRC and Sida to explore ways and means to enhance cooperation, collaboration, and networking between and among various stakeholders, for effective implementation of EE in Eastern and Southern Africa. I am glad to note the presence of policy makers, researchers, NGOs, and partner agencies who are not only committed to EE, but are also working towards effective implementation of programs and activities to enhance sustainability of the environment in their countries, schools, and communities.

It is appropriate that this workshop is being held five years after the Earth Summit in Rio de Janeiro, when leaders from 178 nations and numerous international and civil society organisations pledged through various mechanisms to preserve, protect, and enrich the global environment. As we look back to Agenda 21 and subsequent conventions and agreements, let us also be ready to assess how effective the governments, NGOs, private sector, communities, and donor agencies have been in implementing the commitments and pledges which have been made in various fora in the last five years. Translating rhetoric into reality - we must accept - remains a challenge, which I hope will be addressed through the presentations, deliberations, and sharing of experiences throughout the week.

This workshop provides a window of opportunity for the participants to explore modalities and mechanisms for cooperation, collaboration, and networking in making past commitments a reality, and in particular strengthening the processes and capacities for acquisition of knowledge, skills, and attitudes for sustainable development at the community, national, and regional levels.

We have an opportunity to assess the effectiveness and adequacy of the processes of environmental learning in the region, and to evaluate how, and in what circumstances the acquired knowledge and skills are being translated into concrete actions, programs, change of behaviour, and way of life of individuals and communities.

IDRC's mission is *Empowerment through Knowledge*, and views knowledge as a critical input into the process of building capacities of governments, communities, and individuals to respond to, and take up the challenges and opportunities of the rapidly changing world. Education, broadly defined, provides the people with opportunities and capacities to acquire knowledge and skills, and utilise them

to manage, adapt, and benefit from the socio-economic, technological, and environmental changes going on in Africa today. IDRC views knowledge as key to sustainable use and management of the environment. EE is therefore a critical process for the acquisition and transmission of this knowledge, skills, and values that are greatly needed in Africa to protect and enrich our environment. Research, in our view, provides appropriate and usable knowledge and skills needed for sustainable development.

I would also like to affirm IDRC's commitment to cooperation with Northern and Southern partners in making knowledge available for empowerment of communities and individuals. In this respect, we are committed to seeing that results of research are utilised in dealing with concrete environmental concerns of the countries, communities, and individuals in Eastern and Southern Africa.

Let me also point out that IDRC is interested in exploring how the new information and communication technologies can be adapted and utilised to enhance environmental learning in the region.

Opening Remarks

By Sida and IDRC Representatives

Sida emphasized the need for a synergistic cooperation between all the key players in the implementation and development of effective EE. Stressing on the role of partnerships in achieving task-related activities and the need for better coordination to avoid duplication, Sida recognised country "ownership" as an

essential approach towards making EE relevant in the respective working environments.

IDRC explained the nature of the joint IDRC/Sida sponsorship, which was intended to initiate a practical process of enhancing cooperation, collaboration, and networking, as well as translate rhetoric into reality.

> *This workshop provides a window of opportunity for the participants to explore modalities and mechanisms for cooperation, collaboration and networking in making the commitments made in the past a reality, and in particular strengthening processes and capacities for acquisition of knowledge, skills and attitudes for sustainable development at the community, national and regional levels. We have an opportunity to assess the effectiveness and adequacy of the processes of environmental learning in the region, and to evaluate how and in what circumstances the acquired knowledge and skills are being translated into concrete actions, programs, change of behaviour and way of life of individuals and communities... Kabiru Kinyanjui, 1997.*

It was noted that five years after the Earth Summit, during which leaders from 178 nations and numerous international and other civil society organizations pledged to protect the global environment, little progress had been made. It was further explained that the role of the workshop was to assess the success realised in these pledges to protect and enrich the global environment, and to evaluate the effectiveness and adequacy of the processes of environmental learning in the region. In addition, the participants would determine how mutual exchange of information, resources, and competencies could be established to enable harmonization of the means of making EE more practical, innovative, and responsive to achieving sustainable development.

Official Opening

By Permanent Secretary, Ministry of Education-Kenya

Elizabeth Masiga, Kenya's Permanent Secretary in the Ministry of Education officially opened the regional workshop. She acknowledged the cross-curricular nature of EE and said that the workshop was particularly significant to Kenya, as the country was in the process of reviewing the entire school curriculum. One of the aims of the exercise is to ensure that all academic subjects integrate environmental concerns. The government would continue to expand the infusion of environmental topics in more subject areas with successive review of the curriculum.

Masiga commended the initiative taken to resolve the drawbacks afflicting effective implementation of EE in the region. Some of these deficiencies are:

- limited cooperation and networking among various stakeholders;

- limited coordination of EE activities;

- weak implementation strategies and follow-up mechanisms that are manifested in unclear policies on EE;

- lack of integration of indigenous knowledge and scientific knowledge systems in formal and non-formal EE;

- too much emphasis on a sectoral approach to EE;

- limited capacity - human and institutional - and tools to facilitate the acquisition of essential knowledge, skills, attitudes, and values, and their application in dealing with environmental concerns; and

- lack of information on existing and emerging resources, innovations, approaches, and expertise for EE.

She challenged the participants to design practical, innovative and workable approaches to fill these gaps. She deplored the lack of concurrence among educational leaders and those who service the needs of the educational community - in particular, curriculum planners and commercial developers of curriculum materials - about the need to address poverty and sustainability. However, there are markets for substantive EE programs and materials on EE.

> *We in education know very well the potential of Environmental Education in enhancement of essential knowledge, skills, values and practices that are necessary in dealing with environmental issues. We hope that the outcome of your deliberations will be of paramount importance to us in the education sector, and will also go a long way in helping to enhance some of the projects and programs that we have in our school system such as the Project on Environmental Education in Primary Schools, in Eastern Africa (PEEPSEA) (Kenya, Uganda and Tanzania) and the GLOBE program... Elizabeth Masiga 1997*

She assured the participants of the Kenya Government's support and willingness to collaborate in EE efforts that prepare citizens for environmental stewardship.

Keynote Address

By Deputy Executive Director, UNEP

In his keynote address, the Deputy Executive Director of UNEP, Professor Reuben Olembo enumerated the problems faced by the region, despite the natural advantages it enjoyed, including large reserves of untapped natural and human resources, and a rich cultural base. Some of the problems that plague the continent include abject poverty and the attendant high prevalence of malnutrition and environment-

related diseases, erosion, degradation, pollution, inequitable patterns of economic growth, and unsustainable consumption patterns. He regretted that Africa rarely influences international policies despite its population size vis-a-vis the population of the rest of the world. He stressed the emergence of an integrated world view that recognizes the inter-connectedness of nations and regions.

Explaining that the interdependence theory was no longer viewed as being merely economical but also ecological, Professor Olembo reminded the participants that if Africa was troubled, the whole world stood to suffer. He reiterated the view that partnerships are intrinsic to the success of any initiative to educate people on the steps needed to sustain the global environment.

Global environmental issues are increasingly being recognized as being primarily grounded in day-to-day activities, hence the endorsement of the international environmental slogan: *Think Globally, Act Locally.*

EE must disregard the traditional frontiers that separate specialized disciplines, and adopt inter-disciplinary and problem-solving approaches from a philosophical basis of holism, sustainability, enhancement, and stewardship. The environment is an issue that cuts across societal and organisational boundaries. The challenge is to seek long term solutions that go beyond basic survival, to sustainability.

EE has often been by educators for educators. It has failed to reach out to children in the classroom, to the general public in the street and the decision makers of a country and actually change their attitudes and empower them to take action.... individual action, without waiting for others to do so.. Reuben Olembo 1997

Fundamental changes are required in existing

institutional arrangements at the local and national levels to promote the integration of environmental sustainability, which is now being commonly referred to as environmental adjustment. Environmental adjustment is an effective mechanism to implement environmental reforms with EE at its core. This is effectively illustrated in Agenda 21, which recognizes education as critical for promoting sustainable development and improving the capacity of people to address environment and development issues. It also stresses the need to review the formal and non formal EE curricula to ensure a multi-disciplinary approach, with environment and development issues and their socio-cultural and demographic aspects and linkages.

In order to succeed and become attractive, EE must come out of the ivory tower of universities to the grassroots and adopt a new approach. UNEP's work in EE is intensifying through the Global Environmental Citizenship Programme. The program resulted from a recognition of the interdependence of the human race, and the need for participation on the basis of common goals and values in taking decisions and actions on natural resource utilization.

Global Environmental Citizenship is UNEP's strategy for the integration of existing public education and information activities around a common theme..., a common goal of environmental citizenship. It means revising education policies to focus on improved general environmental literacy. It means redesigning our approach to communications, the production of educational material and tools. And perhaps most significantly, it means establishing strategic alliances with organizations of international influence that could operate as delivery mechanisms for global environmental citizenship.... Reuben Olembo 1997

Participants raised a number of issues relating to the evolving Global Environmental Citizenship Programme and the role of UNEP

in facilitating action. A point of concern was that globalization and the "expanding empire" image of macro-economic development threatened sustainable development and hence efforts to conserve resources at micro (village) level.

Another point of concern in regard to practical action was the need to change the attitudes of donor organisations, who often seem to concentrate on funding large projects such as meetings, whereas localized development work involving "small action", such as the production of materials, are often sidelined and not considered worthy of financial assistance.

Workshop Expectations

In general, participants anticipated the deliberations to come up with realistic and practical activities to strengthen EE in the region. A desired expectation was the development of an effective network to enhance the sharing of experiences, materials, and evolving paradigms in EE. The need for a concrete strategy and networking mechanism for coordinated action beyond the workshop was emphasised. Participants were also interested in:

- sharing experiences and learning more about effective implementation and integration of EE in existing environmental programs.

- discovering the initiatives of other groups within the region in handling EE;

- learning more about existing EE resource materials;

- establishing firm and operational EE networks;

- exploring how to strengthen existing EE networks; and

- building more partners for EE in the region.

Those in the formal sector also indicated an interest in how to:

- integrate indigenous knowledge in EE for schools;

- implement action-oriented EE in order to come up with tangible results; and

- evaluate the role of environmental clubs and methodologies for strengthening school-community links in environmental learning, among others.

With regard to the new information technologies, interest was shown in how communities and educational establishments could benefit from modern technologies in the collection, sharing, and communication of EE ideas freely.

Workshop Approach to EE:
From Education to Learning

The workshop approach was designed to enable the participants to reflect on the contemporary concerns in the area of EE, which stem from a background of limited coordination, weak implementation and follow-up mechanisms, limited human and institutional capacity, and insufficient use of technical and other resources, as well as duplication due to lack of information sharing.

Learning is more than formal education, and involves a process of acquiring knowledge, skills, and values in the context of socio-economic activities, and on the whole, incorporating them into lifestyles. Learning goes on in families, social groups, women's groups, peer groups, and through the experiential process, where learning takes the form of "doing", for example, when planting trees and caring for them. (*See Figure*).

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THE CONCEPT OF LEARNING
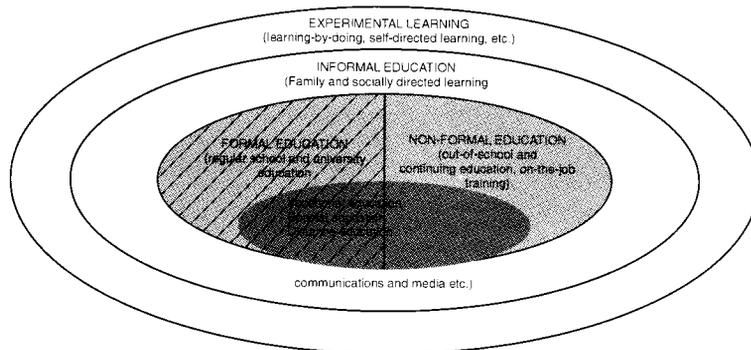
Source: UNESCO - World Education Report 1991, p 18.

The environmental learning concept emphasises:

- the acquisition and transmission of knowledge, skills, values, and attitudes for sustainable environmental management and living;

- the processes, methods, and approaches for the effective acquisition and transmission of knowledge, skills, and values to individuals and communities; and

- the application and utilization of what is learnt in dealing with environmental concerns by individuals, communities, and the society.

PRESENTATIONS

Donor Support to Environmental Education in Eastern and Southern Africa

By Marie Gronvall, Sida

The presentation described the changing nature of the donor agenda, which over the last few years has shifted its thrust from that of aid to that of partnership, in keeping with the current perception of the interdependence of rich and poor nations, particularly in the context of the

world's environmental problems. Sida perceives poverty as the overriding factor in the multiplicity of the developmental problems that the world faces. Thus, its eradication is the key to solving these problems, which include inequity in distribution of resources, pollution, overpopulation, conflict, and security. The main goal, therefore, is to encourage democracy and sustainable development through education. The overall objective of Sida's support for EE is to promote public awareness and knowledge of environmental issues, not only in schools but also in general society. The Agency does this by supporting programs aimed at integrating EE into basic education programs in the formal and non-formal settings.

Sida's environmental education programs are directed towards children in the formal and non-formal education system in order to achieve desired changes in attitudes and behaviour at an early age. Other target groups are adults in adult education programs as well as the general public targeted through media and cultural projects. Sida's programs are also, in certain cases directed towards ministries, education planners, teachers and journalists in order to enhance general environmental literacy.... (Sida Environmental Education Policy, n.d)

Sida commissioned the International Centre for Conservation Education (ICCE) to undertake

a desk study on donor support to EE in Eastern and Southern Africa. The study polled all major donors in the region: UN, GEF, the World Bank, European Union, Government Aid Agencies, international NGOs, and commercial sponsors, with a view to gathering information on funding agencies' policies and strategies for EE support. The study, however, yielded a low response and is therefore not considered comprehensive. The report indicated that some countries, for example, Kenya, Botswana, and Zimbabwe receive far more support for EE than others such as Angola. Very few have a working definition or policy for EE. Some of the Agenda 21 issues were given high priority, for example, sustainable livelihoods, wildlife/biodiversity conservation, social development, equity, and empowerment.

It was clear from the report that opportunities for information sharing are not used and that it is difficult to access available funds. These are the key areas that need to be addressed in formulating an action plan for improved collaboration, coordination, and networking between and among international and local partners. The focus should be on having common goals and definitions, and transparency and trust, in order to receive tangible benefits. The paper further recommended the development of a specific Web-site on which information from cooperating donors in EE could be posted and shared.

Key Issues Raised

The participants raised issue with the utility of the ICCE report and whether it represented what Sida expected. Some commentators said that the report misrepresented some information about the actual situation in some countries regarding the EE projects on the

ground. It was suggested that surveys of this nature should consult with the respective in-country offices to authenticate the data collected.

Participants reacted sharply to a recommendation that submission of proposals should be in line with donor priorities. Whose agenda should it be? It was strongly felt that a different way of approaching funding by matching donor resources with local initiatives would be more appropriate; that is, a shift towards demand-side assistance as opposed to the current emphasis on supply-side funding.

Case Studies:

The Southern Africa Development Community's Regional Environmental Education Centre (SADC-REEC)

The presentation described the evolution of the program, which focuses on building of infrastructure and consolidation of regional networking, training activities, and resource material development, with emphasis on indigenous knowledge resources. The program was developed through a series of workshops involving EE practitioners and experts in the region. The program document, which was produced through this process, was then evaluated by Sida and was found appropriate to the urgent need for support in EE within the SADC region. Sida's appraisal of the three-year program suggested that activities should be focused on a number of core initiatives in order to allow the proposed REEC to build infrastructure and consolidate regional networking, training activities, and resource materials development.

The overall responsibility of the SADC EE program falls under SADC- Environment and Land Management Sector (ELMS). The

Wildlife and Environment Society of South Africa (WESSA) - through its Umgeni Valley Project in Howick, South Africa - will implement the project on behalf of SADC-ELMS. The REEC at Umgeni Valley will therefore coordinate and be responsible for executing activities under this program. The centre is expected to have a catalytic function, but it is envisaged that a major part of the work will be done in the other SADC member states by EE actors.

In response to queries from participants on the selection process for training and course content, it was reported that training programs are developed through feedback. This means that there is a very broad curriculum with flexible courses. No advertising has yet been done, pending the release of funds. The establishment of the network, however, will popularise the program. A two-month program review and steering committee currently produces the short lists, and a newsletter, published four times a year, is written by the course participants. One commentator felt that a third language - preferably Kiswahili - in addition to English and Portuguese should be introduced to cater for Tanzania as a member of SADC.

The Inter-Governmental Authority on Development (IGAD)

The case study outlined the role and activities of the membership agency in environmental learning projects. The agency has strong links with the Organisation of African Unity (OAU). Its objectives include the coordination and fostering of member states' efforts to achieve sustainable economic development in the areas of environmental protection, infrastructure development, conflict prevention, and agriculture.

IGAD supports the promotion of EE in teacher training colleges and schools. A project profile on sustainable environmental management has been prepared. The terms of reference for the EE policy reform cover the following:
* strengthening EE in the formal education system;
* strengthening institutional capacity;
* networking; and
* introduction of extra-curricular programs related to the sustainable management of natural resources.

These are currently under evaluation by the member states of Djibouti, Ethiopia, Eritrea, Kenya, Somalia, Sudan, and Uganda.

One concern expressed by the participants was whether the numerous stated objectives of IGAD could feasibly be accomplished on the ground. It was felt that IGAD had been more concerned with politics than environmental issues and that no mechanism existed to reach out to the grassroots communities.

Acknowledging the strong potential provided by the regional initiatives represented by SADC-REEC and IGAD, participants agreed on the need to strengthen existing structures and attempt to localize their activities instead of creating new ones.

OUTPUT FROM GROUP WORK ON PARTNERSHIPS FOR COOPERATION AND COORDINATION IN ENVIRONMENTAL EDUCATION

The members of the group were :
  Bernard Bakobi
  Steve Murray
  Marie Gronvall
  Berhe Debalkew

Belinda Rego
Sultan Somjee
Klein Dieter

The group discussed the meaning of partnerships, cooperation, and coordination, and then examined partnerships between and among donors, governments, NGOs, and CBOs at three levels: regional, national, and local.

Identified constraints to building partnerships in EE are:

- information flow and continuity between and among partners is poor;

- government/NGO relationships in the region are often strained and lack common strategies and goals;

- NGOs compete for scarce resources, which hinder an open sharing of ideas and collaboration; and

- limited capacity of communities to provide information about their needs and priorities.

The IGAD representative emphasised the limitations of the organisation in initiating projects. The organisation's role is to coordinate the activities of member states and is biased towards technical input. It is restricted from communicating directly with NGOs but works by creating an enabling environment and by providing access to national policies and strategies.

In view of the observed limited cooperation and coordination among stakeholders, the following activities were identified as of priority:

- establish e-mail connectivity between partners;

- develop a regional database through which to collect and transmit data and information on training opportunities, resource materials available, and EE practitioners and their activities;

- strengthen existing networks by increasing EE forums that are focused on specific components of EE; and

- promote partnerships through the provision of awards to collaborating agencies.

Additional suggestions from the plenary sessions were:

- Since most projects are bilateral and many donors were not represented at the workshop, it is necessary to contact the organisations mentioned and get their views on the nature of their potential involvement in the project. It would also be appropriate to document those environmental NGOs which are already active, to enhance networking.

- The outputs of the workshop should be widely distributed, preferably through personal contact, in order to stimulate response.

- EcoNews Africa was requested to embark on finding out the communication needs in the Eastern Africa region.

Technology in Environmental Learning

By Ida Opoku-Mensah, PANOS Institute

The paper noted that sharing information about the region's environmental problems fosters a common understanding of common issues which can hasten the identification of sustainable solutions. This can become reality through the use of the growing range of information technologies available today. The key issue is to identify and adapt those

technologies that are both relevant and affordable, taking into account formal and informal learning situations and language use, while blending traditional and modern modes of communication. Further, the continent's ability to utilize technology needs political will among other things, since Africa has remained behind in adopting new information technologies.

> *People in Africa are often less informed than their European or American counterparts about what is happening in neighbouring African countries. This means they think about their problems in isolation. We do not compare ourselves with other people who have the same problem or know what solutions other people have tried. Those outside Africa on the other hand, are able to think about the problems of the region because they have better access to information and often end up taking decisions about what should happen in the region... Opoku-Mensah 1997*

The shift in the communication paradigm that has occurred in Africa over the past decade, removes government's monopoly as the sole provider and/or source of information. Today, information technology is interactive and participatory. This provides greater scope for effective EE.

In the region, traditional modes of communication as expressed in folklore, drama, song, and dance are the most realistic and effective if combined with modern technology. On suitability, radio is still the most suitable medium of communication for various reasons: it has the capacity to enhance participation and interaction; it is relatively cheap; and it is aural in nature, in a region where illiteracy is now on the rise. The two key issues are: the formulation of coherent information technology policies that promote decentralisation; and the linkage of all communication and information projects that have environmental learning initiatives. An

inventory of all communications and information projects taking place in the region, with a view to devising appropriate strategies and mechanisms for strengthening use of Information and Communication Technologies (ICTs) for EE is a priority.

Case Studies:

Interactive Video

A case study on the Mtwara Media Centre (MMC) demonstrated how the environmental learning process has been turned upside down through the use of interactive video. A sample video presentation of the type produced by the MMC on the impact of dynamite fishing on local sustainability was viewed.

The Marine Environment Protection project was conceived in 1994 as one of about 40 small pilot projects that emerged from a participatory planning phase of the Rural Integrated Project Support (RIPS), when a crew of fishermen ran into a planning team on the beach. The RIPS is a bilateral development program funded by Finland, operating in the two regions of Lindi and Mtwara in South East Tanzania. One of the fishermen concluded a sequence of exercises that mapped the fishing by saying that there was really nothing they expected the government to do for them, except one thing: *take action against dynamite fishing.*

The perspective was new to the planners. First, the extent of the damage done by dynamiting as described by the fishermen was much worse than it was thought. Secondly, government officers and "experts" commonly believed that local people were rather ignorant about the environmental consequences, and that they tolerated or even liked dynamite fishing. Were the fishermen and women themselves prepared to do something about it? It was decided that RIPS should organize a workshop where

fisherfolk from the entire coast should meet and jointly develop a strategy to address the problem.

A week-long meeting was held in Sudi village in January 1994, where over 40 fishermen from 12 villages gathered on the beach. The meeting became an experiment on how to use video for documenting PRA-style of work. Instead of recording events from the background, the camcorder was placed on a tripod in the middle with a microphone on a long extension cable. Participants presented issues to the camcorder.

The tapes recorded during the day were later played back several times using a TV monitor and a generator. Every village member was free to watch. The process to review and perfect the presentation produced a community-led initiative to protect the local marine environment and promote local rights to fishing.

This case demonstrates the potential role of participatory video for communication in development interfaces. Certain qualities of new communication media allow "educators" and rural people to meet in processes of participatory learning that have a vastly extended reach and scope compared to conventional forms for interaction that are limited by the technology of writing. This case illustrates a reversal:

Instead of using media for the transfer of knowledge from one sphere to another, media is applied in the production of knowledge. Interactive video can be used to establish processes of social learning that transcend the divide between indigenous and formal knowledge. In this case, video was used to place policy making in the oral domain where rural people made sense of the world through story-telling and visualization.....Lars Johansson 1997

It is no longer a case of a "development delivery" mechanism driven by demand from people and supply from government and donors. In this particular case, there was no apparent 'need' for inputs.

Instead, a will to explain, to find out and communicate, came to the forefront in the plans for action that were articulated. The Sudi committee was formed to follow up the implementation of the Sudi Declaration. Together with their members of parliament, they have met with the Prime Minister and successfully urged him to take action against dynamite fishing through closing the outlet for dynamite fish in Dar-es-Salaam. Through information from the villagers, they organize police patrols. They also write letters to companies applying for trawling licenses and urge them to withdraw these plans since local fishermen find their practices destructive and unsustainable.

Four years after the Sudi workshop, the committee members still retain the emphasis on communicative action as they try to establish an association of people who depend on the sea, *the Shirikisho*.

Community Radio

The second case study was a community radio project, facilitated by EcoNews Africa, a sub-regional communication and information NGO. The presentation covered the importance of adapting appropriate and available technology in areas where there is a lack of adequate telecommunications infrastructure such as telephone services. The program is geared to the exploitation of simple radio technology for information and experience sharing between partners in Kenya, Uganda, and Tanzania. The initiative provides a forum for debate at the local level, using new information and communication technologies

to channel information to the national and international levels.

Information on local agriculture, women's reproductive health issues, and the protection of pastoralists' land is disseminated using formal and informal training. Resource centres have been established, radio tapes have been recorded and in Kibwezi, Kenya, a community newsletter has been established. The project emphasises the community link in three areas : development; environment; and governance, and is carried out among three communities with a curriculum of radio practice put together by EcoNews Africa. The training was provided by Nyegezi Institute of Communication in Tanzania.

To create a conducive environment for the community media, some regulatory framework to enhance communication in remote areas is required. For example, advocacy is needed to ensure frequencies are specifically set aside for community broadcasting, and import duties on equipment should be reduced.

Electronic Mate (E–Mate)

The third case study discussed Technology, Modernism, Educational Resources, and the E-mate Computer. The presentation demonstrated the use of low-cost, compact, and user-friendly water quality monitoring technology in the promotion of participatory environmental management, and the use of the Apple e-Mate computer as a technological tool that is simple, relatively cheap, portable, and does not depend on electricity. This enables researchers to communicate their findings instantaneously through telephone lines using a phone card.

The development of water monitoring kits emerged as a result of life-threatening water

pollution, exacerbated by drought in the KwaZulu-Natal, South Africa. The Natal Parks Board collaborated with the USA-based Global Rivers Environmental Education Network (Green) to develop the kits, which continue to sell well in South Africa. The kits contain simple tests for visible life bacteria, turbidity, temperature, acidity, and alkalinity and come with a simple user's manual which also offers suggestions on what to do to improve water conditions in rivers and streams.

The kit has a compelling ACTION acronym as a framework for fieldwork activity represented thus:

A - Ask about local and indigenous knowledge,
C - Check catchment conservation, river quality and health risk
T - Test water life and water quality
I - Inform others to get support and encourage local action
O - Outline a catchment conservation plan
N - Network with other local and global 'GREEN' groups.

Source: Taylor, J. 1997, p 2

The E-mate on the other hand is a simple, portable computer designed for specific use as an educational computer. It has a built-in system, which means there are no movable parts that can break down, with up to 28 hours of battery time. It can be charged by a wind-up radio, thus needs no electricity. It is suitable for field work as it comes with a pen to sketch, write, and draw free-hand on the display. The protocol of the Internet is built in, allowing users to send e-mail messages and connect to the World Wide Web through either a conventional telephone or a cell-phone. It costs about US$ 900. This technology has the potential to promote learning by using e-mail where local telephone connections are unreliable.

While acknowledging the potential of these devices in promoting the acquisition and transfer of environmental information, the following caution is worth noting:

Water testing kits and computers may be used to support better education processes but the expectation that they can direct social change is doubtful. Rather, they are potentially useful as supportive technology or tools for learning that can be given away or shared. To assume that resources can operate as systematic procedures to direct outcomes is a technicist error. Technicism comes from a preoccupation with technique and technology, and also has a dominating linear and causal belief structure. That, unfortunately, is prevalent in environmental education. The expectation that a kit (or any educational material, computer or media, for that matter) can cause the desired change in the users, fails to accommodate the non-rational nature of social change (O'Donoghue 1997), or the importance of a social milieu in which the materials are applied, including the people, places and issues involved....Jim Taylor 1997

Issues Raised

The participants made various comments and observations. The cost of satellite telephone communication and the South African monopoly on decoders were of particular concern. It was underscored that communities need to have access to, and share information through an infrastructure that is affordable and accessible. A point of caution raised was on tendency of developing countries to idealize new technologies without adequately evaluating their suitability to their particular needs. Technology was described by a commentator as being a tool to achieve a bigger objective, but that before adopting it, one must be aware of the following issues:

- Of what use is it?

- What are the constraints related to its use?

- How will the existing policy on technology at the regional level influence EE?

It was suggested that technology needs to be demystified through involving communities, policy makers, and technologists in developing appropriate technologies that integrate traditional and modern knowledge. It was also observed that people have a tendency to romanticize indigenous knowledge and to assume that it is all good and should not therefore be improved.

Another observation was that a culture of perpetuating and institutionalising technology has not taken root within the region. Consequently, projects start and then die without leaving extension services or the technology to allow the community to carry on. One commentator wondered whether for example, the Mtwara interactive video project would survive, given the severe government administrative problems experienced in Tanzania.

It was concluded that the greatest challenge facing Africa is the blending of its richest and oldest technologies, especially the aural/oral traditions and indigenous environmental knowledge with the new information and communications technologies, in order to create a new integrated approach to environmental learning.

OUTPUT FROM GROUP WORK ON TECHNOLOGY IN ENVIRONMENTAL LEARNING

The members of the group were:
Aida Opoku-Mensah
Jim Taylor
Wagaki Mwangi
Lars Johansson

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Ulf Carlsson
Kabiru Kinyanjui
Margaret Karembu

The group identified the desired goal and the main constraints to the utilisation of technology in environmental learning. The following issues were raised:

- In light of the rapid technological developments, it is necessary to research trends in current and future telecommunications development.

- There is a lack of explicit expression at policy level on how communities can have access to technologies. Similarly, civil society is rarely involved in policy making.

- Within the school system, the most recent technological innovations - such as the ICTs - are not widely available. Where it is available, the content is not local and is therefore alienating, instead of reinforcing the local reality. This inhibits the sharing of indigenous knowledge.

- Local media such as theatre, drama, folklore, and poetry are not fully exploited, particularly within the existing communication modes, yet there is great potential for it.

- The resistance to new technologies should be overcome so that communities can share and better communicate information that is of interest to them.

The main obstacle to achieving technology utilization are the regulatory and policy environments, which do not support community participation, especially in the rural areas.

A number of issues regarding the group results were raised at the plenary. It was felt that the constraints had not been adequately articulated, particularly those pertaining to the infrastructure needed to reach remote communities, for example, road networks and rural electrification. The element of the appropriateness of new technologies was also not emphasised in relation to the social realities. For example, oral modes of communication are relegated by educators to a secondary position whereas they should be strengthened.

Additional comments on the group presentation were:

- Research to establish which communities in the region had access to electronic communications was biased towards urban centres. This was seen as an elitist approach.

- The development of communication technology is not taking place at the same rate in every country. Major hurdles still exist even within communication agencies. To overcome these, policy makers need to be made aware of what others are doing in the area of technology, for instance the MMC, and be convinced of the applicability of such initiatives.

- IDRC was requested to take a lead role in mobilizing a policy-makers' forum whose function would be the sensitisation of policy makers on the importance of ICTs. It was noted that resistance is often the result of non-understanding of the technology.

In appreciation of the impacts that new and emerging information and communications technologies have in enabling communities and educational institutions to share, communicate and access environmental information, knowledge, and experiences, the following activities were identified as of priority:

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- establish contacts with policy makers with the view of influencing the emergence of media and information policies that enhance freedom to communicate and share information freely;

- set up a web site to share and disseminate ongoing national and regional EE activities;

- promote the use of interactive technologies to enhance community learning through capacity building and networking;

- undertake participatory research with communities and local institutions, to identify existing technologies, policies, and practices needed to facilitate the utilization of new technologies for environmental learning; and

- establish relationships and organize fora between communities, educational institutions, and technology developers to enhance cooperation in the development of appropriate technologies.

Utilization of Indigenous Knowledge Systems (IKS)

By Joy Chidavaenzi

Ms Chidavaenzi narrated her personal experience from the Hwange Communal Lands program in Zimbabwe, of the kind of hostility and suspicion expected when development planners fail to incorporate the knowledge, skills, existing practices, and views of the intended beneficiaries of a development project. The experience brought home the reality of the limitations of the development delivery approach adopted by so many development agencies. The communities often see a hidden agenda in development workers - an agenda that lacks genuine interests of the communities.

The presentation exposed a fundamental aspect of EE that many of the participants identified with - the cynicism and suspicion surrounding the gathering and sudden interest in popularising indigenous knowledge. Gaining enough trust of traditional rural communities for them to accept "foreign" development workers is a major hurdle. Another constraint is the impact of modernisation and the resultant disregard for traditional lifestyles. A lot of the knowledge on African history, cultural heritage and customs has been "lost". At the same time, those with the knowledge are unwilling to openly share it with outsiders.

The integration of IKS into other bodies of knowledge, and particularly EE, has been minimal. Although extensive research on IKS has been conducted, dissemination and implementation have been hampered by the lack of systematic recording in the communities being studied.

Case Studies:

Material Culture

The first case study on IKS dealt with the topic of Material Culture: Lessons from Living Traditions of Eastern Africa. The study demonstrated the significance of indigenous arts in understanding the relationship between humans and the environment through the study of material culture (visual objects such as ornaments) of two nomadic pastoralist communities, the Maasai and the Rendille of Eastern Africa. It was an exposition of the use of non-literary approaches (visual and oral modes of communication) and their significance in the transmission of knowledge.

Material culture is the image in which knowledge is stored. For example, the red ochre beads that are predominantly used as ornamentation within these communities

represent social order. The black and white contrasts in ornamental objects mirror the splendour of the most beautiful of sights in the surrounding environment, for example, Ol Donyo Keri (Mt. Kenya), whose beauty is in the contrast of light and shadow, visible from a great distance.

The artifacts of wood and plant fibres are the eloquent objects for they evoke community wisdom and through references to oral traditions, the thought and intentions about preservation of the environment are defined. Could this example of the Maasai help to understand how visions and concepts of the environment can be made known to the environmental educationalist? It is not the bead or a particular item of material culture but the approach to understanding how beneath the non-modern and non-military cultures of Africa, the environment is honoured. If at all we are to develop an innovative pedagogy of indigenous knowledge, then we have to go back to the basics of how environmental knowledge is perceived and transmitted among communities in touch with nature, in emotional touch with plants..., the mountains and clouds.....Sultan Somjee 1997

Community-based arts are perceived as an affirmation of social values by inviting participation of the environment into its life and well being. How the environment is sensed through the arts in plurality of indigenous cultures, merits the creative and critical human capacity to feel, imagine, and dream. Material culture of a people is a manifestation and a reminder to the learned educationalist of the traditions that cannot be expressed otherwise. In terms of educational pedagogy, they enhance visual thinking and learning.

Grain Pits

The second case study demonstrated grain pits as an indigenous technology used in the storage of food. This study summed up the research findings on traditional South African methods of storing maize and sorghum after harvesting and threshing. Parallels were drawn between modern grain storage methods (silos) and the traditional grain pit, which was demonstrated to be scientific, safe, and sustainable. Three variations of grain pits were described, based on the different construction methods of the Zulu, Venda, and Tswana peoples of South Africa.

The pits, dug about six by eight feet deep with funnel-shaped mouths, were traditionally "finished" in various ways in order to compact the walls, which helped to keep water from seeping in from the surrounding soil, get rid of the smell of earth, and kill the weevils and red ants. The methods ranged from lining the walls with wild banana leaves, cow-dung, and clay from ant-heaps, to lighting a fire inside the pit, thus producing the pest-repellent carbon dioxide gas.

Making an elaborate comparison of the grain pit with the current silos for storing grain, a number of lessons could be learnt from this study.

The concept of grain pits does not suggest that people need to turn back to hunter-gathering. When one speaks of Indigenous Knowledge Systems, many people think that we should go back to hunter-gathering or to the oral fire-side by sticking to the indigenous facts in socio-ecological context of experienced validity. What we need is to tap this wisdom from the few remaining think tanks of the past and integrate it where possible with scientific knowledge in order to develop skills and establish positive attitudes that would lead to sustainable use of natural resources. This will in the end empower us both to question sweeping generalisations and to seek a common sense of wisdom in many traditional ways of doing things.... for in all the sustaining common senses located in the struggles of everyday life, they have the character of indigenous knowledge... Solly Mosidi 1997

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Alternative Energy

The third case study was an exposition on *Komba* Charcoal, an alternative energy source. The presentation described how a young rural Tanzanian teacher, Yohana Komba, consulted with elderly people who are custodians of the long-neglected knowledge, and came up with a formula for an alternative fuel that can be used for ordinary cooking. The fuel is also easier to produce than ordinary charcoal, burns longer, and is a sustainable alternative by virtue of the materials and methods used in its production.

This case illustrated the potential interplay between modern awareness and indigenous knowledge as well as the importance of incorporating local knowledge to devise new technology.

Issues Raised

While recognising the value of researching into indigenous knowledge systems, some concerns were voiced over the feasibility of documenting the information in a way that made it easily available for incorporation into modern life through the school system. Curriculum issues were raised in the context of access to indigenous knowledge, given the fact that extension workers and teachers are not in touch with the sources of information. Modern education tends to compartmentalize knowledge as if subjects are un-related. This inhibits the incorporation of IK into school syllabi. For example, a trained biologist or forester is taught about forests, not trees. Consequently, the learner gets to know little or nothing about the interdependence between the other life systems in the forest such as butterflies, lichens, lizards, etc.

When preparing curricula for IK, it is necessary for the teacher to be flexible in order to relate the subject matter to the local environment and cultural practices of the area in which the teacher is working. While acknowledging the growing interest in indigenous knowledge, IKS should be seen as a move towards a more participative and grassroots approach to natural resources management. IKS also brings in a historical perspective to education which can enrich our understanding of current issues. Besides, indigenous knowledge in education reminds us that knowledge and understanding is not something that only comes from expert scientists and text books.

OUTPUT FROM GROUP WORK ON UTILIZATION OF INDIGENOUS KNOWLEDGE SYSTEMS IN EE

The members of the group were:
  Solly Mosidi
  Charles Ikalur
  Beatrice Adimola
  Christopher Zulu
  Osaki Kalavunja
  Mary Karanja
  Gufla Fitiwe
  Gituro Wainaina
  Charles Oyugi

Preliminary group discussion raised a number of issues:

• while it is difficult to access indigenous knowledge, there is also the fear that much of it has died with the people to whom it had been passed down;

• modernity, in the form of schools, foreign influence, and the attitudes of government officials have relegated IK to museums, thus making it an academic subject of inferior status;

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- there is neither money nor the policy to guide IK research, and therefore documentation is scanty; and

- IK is not homogeneous, which creates problems of translation. In addition, the lack of people who are properly trained to accurately, consistently, and systematically collect and document IK means that it receives little recognition as a legitimate and useful source of knowledge for environmental learning.

A number of issues concerning the group results were raised at the plenary:

While agreeing that it was undesirable to lose the best of the past, it was noted that in order to use IK, it is necessary to live an indigenous life, which is difficult because of the intrusion of modernity. Urbanisation, for instance, has killed the "schools" for the transmission of knowledge such as the traditional events which marked rites of passage. It is therefore necessary for researchers to take up the challenge to recreate avenues and opportunities for the transmission of indigenous knowledge.

Additional observations noted were:

- It is a matter of pride to be African and a chance exists to turn the situation around.

- Through technology, for instance, schools in Africa could link up with schools in Europe, with the aim of comparing traditional practices with modern scientific ones.

- There is a real chance to demonstrate the use of IK practically, given the international recognition it is attracting, specifically with reference to the Convention to Combat Desertification. Through research, IK can influence government and international thinking.

- Improving connectivity between schools in Africa and schools in the North, presents an opportunity to make creative use of IK by sensitizing teachers and curriculum developers to take a greater interest in it.

- There is need to address the existing imbalance in the availability of technology where rural schools, which are more likely to be sources of IK, are not connected, whereas urban schools, which are connected, are unlikely to have any significant indigenous knowledge.

Acknowledging the dismal integration and application of IKS in environmental learning in spite of their acknowledged real impacts on sustainable environmental management, the following activities were prioritized:

- document indigenous knowledge consistently and systematically through research;

- influence policy decisions regarding incorporation of indigenous knowledge in the curriculum and resource materials for formal and non-formal EE programs;

- promote the utilization and recognition of IKS in environmental learning; and

- support, document, and share private initiatives to use IK.

Community Learning Processes and Practices

By Brian Rashid

The paper explored the dynamics of progress, based on the premise that every community is unique and has an important role to play in conservation. The nucleus of progress should therefore be the community, followed by community institutions, and traditional

authorities. Government departments and NGOs should come in as partners, working with the communities within the provisions of the existing government policy framework and legislation.

In many African countries, the history of colonialism had introduced a model of "development", where common wisdom and experience were subordinated to scientific and western knowledge, leading to a loss of traditional authority. Natural resource management has fallen victim to this, because it is based on the so- called modern systems of development, which have been overwhelmed by various factors. These include the lack of recognition and understanding of indigenous knowledge, technology, and practices which communities have developed over millennia, for their adaptation to, and manipulation of their environment.

To redress this, governments and other development agencies need to better understand the value of community participation and move towards delegating power, joint planning, and consultation. The development of linkages to conduct needs assessments and evaluation are necessary mechanisms for positive change and fostering people participation.

Case Studies:

The Uganda Rural Development and Training (URDT) Programme

The presentation emphasised the community's involvement in shaping its own destiny through providing avenues that enhance reflection, innovation, and experimentation. This can be done using the following approaches: consciousness raising through identification of unifying values; training and skills development through adult functional literacy;

and information exchange through recording of experiences and making the information accessible to others.

The URDT Programme, situated in Kibaale district in mid-west Uganda, is concerned with issues of the "bottom-up" development process. Emphasis is laid on enabling people to be the key players in the attainment of their own prosperity and health. The project also takes a holistic approach to development by recognising the interconnectedness of all the socio-economic sectors of human existence. For example, agriculture, technology, gender equity, health, and business management all impact on the physical environment. One lesson that has been learnt out of the URDT project is that in order for environmental learning to be successful, it is important to start with where the people are, especially at the level of values and spirituality. Similarly, environmental awareness campaigns and training cannot achieve much without integration with other areas of development. EE is not one single fix. Environmental learning should thus be tackled in an integrated manner.

Linkages between Formal and Non-formal Learning Situations

The second case study presented the case of Manze Primary School in Uganda's Mpigi district. In contrast to the prevailing situation over most of the region, the school is the centre of all community activities. Historically, however, the school in Africa is rarely integrated into the surrounding communities, and is often viewed as an environment which is "superior" to the backwardness" surrounding it.

In this case, the war in Uganda created a unifying force for community integration. After the war, it became a priority for returnees to

re-build the school which had been completely destroyed. This work was done by the community members, including the children for whom it was intended, using local building materials. The sense of "ownership" fostered the feeling that all community development projects to revive the village infrastructure should revolve around the school. The projects identified included training in sustainable agriculture, income generation, child care, and home improvement. The case highlights some important lessons. If school-community interaction is to exist successfully, the following points are worth noting:

> • *The community and school must be convinced of the necessity for the interaction, for example, what is lost or gained from it;*
> • *The community must develop the sense of ownership of the school and its activities, while the school and its leadership should also have the sense of belonging and the moral obligation to the community;*
> • *Realisation of immediate and long term benefits arising from the interaction;*
> • *Common understanding of the situation confronting both the school and the community and a vision of the future - the plight, the weaknesses, the potentials and strategies; and*
> • *Strong local community and school leadership, to take decisions and guide the community and school activities....Daniel Babikwa 1997*

Methodologies of Community Learning and Action

The third case study was carried out among the nomadic Karamojong community. The Karamojong are a highly traditional people who live in North-East Uganda, and whose resistance to modernity extends even to the use of pen and paper to record proceedings of a development project meeting. The presentation emphasised the need to appreciate that, just as

communities have their own systems, principles, skills, attitudes, and history, so do educators bring with them biases, prejudices, and assumptions. The Karamoja Development Programme's attempts to penetrate the community and gain acceptance was a painstaking process.

> *All of us who participated in the training of trainers project had specific disciplines of training in the colleges. We were trained to teach others what we knew and we assumed that the Karamojong were totally ignorant in matters regarding animal health, human security, agriculture, afforestation, etc. During the training we all underwent a process of re-education. We learnt that true knowledge for community development is mutual. The Karamojong have their tested knowledge and we had a lot of book knowledge. We had to engage in an educational journey of give and take..., Ikalur Obuino 1997*

Community educators need to re-educate themselves in order to minimise the crises that can occur at the point of interaction with the community. The approach used involved a highly participatory mutual learning process known as DELTA (Development Leadership Teams in Action). The process entails listening surveys to establish and prioritise community needs in the areas of agriculture, water, health, education, afforestation, livestock, road communication, and social services. This is followed by the establishment of a training methodology, a testing and evaluation phase where the social, economic, and political values of the community are studied in light of the identified priorities.

Issues Raised

The issues arising from the presentations concerned the difficulty of translating information from the research carried out within a certain community, and the accuracy of the feedback, in light of the potential

language and interpretation constraints. This may be resolved by engaging a *hands-on* approach, where the communities write the feedback themselves. It was noted that refugee communities may require an approach that differs from other communities. In view of the fact that refugees see their environment as a new and temporary stop-over, the impact on the socio-economic activities of the surrounding environment can be disastrous.

An important issue in community learning is how to break barriers so that communities accept development workers. This may have been a cause for the failure of many projects. Timing and transparency are considered the most important pre-requisites for successful entry into a community and gaining of trust.

There was also some scepticism expressed in regard to governments' ability to changing their traditional approach to development to an extent that they can incorporate community perceptions into their planning processes. Governments are often perceived as enemies, thus development efforts do not proceed in a concerted manner.

The Karamoja experience, however, showed that through the use of pressure groups, the development issues were effectively exposed to the Ugandan government. The Government of Uganda takes the Karamojong very seriously, perhaps because it is a stigma for the country to be given the label "backward".

In Zimbabwe, the CAMPFIRE initiative lobbies members of parliament and achieves participation in this way. The consultative process starts with major state goals being communicated to communities and tribal authorities who are able to debate the issues. Thereafter, everyone involved in environment and developmental issues gets support as long as it is within the government policy.

OUTPUT FROM GROUP WORK ON COMMUNITY LEARNING PROCESSES AND PRACTICES

The members of the group were:

Daniel Babikwa

Aadiela Moerat

Joy Chidavaenzi

Juliana Chileshe

Elias Matimati

Brian Rashid

Mwalimu Musheshe

Connie Botma

Several factors influence community learning mechanisms in EE. They comprise: constitutional, historical, social, educational, and institutional factors. The obstacles to community learning processes and practices include: the lack of an integrated policy for the different sectors, which results in a lack of commitment and supportive legislation; environmental laws - where they exist - are not updated to encompass new knowledge due to low levels of awareness among policy makers; governments, development workers, and communities appear to have separate visions leading to a lack of coordination; and political interference, social unrest, and a lack of recognition of the value of IKS in community learning.

The group expressed the difficulties encountered in defining the term "community". The approach taken, therefore, was to take the term at three levels: the community of educators, the government or policy-making community and the recipients of services. They also observed that learning processes and practices are dynamic and that it may be necessary to explore ways of updating them to render them more relevant.

Reacting to the group's preliminary results, the workshop expressed concern that individual-based organisations may exploit people for knowledge. It was also felt that the group should consider the language issue as well as the potential of academic institutions, notably universities outside Africa, with emphasis on the role that local universities could play regarding copyright issues. The presentation received several more pledges for catalyst organisations in the areas of training, research, and documentation, which facilitated the identification of the activities to be pursued. It was observed that although community involvement in all aspects of development has widely been recommended, this is still far from the practice.

To enhance the contribution of grassroots communities in the formulation and implementation of environmental policies, and in the incorporation of community knowledge, skills, and practices in EE programs, the following activities should be pursued:

- carry out participatory research to identify community needs and priorities in learning, and communicate findings to policy makers and other stakeholders;

- train EE trainers in communities to promote national consciousness;

- strengthen the links between educational institutions and communities in environmental learning programs; and

- document and share best practices, which should be disseminated through regular consultative meetings between and among partners, policy makers, and communities.

The *Sokoni*

A practical section of the workshop presentations was the *Sokoni*. *Sokoni* is a Kiswahili word which means a market place. A market provides a place and method of contact between buyer and seller. The contact may be relatively simple or highly organised. The purpose of the EE *Sokoni* was to expose participants to a variety of resources and activities available to promote environmental learning. The session facilitated the searching for, sharing and selling of information, ideas, experiences, and opportunities for adapting/ adopting those resources and ideas in diverse situations of environmental learning within the region.

The ability to judge their applicability in diverse situations was enhanced by the personal touch. On display were culture material, videos, electronic equipment, posters, reports, newsletters, brochures, and other publications demonstrating the various and diverse EE activities that the participants were involved in. Clarifications and probes on a number of issues regarding the information shared was made possible. The *Sokoni* session would otherwise have been highly theoretical if participants were only required to present write-ups of the resources and approaches to EE used within their specific institutions.

Most of the *Sokoni* stands proved to be of great interest. This session enhanced the flow of information and informal interaction, and laid the groundwork for future networking. A series of decisions regarding innovations and resource use in EE were made, as were contacts and collaborative plans.

The *Sokoni* presented an excellent chance for the various EE stakeholders to learn and acquire intimate knowledge of the inherent qualities and suitability of emerging innovations in EE. It also acted as a feedback mechanism for existing EE activities on the ground.

FIELD VISITS

Field visits to the Global Resource Information Data-Base (GRID) of UNEP, and to Kiambu High School were made to maximise and assess the opportunities for environmental learning that such establishments would provide. The aim of the visit to GRID was to enable participants to observe how environmental data is collected and disseminated electronically. The school visit was intended to expose the participants to the type and variety of environmental activities that schools are involved in, and also to assess the extent of the school/community interactions in environmental learning.

At UNEP, the participants saw three demonstrations on: the Meta-Data directory; an African Elephant Data-Base; and a Rwanda Society Environmental Project.

In Kiambu High School, various activities of the wildlife and eco-clubs identified included tree-planting, a nature museum, a library of conservation materials, a bird feeding table, and a fish pond. The club members participated in several outdoor activities such as educational trips to various conservation sites. The eco-club also has practical activities that relate to the local environment. Tree-planting is a seasonal activity and is usually done during the long rains.

The students expressed an interest in securing funds to buy more tree seedlings and improve their fish pond. They also wished to acquire more reading materials on environment.

After a heavy day in the field, participants watched a video documentary capturing diverse environmental learning activities and innovations. It had been produced as part of the presentations.

CONCLUSIONS AND RECOMMENDATIONS

The immediate outcome of the workshop was a Joint Plan of Action to enhance environmental learning within the region, based on commonly agreed conclusions and goals. Several points of caution were emphasised in the development of the Action Plan as follows:

- the need to be practical;

- the need to identify the owners of the plan, who would catalyse and mobilise action;

- the pitfalls of the traditional development approach of expecting the governments or donors to take lead role;

- governments lack capacity and are in many cases indifferent, thus the onus was on the participants to take the leadership role and to look for the available capacity and start-up resources within their respective institutions. Supplementary resources could then be sought to bridge the gap.

PLAN OF ACTION FOR STRENGTHENING EE IN EASTERN AND SOUTHERN AFRICA

The Action Plan focuses on the issues identified from the four sub-themes discussed at the workshop. It is based on a three year projection: 1998 to 2001. The organisations listed as key actors expressed interest in undertaking the specific activities as outlined, some of which are already running in their institutions. They are expected to assume the responsibility for moving forward these activities either jointly or in collaboration with others who will be identified in due course. It does not necessarily imply that the key actors are directly responsible for implementation nor for funding.

1 Partnerships for Collaboration in Environmental Education Activities

GOAL	Activity	Key Actors
Promote networks through strengthening and linking organisations & practitioners	i) establish e-mail connectivity between partners; ii) identify existing EE networks; practitioners; needs; and develop shared/joint approaches & projects	IDRC, Sida, EcoNews Africa, IUCN, Action-ZM SADC-REEC, KU-CERE, ELF, NEMC-TZ, IGAD
Improve coordination between local, national, & international organisations involved in EE	i) develop regional EE data base on training opportunities, resource materials available, and ongoing EE activities; ii) facilitate exchange programs/trips /attachments, & joint activities; and expand share-net concept regionally	SADC-REEC, Action-ZM, NPB-South Africa, IUCN-EA, EcoNews Africa, NEMC-TZ, FTTP, Dept. For Rural Dev. Studies - Swedish Agric. University.
Improve collaboration and cooperation between EE stakeholders	i) provide access to regional & national EE action plans/strategies; ii) develop & facilitate access to EE resource centres - (audio and print); and iii) develop and distribute widely an EE calendar of events through national and regional newsletters.	SADC-REEC, IDRC, NEMC-TZ, Rossing Fdn., KU-CERE NPB-SA, ELF.

2 Technology in Environmental Learning

GOAL	Activity	Key Actors
Enable communities and educational establishments to communicate, share and access environmental information freely.	i) establish contacts with policy makers and media reform groups; ii) set up a web site to share and disseminate ongoing national & regional EE activities	EcoNews Africa, PANOS, COMNESA, IDRC, FTTP, Action-ZM, ACCE, IPS.
Facilitate the utilization of new and emerging technologies to enhance environmental learning.	i) promote use of interactive technologies through training of trainers; ii) carry out research to identify existing technologies; ICT policies, practices & trends	IDRC, Sida, EcoNews Africa, ZEEP, MoE-ZB, NEMC-TZ, Action-ZM, communities, schools, ITU, RIPS-TZ, Umgeni Valley, Project-SA, Mtwara-TZ.
Influence emergence of media and information policies that enhance freedom to communicate and share information freely.	i) carry out advocacy for communities and educational establishments access to free open channels and service calls; ii) establish relationships between communities, educational establishments and technology developers; iii) facilitate personal contact between community groups/ schools and EE institutions.	IDRC, MISA-NB, PANOS, EcoNewsAfrica, MMC, IPS, NITF-SA, communities, schools, KU-CERE.

3 Utilisation of Indigenous Knowledge Systems in Environmental Education

GOAL	Activity	Key Actors
Promote recognition and Use of indigenous knowledge in EE	i) influence the existing EE policies to include IKS; and ii) facilitate re-packaging of IK into attractive and modern form stories, comics, comedies, rap-ups, etc.	MoE-K, Zambia, Ethiopia, Action, Inspectorates, Dept. of Fisheries-Malawi, Dept. of Tourism-SA, SADC-REEC, EcoNews, NEMA, NEMC, mass media.
Integrate IK into all aspects of EE - training, materials development	review formal school curriculum to identify areas of IK integration	MoE -Kenya, KU-CERE, URDT PraSuPE-GTZ, NMK, IDRC.
Empower custodians of IK to benefit from their valuable resource	carry out research to identify private and public initiatives in the utilisation of IK for environmental learning	IDRC, KU-CERE, Africa-2000, IUCN, URDT.
Develop and adapt IK in the school education system.	publicise the advantages of IK in environmental learning	Mass media, MoE-K, Moe-Zb, Moe-Zm, Moe-Eth. PANOS, Action-ZM, EAEN.

4 Community Learning Processes and Practices

GOAL	Activity	Key Actors
Enhance community involvement in EE programs.	i) identify and share best practices in EE; ii) Lobby governments to ensure genuine community participation in EE policies and national plans; iii) undertake research to identify joint, practical EE activities by schools & communities.	IDRC, Makerere Uni. IUCN CEC, Action-ZM, SADC-REEC, NPB-SA, EcoNews Africa, EAEN, EWNHS.
Strengthen community/policy makers/educational institutions/ private sector links in EE projects.	i) review existing EE programs to identify areas of integrating community practices & concerns; and ii) develop EE training modules with community educators	IDRC, Africa-2000, ZEEP, Dept. of Fisheries-MW, ACHM, KU-CERE, SADC-REEC, EAEN, IUCN-CEC, NEMA.

Participants of the EE Workshop at the Windsor Country Club, Nairobi-Kenya, the workshop venue

Front row - Left to Right: Wagaki Mwangi; Bernard Bakobi; Beatrice Adimola; Margaret Karembu (workshop coordinator); Rikard Elfving;
Reuben Olembo; Kabiru Kinyanjui; Marie Gronvall; Wainaina Gituro; Joy Mutero (rapporteur); Juliana Chileshe; Jim Taylor

Middle row - Left to Right: Sultan Somjee; Mary Karanja; Florence Waiyaki (workshop secretary); Tom Anyonge; Elias Matimati; Daniel Babikwa;
Aida Opoku-Mensah; Belinda Rego; Joy Chidavaenzi; Dieter Klein; Charles Oyugi; Joseph Ikalur; Brian Rashid; David Aduda (reporter)

Back row - Left to Right: Venessa; Berhe Debalkew; Connie Botma; Gufla Fitiwe; Steve Murray; Lars Johansson; Solly Mosidi; Osaki Kalavunja;
Christopher Zulu; Mwalimu Musheshe; Ulf Carlsson

Kenya's Permanent Secretary in the Ministry of Education, Mrs Elizabeth Masiga who opened the workshop

Concentration time during the presentations
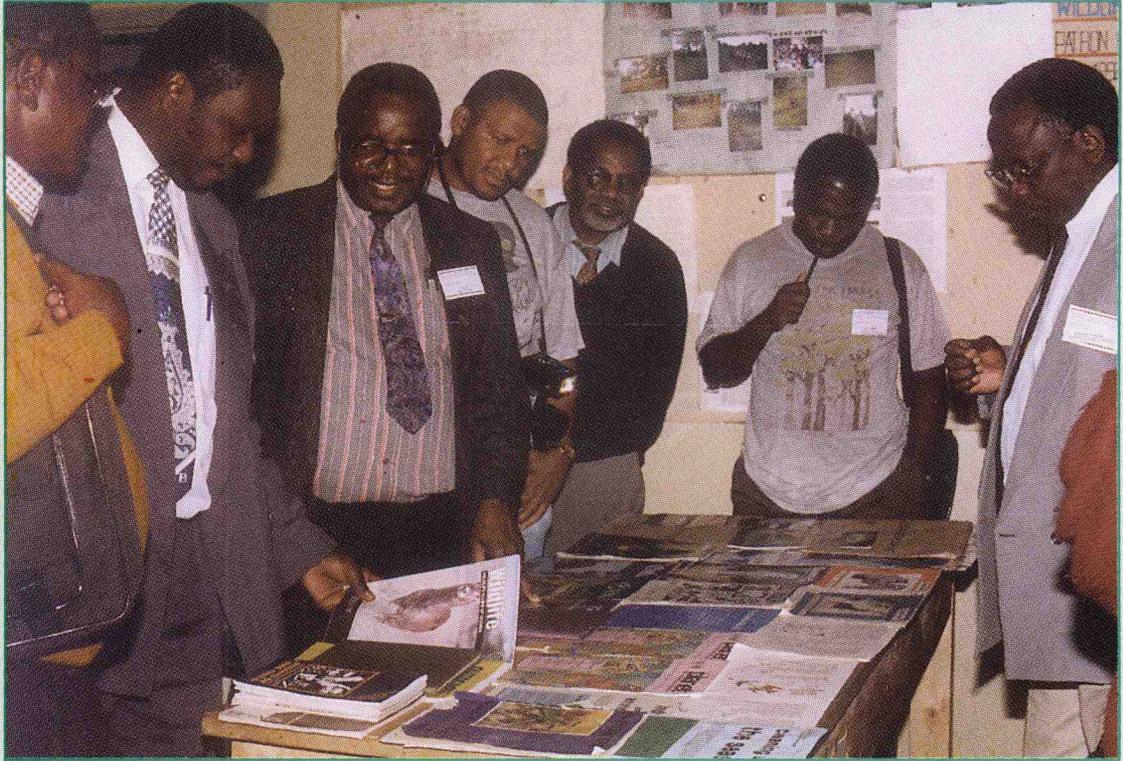
A resource room in the school with a collection of EE materials

A link was forged between participants and the students of Kiambu High School. At the centre is a memorial tree – the Thika Palm, which the participants planted at the school compound

Visit by participants to Kiambu High School, where the Principal Mr Njoroge explains the various EE activities the students are involved in

Some of the activities that the students are engaged in – A bird feeding table which attracts birds of all kinds, enriching the biodiversity of the area

FOLLOW-UP MECHANISMS AND STRATEGIES

The participants co-opted a working group made up of the workshop's Steering Committee to act as a link to coordinate the follow-up activities. IDRC would initially act as the focal point. The working group would play a catalytic role in the implementation of the Action Plan. The committee's mandate was to:

- promote the strategies and mechanisms to follow-up the activities;

- monitor progress in the implementation of the Action Plan, in particular keeping in regular communication with the institutions that have committed themselves, and mobilise new partners including the private sector;

- familiarise itself and work closely with regional bodies that have initiated EE activities, such as SADC, IGAD, EAEN, IUCN - CEC;

- explore relevant international EE activities and initiate networking with them, in particular, the UN regional EE programs such as the Arab States, Asia and the Pacific, Latin America and the Caribbean; Europe and North America; and the rest of Africa;

- provide up-dates to EcoNews Africa every three months on the progress made on the above; and

- carry out any other activities that would enhance implementation of the Action Plan.

Some institutions and individuals present undertook the responsibility of facilitating the implementation of some aspects of the Action Plan.

IDRC indicated that it would support some of the research activities identified through an existing research project, and would explore how the initiative on Information and Communications Technologies for African Society (ACACIA) could support the utilization of ICTs to enhance environmental learning in the communities. Further, IDRC and Sida indicated they would initiate a donors meeting to discuss issues of coordination and collaboration in the follow-up activities. Both agencies will also explore the possibilities of establishing e-mail connectivity between various partners, as well as set up a web site to facilitate sharing of information and experiences.

EcoNews Africa will be responsible for kick-starting the process, and animating communication among the partners.

Closing Session

The Director of the Soil Conservation Unit which is a project of Sida, presented the work of the Regional Land Management Unit (RELMA). He described RELMA as Sida's contribution to the work on soil management and environmental conservation from an education viewpoint. Several concerns necessitated the formation of the Unit, which aims at improving livelihoods and enhancing food security among small-scale land users in the region. The program takes a holistic approach towards soil fertility and food security.

The unit was interested in collaborating with the regional network represented at the workshop. Given that RELMA's strength was in curriculum development, it was possible to mutually share resources and information to come up with productive outcomes.

At the culmination of a long process and

intense deliberations during the course of the week, IDRC representative Kabiru Kinyanjui gave the closing address. He synthesized the deliberations of the workshop, and reiterated the commitments of the two sponsoring agencies, to ensure that connectivity is established via e-mail, and a web-site is developed to support EE networking. IDRC had set aside resources to ensure that the research component identified could be supported and carried out.

IDRC is also interested in the areas of community learning, and the utilisation of information and communications technologies by communities. In particular, it would support activities on how to train communities to use ICTs for self-empowerment via the ACACIA initiative. Dr Kinyanjui stressed IDRC and Sida's commitment to work with the participating organizations on building links that enhance environmental management for the benefit of communities in the region.

He described the workshop as an important event for learning and meeting with people, especially the *Sokoni* concept. After thanking the participants, resource people, institutions and support staff for their various roles in organizing the workshop, a vote of thanks was made on behalf of the participants by Wagaki Mwangi, who expressed appreciation to IDRC and Sida for bringing the participants together. She concluded that the one-on-one network is always the most valuable, and that the experience of coming together during the forum had helped to sharpen the thinking of the participants about environmental learning concerns in the region.

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APPENDICES

Appendix 1: List of Papers Presented at the Workshop:

Donor Support to Environmental Education in Eastern and Southern Africa

    by Marie Gronvall

Technology in Environmental Learning

    by Aida O. Mensah

Indigenous Knowledge Systems and Environmental Learning

    by Joy Chidavaenzi

Community Learning Processes and Practices

    by Brian Rashid

List of Case Studies Presented at the Workshop:

The Southern Africa Development Community's Regional Environmental Education Centre (SADC-REEC)

    by Jim Taylor

The Inter-Governmental Agency on Development (IGAD) Environmental Education Program

    by Berhe Debalkew

Interactive Video - The Mtwara Media Centre(MMC) Experience

    by Lars Johannson

Community Radio

    by Lynn Wanyeki

Technology, Modernism, Educational Resources and the E-mate Computer

    by Jim Taylor

Material Culture - Lessons from the Living Traditions of Eastern Africa

    by Sultan Somjee

Grain Pits - Traditional Grain Storing Methods in South Africa

    by Solly Mosidi

Alternative Energy Sources - The *Komba* Charcoal

    by Bernard Bakobi

Community Reflection and Involvement - The Case of Uganda Rural Development and Training Programme (URDT)

    by Mwalimu Musheshe

Interface Between Formal and Non-formal Learning Situations

    by Daniel Babikwa

Methodologies of Community Learning and Action - The Karamoja Development Programme

    by Joseph O. Ikalur

Appendix 2: Profile of Workshop Participants and now members of the Eastern and Southern Africa Network of Environmental Educators and Practitioners (ESANEEP)

JIM TAYLOR - SOUTH AFRICA

Jim is the director of EE at the SADC Regional EE Centre. He works for the Wildlife and Environment Society of South Africa. The main activities in his institution are: promotion of better processes of EE at a local, national and international level through networking, training (capacity building) and resource material development. His main area of interest is environment and development education, research and evaluation, resource materials development, and Indigenous Knowledge Systems. He is a member of the Working Group Committee of the EE project.

Contact Address:
Dr Jim Taylor
Wildlife and Environment Society of South Africa
SADC Regional EE Centre
P O Box 394 Howick 3290 Kwa Zulu/Natal
SOUTH AFRICA
Tel: 27 332 303931,
Res: 27 332 307203
Fax: 27 332 304576
E-mail:jt@ alpha.futurenet.co.za

BEATRICE ADIMOLA - UGANDA

Beatrice is an EE specialist with a government agency NEMA, which is involved in coordinating, monitoring and supervising the implementation of the National Environment Action Plan; developing strategies, guidelines and standards on environment; as well as, translating EE policy to the grassroots. Her main area of interest is in EE curriculum development, materials development, training, and Indigenous Knowledge Systems. She is a member of the Working Group Committee of the EE project.

Contact Address:
Ms. Beatrice Adimola
National Envi. Management Authority
P O Box 22255
Kampala, UGANDA
Tel: 256 41 236817/251064 /236818 Ext. 221
Fax: 256 41 232680/257521
E-mail:neic@starcom.co.ug / nema@imul.com

RIKARD ELFVING, Sida representative - SWEDEN

Rikard is a program officer with the Swedish International Development Corporation Agency, Sida, which supports projects and programmes on environment and development issues. His responsibilities include: Hiv/Aids education, EE, and Education Sector in Namibia and Sri Lanka. He is a member of the Working Group Committee of the EE project.

Contact Address:
Mr Rikard Elfving
Swedish International Development Corporation Agency (Sida)
Sveavagen 105 25
Stockholm, SWEDEN
Tel: 46 8 6985000
Fax: 46 8 6985651
E-mail: Rikard.Elfving @Sida.Se

WAGAKI MWANGI - KENYA

Wagaki is the executive coordinator of EcoNews Africa, a subregional NGO that promotes participation of local communities in policy development; provides timely and appropriate information to communities and other NGOs in an understandable format; monitors and reports on macro-economic policies; supports and promotes the establishment of community communication

structures and mechanisms; and promotes the involvement of practitioners in policy-making. Her main area of specialization and interest is ICTs for development among rural communities and communication policy reforms. She is a member of the Working Group Committee of the EE project.

Contact Address:
Ms Wagaki Mwangi
Eco News Africa
P O Box 76406
Nairobi, KENYA
Tel: 254 2 721099/721076
Fax: 254 2 725171
E-mail: wagaki@ iconnect.co.ke

MARIE GRONVALL - SWEDEN

Marie is a consultant with Sida and works with the Environment and Communication AB (EnviroCom AB), an institution involved in EE and communication policy and strategy formulation, programme/project appraisal and evaluation. She has been involved in EE work for over 10 years in the Eastern and Southern Africa region. Her main area of specialization and interest is in EE and Communication, and Environmental Education Action Plan Development. She is a member of the Working Group Committee of the EE project.

Contact Address:
Ms Marie Gronvall
EnvironCom AB Lovbergav,
47 13239 Saltsjo-Boo SWEDEN
Tel/Fax: 46 8 747 96 90
E-mail: Marie@envirocom.se

JULIANA CHILESHE - ZAMBIA

Juliana has been the coordinator of a WWF-sponsored project on EE for the last nine years. The project is involved in writing materials on EE for schools and communities. It plays a catalytic role for NGOs and the Education and Environment Ministries, using a "carrot action" approach. Her main area of specialization and interest is in material writing, teacher training, community training methodologies, planning and implementation of projects, research, and networking. She is a member of the Working Group Committee of the EE project.

Contact Address:
Ms Juliana Chileshe
WWF-Zambia EE Program (ZEEP)
P O Box 50551
Lusaka, ZAMBIA
Tel: 260 1 227 249
Fax: 260 1 227 249
E-mail: wwf-zeep@zamnet.zm

CHRISTOPHER ZULU - ZAMBIA

Zulu works with the Ministry of Education and is currently the Chief Inspector of Schools in Zambia. He is involved in the development of educational materials, inspection of schools, and educational policy formulation. His main interest is in policy and curriculum issues.

Contact Address:
Mr Christopher E Zulu
Ministry of Education
P O Box 50093
Lusaka, ZAMBIA
Tel: 260 1 251507/251569;
Res: 260 1 251569
Tel/Fax: 260 1 251507

JOY CHIDAVAENZI - ZIMBABWE

Joy is the regional director of the Africa Centre of Holistic Management, an institution involved in environmental issues such as training in environmental management, desertification, Indigenous Knowledge,

community development, and research. Her main area of interest is in community economic development, desertification issues, and environmental management.

Contact Address:
Ms Joy Chidavaenzi
Africa Centre for Holistic Management
P O Box MP266 , Mt.Pleasant,
Harare, ZIMBABWE
Tel: 263 4 776942/746613;
Res: 263 4 496709
Fax: 263 4 746602
E-mail: root@ achrm2.icon.co.zw

MINNIE MUITHERI GATAHI - KENYA

Minnie is the national coordinator of the UNDP/GEF Small Grants Program (SGP). The program provides grants of up to US$ 50,000 and other support to community-based groups and NGOs for activities that address local problems related to the GEF areas of concern. These are biodiversity, climate change and international waters. Activities related to land degradation issues - primarily concerning desertification and deforestation can also be supported if they relate to one or more of these focal areas. Her main area of specialization and interest is management of natural resources and community mobilisation.

Contact Address:
Ms Minnie Muitheri Gatahi
United Nations Development Programme
UNDP /GEF Small Grants Program
P O Box 30218
Nairobi, KENYA
Tel: 254 2 228776-9
Fax: 254 2 210716
E-mail: minnie.gatahi@ undp.org

MWALIMU MUSHESHE - UGANDA

Musheshe is the chairperson of Uganda Rural Development Training Programme URDT which aims at creating consciousness and shift in attitudes towards a proactive and futuristic approach to development. The activities of URDT include extension work in agriculture, gender issues, appropriate technology, community media, small scale and micro enterprises, education, and human resources development. His main area of interest is visionary leadership training, technologies for creating, systems, and strategic planning and organisational self-understanding.

Contact Address:
Mr Mwalimu Musheshe
Uganda Rural Dev. and Training Programme
Ambassador House, Kampala Road
P O Box 16253
Kampala, UGANDA
Tel: 256 41 256704/342270,
Res: 256 41 567029
Fax: 256-41-342270/256704

AADIELA MOERAT - SOUTH AFRICA

Aadiela is a social ecologist and works in the Social Ecology Department of the National Parks Board of South Africa, which is involved in the integration of indigenous knowledge in EE programmes, conservation, research, tourism, and social ecology. Her main area of interest is EE, social ecology, and conservation.

Contact Address:
Ms Aadiela Moerat
National Parks Board
P O Box 7400
Roggerbay 8012,
SOUTH AFRICA
Tel:27 21 222816
Fax: 27 21 222955
E-mail: AadielaM@ parks.sa.co.za

BERNARD BAKOBI - TANZANIA

Bernard is the director of the National Environment Management Council (NEMC) which is the co-ordinating body for environmental issues and EE activities in Tanzania. The organisation is also involved in carrying out Environmental Impact Assessments (EIA). His main area of interest is EE, indigenous knowledge systems, EIA, and wetlands management.

Contact Address:
Mr Bernard Bakobi
National Environment Management Council
P O Box 63154
Dar es Salaam, TANZANIA
Tel: 255 51 150982/153148
Mobile Tel: 0811 335406
Fax: 255 51 34603
E-mail: nemceic@ intafrica.com/
nemc.natres@twiga.com

BERHE DEBALKEW - DJIBOUTI

Berhe works for the Inter-Governmental Authority on Development (IGAD) and is currently the Chief of the Environment Protection Section in which one of the priority areas is EE. His main area of specialization is forestry and GIS.

Contact Address:
Dr Berhe Debalkew
Environment Protection Section - IGAD
P O Box 265
Djibouti, DJIBOUTI
Tel: 253 354050
Fax: 253 353195/356991
E-mail: igadintnet.dj

JOSEPH IKALUR OBUINO - KENYA

Joseph has a background in secondary school teaching and is now involved in community development through sustainable NGO micro-projects. He has a wide experience in working with refugees in Lodwar, Sudan, and Ngara. His concern is the maintenance of sustainability and continuity of projects that have been started and to identify ways of supporting small initiatives. His area of interest is community education and community mobilisation.

Contact Address:
Mr Joseph Ikalur Obuino
Baaba Dev. Resource & Advisory Services
P.O. Box 53114
Nairobi, KENYA
Tel: 254 2 794895

CONNIE BOTMA - NAMIBIA

Connie is an environmental education officer with the Rossing Foundation, an NGO considered as the nerve centre for Namibian EE projects. The NGO runs a USAID-funded EE project working through environmental clubs in schools. She is currently adapting a certificate course in EE from South Africa to suit the Namibian experience. Her main area of interest is in environmental clubs.

Contact Address:
Ms Connie Botma
The Rossing Foundation
P O Box 20746
Windhoek, NAMIBIA
Tel: 264 61 211721;
Res: 264 61 247793
Fax: 264 61 211273
E-mail neen@ windhoek.org.na

CHARLES OYUGI – KENYA

Charles is an assistant chief inspector of schools and a curriculum developer with the Ministry of Education in the area of secondary school science, biology, and EE. His interest

is in promoting the infusion of EE component and the integration of indigenous knowledge at all levels of the formal school system. His main area of specialisation is curriculum development and science education.

Contact Address:
Mr Charles Oyugi Odie
Ministry of Education
P O Box 30426
Nairobi, KENYA
Tel: 254 2 224344 Ext. 9
Fax: 254 2 214287

KABIRU KINYANJUI, IDRC Representative - KENYA

Kabiru is a senior program specialist at IDRC with a special interest in two program initiatives - Assessment of Social Policy Reforms and Learning for Change within IDRC. His current concern is on utilisation of Information Communication Technologies (ICTs) in Environmental Learning to enhance the acquisition and utilisation of knowledge and skills for sustainable development. He is a member of the Working Group Committee of the EE project.

Contact Address:
Dr Kabiru Kinyanjui
International Development Research Centre
Liaison House, 2nd Floor
P O Box 62084
Nairobi, KENYA
Tel: 254 2 713160/61
Fax: 254 2 711063
E-mail: Kkinyanj@idrc.ca

KALAVUNJA OSAKI - TANZANIA

Osaki is a senior lecturer at the University of Dar-es-Salaam. He is involved in training teachers through NGO workshops. He has also been involved in developing a postgraduate courses in EE. He previously worked with the government of Zanzibar to develop environmental materials for primary schools, and has participated in writing materials for distance learning teachers. He has developed an EE course for the Tanzania Open University. His MSc and PhD research revolved around what teachers are doing in EE, and has supervised research on indigenous irrigation systems on Mt. Kilimanjaro. His main area of specialization is in EE materials development, research, and indigenous knowledge systems.

Contact Address:
Dr K M Osaki
Department of Curriculum and Teaching
University of Dar es Salaam
P O Box 35048
Dar es Salaam, TANZANIA
Tel: 255 51 43500-8/2765
Fax: 255 51 43078/43398
E-mail: osaki@udsm.ac.tz

DIETER KLEIN - GERMANY

Dieter is the team leader of a GTZ/Ministry of Education-Kenya project on Practical Subjects in Primary Education (PraSuPE). The project aims at strengthening practical subjects at primary school level and integrating EE in agriculture, home science, and art and crafts. GTZ has been involved in other EE related areas, such as development of EE materials for primary schools, refugees, and the Ministry of Education. His main area of specialization is in practical subjects in primary education (agriculture, home science, and art & craft) and technology education.

Contact Address:
Dr Dieter Klein
Ministry of Education
P O Box 41607
Nairobi, KENYA
Tel: 254 2 562820/2/3
Fax: 254 2 562671
E-mail: gtz-kenia@ke.gtz.de

BELINDA REGO - KENYA

Belinda is the chairperson of the Eastern Africa Environmental Network which is involved in promoting peace and EE networking in Eastern African countries extending to Sudan, Djibouti, and Ethiopia. The NGO facilitates the involvement of different groups and individuals through talking and understanding one another. The network stimulates the participation of schoolchildren through songs, dance, etc., and produces and distributes materials of environmental relevance. It promotes and recognises environmental leadership through an award system. This is a way of appreciating individual contribution because individuals are the keys to getting things done. She is also a full time lecturer in the Department of Geography, University of Nairobi. Her main area of interest is EE, environmental awareness, teacher education, geographical education, and networking.

Contact Address:
Ms Belinda Rego
Eastern Africa Environmental Network
P O Box 20110
Nairobi, KENYA
Tel: 254 2 572069/572034; Res: 254 2 446475
Fax: 254 2 572034

BRIAN RASHID - MALAWI

Rashid is a deputy director in the fisheries department of the Ministry of Forestry, Fisheries and Environmental Affairs. The department is involved in the management of fisheries resources, extension, research and training. His main area of interest is policy analysis, community mobilisation, and fisheries management.

Contact Address:
Mr Brian Rashid
Fisheries Department
P O Box 593
Lilongwe, MALAWI
Tel: 265 743 686
Fax: 265 721117

IDA OPOKU-MENSAH , PANOS INSTITUTE - ZAMBIA

Ida is the PANOS regional director for Southern Africa, an organisation whose mandate is to research and produce information on developmental and environmental issues. PANOS main target groups are the media, civil society, parliamentarians, and other policy-makers. Her main area of specialisation and interest is communication for development, ICTs, broadcasting, communications policy analysis, and journalism.

Contact Address:
Ms Aida Opoku-Mensah
The PANOS Institute
Centre for Public & Policy Debate for S. Africa
P O Box 320129 Woodlands,
Lusaka Zambia
Tel: 260 1 252585
Fax: 260 1 252078
E-mail panoslus@zamnet.zm

ELIAS MATIMATI - ZIMBABWE

Elias is a director of adult education in the Ministry of Education, Sports and Culture. He has been involved in designing a syllabus for key content areas in EE, particularly environmental science. He is interested in

methods of empowering decision-makers with knowledge, not just for sensitization but for conversion into environmentalists. His current concern is in the area of school drop-outs and how they can be catered for. His main area of specialization is non-formal education, adult and continuing education, and training in distance learning.

Contact Address:
Mr Elias Kuda Matimati
Ministry of Education,
Sport and Culture
P O Box CY 121, Causeway
Harare, ZIMBABWE
Tel: 263 4 794503;
Res: 263 4 776229
Fax: 263 4 794505

GUFLA FITIWE TEKLE - ETHIOPIA

Gufla is an education officer with an indigenous NGO, the Ethiopian Wildlife and Natural History Society (EWNHS) which encourages and supports research, and disseminates information on conservation. The organisation is a membership society with five programs under the umbrella theme Conservation for Survival which works with nature clubs in schools. The main work areas include: identifying bird sites and proposing conservation methods; distributing indigenous tree seedlings and plants; and organising lectures, slide shows, and excursions. His main area of interest is practical natural resources sustainable education.

Contact Address:
Mr Gufla Fitiwe Tekle
Ethiopian Wildlife & Natural History Society
P O Box 13303
Addis Ababa, ETHIOPIA
Tel: 251 1 183520
Fax: 251 1 552350

MARY KARANJA - KENYA

Mary is head of the information and education division of the National Environment Secretariat (NES) and is also the chairperson of IUCN's Commission on Education and Communication for the Eastern Africa region. NES coordinates environmental matters in the country including EE. Her main area of specialization and interest is EE and communication.

Contact Address:
Mrs Mary Karanja
IUCN-Commission on Education &
Communication Eastern Africa Region
P O Box 67839
Nairobi, KENYA
Tel: 254 2 229261 Ext. 35116
Fax: 254 2 214175

DANIEL BABIKWA - UGANDA

Daniel is a lecturer in the Institute of Adult and Continuing Education at Makerere University. He is currently involved in research with the Lake Victoria Management Authority covering Kenya, Uganda and Tanzania. He has also participated in capacity building and training of communities, development of materials for adult learners, and other EE-related research. His main area of interest is adult and community education.

Contact Address:
Mr Daniel Babikwa
School of Education
Institute of Adult & Continuing Education
Makerere University
P O Box 7062
Kampala, UGANDA
Tel: 256 41 543251
Fax: 256 41 531896
E-mail: avumuk@imul.comm

LARS JOHANSSON - TANZANIA

Lars is currently working with the Mtwara Media Centre, a Tanzanian rural development program which is in its infancy. The project came about as a result of the difficulty of communicating project outcomes, hence started using interactive video as a reporting mechanism. The project collaborates with Radio Tanzania in the area of community broadcasting, and amplifies the voices of grassroots people to penetrate policy levels, while bringing policy-makers to the grassroots level. He has also been an Environmental Impact Assessment consultant to the World Bank. He is interested in the possibility of integrating digital media with conventional communication modes.

Contact Address:
Mr Lars Johansson
Mtwara Rural Integrated Project Support
P O Box 113,
Mtwara, TANZANIA
Fax: 255 51 333 332 (Mtwara)
Tel: 4618679742 (Sweden)
Fax: 46 18 673420
E-mail: Lars.Johansson@ pi.se
Web: http://treesandpeople.lbutv.slu.se/

STEVE MURRAY - ZIMBABWE

Steve is the project coordinator of Action, an NGO involved in the development of education and training materials, curriculum development, networking through resource centres, teacher training colleges, schools, and communities. Through the Zimbabwe Trust, Action produces a mass media program for children and schools, whereby the needs are identified and researched on. The program then builds a package; conducts training for teachers in order to localize needs; incorporates wildlife and development issues into the curriculum; and builds school/community relationships since schools usually operate like islands. The program is exploring the school/community interface and examining the conflicts/ constraints to these links. Action is a resource centre accessible to practitioners, and acts as a catalyst for EE, thus publicizing the Zimbabwean EE network. His area of specialization is EE, project management, materials development, research, and training.

Contact Address:
Mr Steve Murray
ACTION
P O Box 4696
Harare, ZIMBABWE
Tel: 263 4 747213/217/274
Fax: 263 4 747409
steve.action@cst.co.zw

SOLLY MOSIDI - SOUTH AFRICA

Solly is the head of EE in the Department of Environmental Affairs and Tourism. The department is involved in policy formulation, capacity building, international and regional relations; liaison with NGOs, CBOs & IBOs; and research. His main area of specialization and interest is EE, curriculum development, policy formulation, indigenous knowledge systems, international relations and ecotourism.

Contact Address:
Mr Solly Mosidi
Department of Environment Affairs & Tourism
Private Bag X447
Pretoria 0001, SOUTH AFRICA
Tel: 27 12 3103781;
Res: 27 12 5461729
Fax: 27 12 3226287
E-mail: opv_sm@ ozone.pwv.za

GITURO WAINAINA - KENYA

Gituro is an educational economist with the World Bank, which supports education projects at various levels such as in early childhood development, primary, secondary, and tertiary levels, and in small scale enterprises. The environment department at the World Bank mainly deals with wildlife management issues. He appreciates the idea of a donors network to know who is doing what and would appreciate knowing where the World Bank could fit in the Environmental Learning project. His area of specialization is economics in education.

Contact Address:
Mr Gituro Wainaina
The World Bank
P O Box 30577 Nairobi, KENYA
Tel: 254 2 714141 Ext. 3410
E-mail: gwainaina@worldbank.org

SULTAN SOMJEE - KENYA

Somjee is an educational anthropologist and the head of Ethnography at the National Museums of Kenya (NMK). His work involves studies on the non-written culture, investigating visual and aural media in peace and conflict resolution with various communities. The institution is involved in collection, documentation , and preservation of botanical, archaeological, biological, and cultural materials, as well as school and public education. His main area of specialization and interest is educational anthropology, material culture, and indigenous knowledge on peace and conflict resolution.

Contact Address:
Dr. Sultan Somjee
National Museums of Kenya
P O Box 40658
Nairobi, KENYA
Tel: 254 2 742161-4/ 742131-4
Fax: 254 2 741424
E-mail: biodive@tt.gn.apc.org

ULF CARLSSON, UNEP - KENYA

Ulf is a program officer with UNEP and is currently involved in the Global Environment Citizenship Programme. He regrets the dismal performance of EE and emphasises the need to focus on good points and action. His main area of specialization and interest is EE and training.

Contact Address:
Mr Ulf Carlsson
UNEP
P O Box 30552
Nairobi, KENYA
Tel: 254 2 623419
Fax: 254 2 623917
E-mail: ulf.carlsson@ unep.org

TOM MWANGI ANYONGE - KENYA

Tom is a program officer in the Natural Resources Management division at the Embassy of Sweden - Sida. His main area of interest is forestry.

Contact Address:
Mr Tom Mwangi Anyonge
Embassy of Sweden (Sida)
P O Box 30600
Nairobi, KENYA
Tel: 254 2 229042
Fax: 254 2 220863
E-mail: tom.anyonge@sida.se

Workshop Secretariat

Margaret Gathoni Karembu
Workshop Coordinator
International Development Research Centre
P O Box 62084
or
(Private)P O Box 72866
Nairobi, KENYA
Tel: 254 2 713160/61;
Res: 254 2 722931
Fax: 254 2 711063/609878
E-mail: Mkarembu@idrc.ca

Ms Joy W Mutero
Rapporteur
Press Kit Editorial Consultants
P O Box 38859
Nairobi, KENYA
Telefax: 254 2 720913

Ms Florence Waiyaki
Workshop Secretary, IDRC
P O Box 62084
Nairobi, KENYA.
Tel: 254 2 713160
Fax: 254 2 711063
E-mail: Fwaiyaki@idrc.ca

Appendix 3: Evaluation Feedback

In evaluating their workshop experiences, all participants found the sessions stimulating, relevant, and applicable to their work. The majority felt that the workshop was successful in its objectives and met their expectations by more than 75 per cent.

The most valuable aspects of the workshop in order of importance were expressed as being the:

- high interpersonal, informal, and social interactions which allowed for free exchange and sharing of experiences, ideas, and future plans for the region;

- *Sokoni* session, because it exposed a variety of innovative activities and materials used in different countries within the region; enhanced informal networking; provided feedback about existing resources and was a great opportunity for learning and sharing real, practical, and adaptable ideas on EE;

- case studies because they were practical, easily replicable in other parts of the region, and enhanced knowledge of existing innovations and methodologies for environmental learning;

- stimulating group discussions which explicitly explored the current situation - strengths, weaknesses and opportunities - for improving EE implementation strategies;

- field trip to the GRID section at UNEP was very informative as most participants were not aware of its existence and the valuable information it contained; and

- the visit to the school, which was very relevant, the enthusiasm of the students very encouraging, and interactions highly informative.

The least valuable (weak) aspects of the workshop were:

- at the beginning, facilitation of the working groups was rather flimsy, resulting in initial time loss, and the guiding questions for the group discussions were not very clear.

- the UNEP GRID session was a bit technical to some practitioners, who felt that the realities on the ground in Africa such as lack of machines, poor infrastructure and unskilled manpower would almost render such services irrelevant;

- more time should have been allocated for the development of the Plan of Action, in order to include budgetary and other requirements for each activity; the format designed was limiting to the inclusion of diverse ideas; and chairpersons tended to dominate the plenary sessions, giving little time for inputs from the floor;

- the procedure for group allocation by arrival times was inefficient since it locked out some participants from their areas of specialisation; and

- the *Sokoni* session was loosely organised, thus hindering circulation to all the stands; it was stressful to some who had to man very busy stands with little time to see what the others had; and some organisations had nothing to display, despite availability of resources and materials in their institutions.

On presentations and workshop sub-themes, the general consensus was that the sub-themes were fairly to extremely relevant, while the style of presentation that allowed discussions after each thematic session was good. However, time allocation for the presentations was too short and the presenters should have had prior knowledge about this. This was compounded by the seemingly late submission

of papers which gave participants little time to digest their contents. Specific concerns were raised regarding the presentation on community learning, which participants felt dwelt too much on theories of community participation and little on practical aspects on how communities acquire, apply, and share specific environmental knowledge, skills, attitudes, and practices in dealing with environmental problems/issues.

Participants were required to give their vision statement on EE in Africa and this was expressed in various ways as follows:

• that EE will help all people to make informed decisions and practices for quality living and harmonised relationships with the environment;

• that EE will succeed in bringing about an environmentally literate society with equitable access to information through empowerment and capacity building;

• that EE can create a world that is conscious of its environment;

• that there will be joint and harmonised environmental learning from and within communities to create harmonised environmental perceptions; and

• that EE is integrated and incorporated in both formal and non-formal education, and all aspects of development.

Regarding logistics and administration, most responses indicated that the venue was excellent, the organisation very good, and time management fair. Other comments of note were that: four days would have been better, time management would have been improved if the sessions started on time or earlier; and the meeting room facilities were good and allowed maximum informal interactions.

Finally, additional comments on the workshop:

• a valuable learning experience where new ideas, innovative approaches, and materials on EE were shared;

• intensive interaction took place ;

• the list of participants should have been distributed before commencement of the workshop, to enhance networking strategies;

• an effective forum whose resolutions should be systematically followed up;

• a unique forum where all participants and especially donors were present throughout and participated fully with us and not on us;

• there is need to devise cheaper ways of networking beyond the workshop;

• the *El-nino* phenomenon did a lot of injustice because it was impossible to visit the community group, which would have been very useful in concretising some of the concerns raised regarding the presentations in this session; and

• the venue was too luxurious and would have done as well in a cheaper place.

Appendix 4: Workshop Program

Regional Workshop on Environmental Education in Eastern and Southern Africa
2 to 8 November 1997, Windsor Country Club, Nairobi, Kenya

Sunday 2 November :   Arrival of participants in Nairobi - Windsor Hotel
Orientation and consultations
Registration/Administration

Monday 3 November

9.00 - 9.45 a.m.   :   **Chairperson: Dr Kabiru Kinyanjui**
Welcome/Introductory remarks by IDRC/Sida
Official Opening:
Mrs Elizabeth Masiga - Permanent Secretary, Ministry
of Education - Kenya

9.45 - 10.15   :   Tea break

10.15 - 11.00   :   **Keynote Address:**
Professor Reuben Olembo - Deputy Executive Director, UNEP

11.00 - 12.45   :   Self-introductions and expectations of the Workshop

12.45 - 14.00   :   Lunch Break

14.00 - 15.30   :   Workshop Approach to Environmental Education
Dr Kabiru Kinyanjui
Working Groups allocation/ Guidelines for Group discussions

15.30 - 16.00   :   Tea Break

16.00 - 17.30   :   Presentation: Donor Support to Environmental Education
in Eastern and Southern Africa:
Ms Marie Gronvall

18.00 - 18.30   :   Open-ended Steering Committee Meeting

19.00 - 20.30   :   Welcome Cocktail

Tuesday 4 November: **Chairperson: Ms Juliana Chileshe**

09.00 - 10.30   :   Presentation:
Technology in Environmental Learning:
Ms Ida Opoku Mensah

Case Studies:
a)   Interactive video: Mr Lars Johansson
b)   Community Radio: Ms Lynn Wanyeki
c)   E-mate: Dr Jim Taylor

Discussion

10.30 - 11.00   :   Tea Break

11.00 - 12.45   :   Presentation:
Utilization of Indigenous Knowledge Systems (IKS):
Ms Joy Chidavaenzi

Case Studies:

Enhancing IKS

a)   Material Culture: Dr Sultan Somjee
b)   Grain Pits: Dr Solly Mosidi
c)   Alternative Energy Sources: Mr Bernard Bakobi

Discussion

12.30 - 14.00   :   Lunch

14.00 - 15.30   :   *SOKONI:*
Market Place to share experiences, ideas, practices and
opportunities in Environmental Learning

15.30 - 16.00   :   Tea Break

16.00 - 17.30   :   Presentation:
Community Learning Processes and Practices:
Mr Brian Rashid

Case Studies:

a) Community reflection and involvement:
Mr Mwalimu Musheshe

b) Linkages between formal and non-formal/informal learning situations:
Mr Daniel Babikwa

c) Methodologies of community learning and action:
Mr Joseph Ikalur Obuino

Discussion

18.00 - 18.30	:	Open-ended Steering Committee meeting
19.00 - 20.00	:	Dinner

Wednesday, 5 November: **Chairperson: Ms Wagaki Mwangi**

09.00 - 10.30   :   Group Work:
Issues arising from presentations and future recommendations.
Policy; Resource Materials; Capacity Building;
Coordination and Collaboration; Research; Networking

10.30 - 11.00   :   Tea Break

11.00 - 17.00   :   Field Trip:
- UNEP
- School with an Environmental Education Project

18.00 - 18.15   :   Open-ended Steering Committee meeting

18.30 - 20.00   :   Dinner
Cultural Performance - Traditional Stories/Dances

20.00 - 21.00   :   Group Work (Optional)

Thursday, 6 November: **Chairperson: Dr Jim Taylor**

09.00 - 10.30   :   Plenary — Groups Report Back

10.30 - 11.00   :   Tea Break

11.00 - 12.45	:	Groups meet to discuss feedback
12.45 - 14.00	:	Lunch
14.00 - 15.30	:	Working Group Meetings to develop Plans of Action (Guidelines provided)
		Potential implementation agencies/partners/donors identified
15.30 - 16.00	:	Tea Break
16.00 - 17.30	:	Plenary — Groups present three year Plan of Action
18.00 - 18.30	:	Open-ended Steering Committee Meeting
18.30 - 19.00	:	Group Meetings to Refine POA (Optional)
19.00 - 20.00	:	Dinner

Friday, 7 November	**:**	**Chairperson: Mr Rikard Elfving**
09.00 - 09.20	:	Final Presentation of three year Plan of Action
09.20 - 10.30	:	Way Ahead – EcoNews Africa and others – Responsibility Sharing
10.30 - 11.00	:	Tea Break
11.00 - 11.30	:	Evaluation
11.30 - 12.00	:	Closing Address Sida IDRC

Appendix 5: Opening Speech

Speech delivered by the Permanent Secretary, Ministry of Education, Kenya, Mrs Elizabeth S. Masiga, during the Opening of the Regional Workshop on Environmental Education in Eastern and Southern Africa, 3 November 1997, at the Windsor Country Club, Nairobi, KENYA.

The Chairman, donor agencies and partners, distinguished participants, ladies and gentlemen,

It is my great pleasure to be here with you today to open this regional workshop on EE in Eastern and Southern Africa. Our country Kenya is equally honoured to have been chosen to host such a workshop of this magnitude and on behalf of the government, I take this opportunity to welcome all the participants to Kenya and wish you and the workshop organizers an excellent and prosperous stay in Kenya.

The enormous surge of interest in the environment these days has to be matched with appropriate actions, especially by the relevant stakeholders. We in education know very well the potential of EE in enhancement of essential knowledge, skills, values, and practices that are necessary in dealing with environmental issues. The theme of this workshop 'Strategies and Mechanisms for Strengthening Cooperation, Coordination, and Networking in the implementation of EE, could not have been more appropriate at this particular time and place. Already, the theme is well exemplified by the calibre and scope of participants in this workshop. They have been drawn from Ethiopia, Kenya, Malawi, Namibia, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. This could not have happened if there was no effective international cooperation and networking which is one of the pillars of our foreign policy.

I would also like to recognize the donor agencies and partners who have made it possible for the workshop to take place. These include the International Development Research Centre (IDRC) and the Swedish International Development Corporation Agency (Sida). I am made to understand that this workshop is an outcome of the recognition by IDRC and Sida that despite the many recommendations and pledges that have been made in previous EE fora in the region, such activities were not coordinated, cooperation was limited, implementation of strategies and mechanisms was weak, all leading to minimal tangible output and less effectiveness of EE..

The most serious of these were in the following areas:

(i) coordination, cooperation, and networking was lacking and there were no follow-up mechanisms, of the recommendations made;

(ii) sectoral approach to EE in both formal and non-formal programs resulting in conflicting and often duplicated efforts, thus significantly slowing the progress of environmental learning;

(iii) limited integration of indigenous and scientific knowledge systems (traditions, culture and language) in EE programs, despite the potential impact that such integration is acknowledged to entail;

(iv) the information flow from communities to decision /policy makers, scientists and vice versa was poor, leading to the development of policies that do not reflect the scientific, economic, social, and ethical considerations in environmental

management; and

(iv) lack of institutional and human capacity to facilitate the acquisition and implementation of environmental learning, manifested by poor networking and coordination in training, resource materials development, and gender considerations.

In view of the above shortcomings, IDRC and Sida - both partners in the field of EE - have initiated a process of discussing and exploring critical issues aimed at making EE more practical, innovative, and responsive to a rapidly changing technological world. Specifically, the process will address issues of coordination and collaboration in the various activities on the ground, explore innovative ways of translating most of the recommendations made in various fora into practice, define effective and workable implementation strategies, and prioritize follow-up policy and research activities aimed at reinforcing effective implementation of EE at both regional and local levels.

I wish to inform you that the process of making EE more practical is expected to be nurtured beginning with this workshop, which has called about 40 key players in the areas of policy, research, community education, donor agencies, and other partners in EE. This workshop which has representatives from selected countries of Eastern and Southern Africa will explore appropriate mechanisms and strategies for cooperation, coordination, and networking in EE. It will also identify priority research activities to be pursued at national and regional levels in order to make learning related to the environment more effective and better coordinated, while incorporating indigenous and community knowledge and experience.

The workshop will also explore the use of information communication technologies (ICTs) in enhancing effective environmental learning and assess the capacities needed to strengthen their utilization.

Let us reflect a little on the workshop objectives, which are to:

i) provide a forum for sharing experiences and practices in EE with a view to strengthening cooperation, coordination, and networking among the various stakeholders;

ii) explore innovative approaches to environmental learning and develop strategies to enhance their utilization in formal and informal education;

iii) formulate strategies and mechanisms for the integration of indigenous knowledge and community learning practices in EE programs;

iv) create awareness on appropriate resources in use for EE; and

v) prepare A Joint Plan of Action and recommend a strategy for the implementation of the activities agreed upon by the various stakeholders.

These objectives will be realised through paper presentations, case studies, a video presentation, and the *Sokoni* session. The workshop sub-themes such as: partnerships for cooperation in EE; technology in environmental learning; indigenous knowledge systems; and community learning processes and practices are all encompassing to ensure that this workshop has good tangible outputs.

I would now like to draw your attention to cross-cutting issues in all the sessions that you

will have:

- **Curriculum Content**: I hope that in this area you will come up with what and how the EE curriculum should be developed and learnt. You should endeavour to define innovative approaches to the teaching and learning of EE, and strategies for tapping local environmental knowledge;

- **Capacity Building**: In this area, I hope you will identify the form of training needed to produce trainers who are able to integrate indigenous and scientific knowledge systems in EE, the form of policy changes required to facilitate this, and also prioritize the research areas that would help build strong human and institutional capacities for EE.

- **Resource Materials Development**: Scanty and inappropriate EE materials continue to hinder its effectiveness. I hope you will be able to come up with mechanisms of involving local communities in the development of relevant materials, that would lead to the establishment of data centres for dissemination and sharing of these materials;

- **Technology**: The upsurge of the new and emerging Information and Communication technologies brings with them new characteristics expanding the horizons for information exchange among and between people. I hope this forum will define innovative and workable mechanisms on how communication technologies could be accessed to enhance the sharing of environmental information, ideas, and experiences within communities and schools in the region.

Turning to Kenya, ladies and gentlemen, I would like to say that the government has put in place a number of strategies in this area of education. The government places great emphasis on the central role of education and training in an effort to conserve, develop, and enhance the environment for posterity. The government's Sessional Paper no. 6 of 1988 states that:

- environmental education (EE) be made part and parcel of education and training curricula and be taught at all levels of education systems, and

- concerted efforts be made to educate members of the public on methods of, and their specific roles in conservation and enhancement of the environment.

At the moment, EE is being taught in various subjects such as science, GHC, and home science in primary schools. In secondary schools, EE is infused into such carrier subjects as biology, physics, chemistry, geography, and social education and ethics. The government will continue to expand the infusion of environmental topics in more subject areas with successive review of the curriculum. The secondary schools diploma teacher training colleges (KSTC and Kagumo) offer a one year introductory course on environmental science. All Bachelor of Education students at the national universities in Kenya do take a course in EE. Apart from these, there is the Faculty of Environmental Studies at Kenyatta University and the School of Environmental Studies at Moi University.

What would be more vital than the concern about one's environmental protection and conservation? In this regard, one immediately thinks of:

Protection of the atmosphere by combating climate change and global warming; depletion of the ozone layer; and transboundary air, water

and land pollution. These are real issues, and in Kenya, now our weather is as a result of the *El-nino* phenomenon.

This workshop could not have taken place at a more opportune time for us here in Kenya. We hope that the outcome of your deliberations will be of paramount importance to us in the education sector, and will also go a long way in helping to enhance some of the projects and programs that we have in our school system such as the Project on Environmental Education in Primary Schools in Eastern Africa (PEEPSEA) which involves three countries - Kenya, Uganda, and Tanzania, and the GLOBE program. This is a hands-on school based International Environmental Science and Education Program. The mission of the GLOBE program is to bring together students, teachers, and scientists from around the world to: enhance environmental awareness of individuals worldwide; increase scientific understanding of the earth; and support improved student achievement in science and mathematics.

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Under the guidance of GLOBE, trained teachers and students at GLOBE schools make environmental measurements at, or near their schools following the various protocols such as hydrology, atmosphere, land cover, biology, soils, globe position system (GPS), and seasons. We hope that these activities will enhance environmental learning by students.

Last but not least, I must say that this is a unique forum which has drawn participants who hold responsible positions in their countries and institutions *(see participants'profile)* and who have the opportunities to implement the activities that the workshop is going to identify, which will no doubt enhance EE in the region. The task ahead of you is therefore quite challenging. However, I am confident that you are experts and specialists in EE in your own right, and through the sharing of experiences in this workshop, you should be able to come up with possible mechanisms to uplift EE.

Mr. Chairman, ladies and gentlemen, it is now my great pleasure to declare this workshop officially open.

Appendix 6: Keynote Address

Keynote Address by Professor Reuben Olembo, Deputy Executive Director, United Nations Environment Programme (UNEP) at the Regional Workshop on Environmental Education in Eastern and Southern Africa, 3 November 1997, Nairobi, Kenya.

It gives me great pleasure to be with you today at the opening of the Regional Workshop on Environmental Education in Eastern and Southern Africa here in Nairobi. For us in the United Nations Environment Programme, your decision to meet in Nairobi has a special meaning. We are proud to be based in this beautiful city. It is, therefore, only natural that we should have an affinity for the problems that afflict this part of the world and endeavour to seek solutions to them.

As I see it, Africa today is capable of influencing events and policies all over the world, although it never plays its hand effectively in shaping international policies. Africa commands nearly one third of the votes in the United Nations and constitutes around 40 per cent of the membership of the G-77, numerical numbers which it can use to shape the course of events. It has the largest reserves of untapped natural resources in the world. It has human resources that are as undeveloped as its sunken treasures - half of them no older than 15.

And if we believe in the postulate that the human race originated in Africa, it is reasonable to assume that it was the centre of culture long before any of the Europeans arrived on the continent. Rather than being influenced by the new foreign ways, Africa could have stamped its experience on others. Even now, changes are propelling Africa towards a destiny that we cannot comprehend. Where these changes take Africa will determine the world's direction in the next century. If Africa remains troubled, all the world suffers and its economies and

stability will be threatened.

But then, the world itself stands today at the threshold of an era of momentous change. Rapid and far-reaching changes are taking place in the field of economics, politics, and ecology. The very basis of the ideas that shaped our lives, our institutions, and relationships are being questioned and re-evaluated. Concepts such as "growth", 'peace" and "security" have acquired new meanings. In conjunction with this is the emergence of an integrated world view, of a global perspective that suggests the ability to recognize the interconnectedness of things and the wisdom to perceive relationships between apparently diverse elements. The world has moved beyond mere economic to ecological interdependence.

Central to all this is the view that no individual, organization or nation can hope to fulfil its goals in isolation. Cooperation, coordination, and partnerships have become intrinsic to success. Seen in this light, education - especially EE - has a pivotal role to play. Education will have to disregard the traditional frontiers that separate the specialized disciplines. It will have to increasingly adopt an interdisciplinary approach that would give a more comprehensive and less cursory picture of the problems that we face.

Education is after all more than just reading the sciences or specializing in particular spheres. True education is about destroying barriers that have been built - not only between nations and communities, but also between disciplines. I am sure that the professionals who

meet here today will go beyond the simple search for narrow solutions. They will have to study the underlying reasons for the present situation. They will have to recommend ways and means of solving the problems and to order the priorities.

We live in a world threatened by many examples of ecological collapse. We have today about 1.1 billion people living in absolute poverty. We have today a situation where there are a billion illiterate people. We have nearly 13.5 million children under five in developing countries dying each year from malnutrition and 35,000 children every day from environmentally related diseases. We have a situation where world-wide 25,400 million tonnes of material are removed from the top soils on account of excessive erosion. Degradation has affected 43 million hectares of irrigated land.

We face today the prospect of the extinction of one quarter of all the Earth's biological diversity in the next 20 to 30 years. In fact, between 100 to 300 species may be getting extinct every day. We are in a situation in which 16.8 million hectares of forests are felled every year. We have an atmosphere that every year absorbs 99 million tonnes of sulphur oxides, 68 million tonnes of nitrous oxides, 57 million tonnes of suspended particulate matter and 177 million tonnes of carbon monoxide. We have reached a situation in which climate change has become a threatening possibility. More than three billion people or 60 per cent of the world's population will be threatened by the sea level rise. The list goes on....

Add to this the inequitable patterns of economic growth and unsustainable patterns of consumption. With 25 per cent of the world's population, the developed countries consume 80 per cent of the world's resources. It has been estimated that the growth required to fulfil the basic needs of the world's population will put a tremendous burden on this planet's critical life supporting systems. Thus, the rich and poor countries alike face unparalleled problems. Neither can the problems be separated from one another nor solutions devised in isolation from one another.

What is required are fundamental changes in our institutions based upon a recognition of common interest and mutual concern in an increasingly interdependent world. More than 20 years ago, the United Nations Conference on the Human Environment in Stockholm highlighted the need for establishing an International Program for Environmental Education. The aim of the international program, as the declaration said, would be to educate the ordinary citizen "as to the simple steps he might take within his means to manage and control his environment".

The United Nations Conference on Environment and Development in Rio in 1992 re-affirmed this commitment. 1 would like to quote a passage from Chapter 36 of Agenda 21 which relates to the promotion of education, public awareness, and training.

"Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues....Both formal and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving the environmental and ethical awareness, values and attitudes, skills, and behavior consistent with sustainable development and for public participation in decision-making."... Agenda 21, Chapter 36

EE and learning is not something new. For thousands of years, children were taught by their parents what plants and animals they could eat, how to collect water, and how to stay alive. The skills and knowledge on how to interact with their surroundings became a survival issue for individuals. As time passed we became more skilled in manipulating our surroundings in order to harvest more and live a better life. The impacts of our manipulations became greater. It soon became clear that what humans before thought were infinite sources of food and other resources actually turned out to be limited resources. With the advent of industrialism, it also turned out that the health of both humans and ecosystems were affected by human activities.

In 1972, EE was recognized as a major tool to increase the awareness among children, the public and policy makers. Today, we can see that knowledge about environmental issues and problems is much greater. People are aware of the problems facing us due to unsustainable lifestyles.

Twenty five years ago, when EE was developed and promoted, it was in the forefront of educational reform through its holistic and innovative approach. However, up till now, EE has been a very academic discipline. For a well educated person, it is easy to think in the abstract ways environmental issues often require but, for people who are not used to the abstract thinking that the natural sciences require, it can be very difficult to understand environmental problems.

EE has often been by educators for educators. It has failed to reach out to children in the classroom, to the general public in the street and the decision makers of a country and actually change their attitudes and empower them to take action, individual action, as the

Chairman earlier stated, without waiting for others to do so.

How can EE become more effective in creating awareness, educating new generations of children and changing people's attitudes and minds?

The suggestions I am going to give you today are in no way meant to be an exhaustive list of recommendations.

- First. EE must come out of the universities and academic institutions, down to the grassroots level and establish a direct contact with those whom it is meant to educate. EE must also adapt to new trends and sub-cultures in society in order to be attractive for the younger target groups.

- Second. Formal and traditional EE must be strengthened, and at the same time be complemented by non-formal and non-traditional approaches to reach out to important groups in the civil society.

- Third. No development project will have a lasting effect if it does not have an educational component. Therefore all development projects must be encouraged to use EE as an integral part of an environmental/developmental project.

- Fourth. EE must look at the local environment around its target group in order to effectively reach the audience by using indigenous and local knowledge. Global warming and the depletion of the ozone layer does not interest a farmer in Thika.

- Fifth. The most effective way of transmitting knowledge is through dialogue, not monologue. Education must be interactive and multilateral. Let the

target group also act as teachers/ communicators.

- Sixth. EE/communication must be action oriented. We must move from awareness building towards action and participation in environmental events. We must move towards a feeling of responsibility and environmental citizenship.

- Seventh. Education which does not offer alternative solutions, and an education which only paints a future dominated by problems, will have a limited impact. Education must give feasible alternative solutions to problems and offer a brighter view of the future. Without it, the target group might lose hope.

- Eighth. Our EE efforts have to be redirected and this message must be conveyed to educators and trainers. They must understand their own role as communicators and educators and the role of EE in society.

UNEP is intensifying its work in EE through targeted public information campaigns developed under the umbrella of its new Global Environmental Citizenship Programme. I am convinced that sustainable development and environmental conservation are classic areas in which an active citizenry and a sense of social obligation can and must be fostered. The reasons for this are obvious.

The search for sustainability is based on two key principles: of recognition of the inter-dependence between people and the natural systems, and participation on the basis of common goals and values in decisions and actions about natural resource utilization. The central purpose of environmental citizenship is to extend the duties associated with active citizenship to include responsibilities for the environment.

It implies that we are not only citizens of a particular country but are also members of a larger ecological community and international community, and must be prepared for membership of this community by acquiring relevant knowledge and behaving accordingly. Environmental citizenship is also based on the premise that experts cannot provide all the answers, as the consensus over goals is as important as the technical means of achieving them. Equally, governments cannot achieve everything in isolation, but must he prepared for partnerships.

Through our Global Environmental Citizenship Programme, UNEP and its partners seek to promote the conscious acknowledgment of environmental responsibilities of different sectors of society. Global Environmental Citizenship is UNEP's strategy for the integration of existing public education and information activities around a common theme, a common goal - environmental citizenship. It means revising education policies to focus on improved general environmental literacy. It means re-designing our approach to communications, the production of educational material and tools. And perhaps most significantly, it means establishing strategic alliances with organizations of international influence that could operate as delivery mechanisms for global environmental citizenship.

UNEP's EE and outreach work with major groups are being re-designed to incorporate a demand-side approach which focuses more on the needs and concerns of different audiences — going beyond governments. To this end, UNEP will continue to facilitate the participation of major groups and NGOs of international influence in the environmental

agenda around the concept of global environmental citizenship. It will consolidate strategic alliances with key groups that play important roles in society such as parliamentarians, consumers, local authorities, educators, religious groups, and media.

The ultimate purpose of fostering environmental citizenship is to ensure that each generation transmits to its successors a world that has the range of natural wealth - enhanced, in so far as possible - and the richness of human possibilities that it received from its predecessors. The notion of Global Environmental Citizenship can only succeed if it enlists the support and cooperation of the best and the most concerned stakeholders in the society.

I look to all of you present today for assistance in ensuring the success of our endeavours.

Appendix 7: NARRATION SCRIPT

VIDEO ON ENVIRONMENTAL LEARNING FOR OUR FUTURE

As we approach the 21st Century and the magnitude of environmental degradation becomes increasingly apparent, a number of issues are being raised concerning the process and methods of acquiring, transmitting, and applying essential knowledge, skills, values, and practices to deal with environmental problems.

Like in many parts of Kenya, use of natural resources in Kajiado district has been exercised without much thought for the future, resulting in a number of environmental problems and poverty. To try and solve some of these problems, the Maasai at Elangata Wuas have organized themselves into a community-based development group with the aim of utilizing natural resources in a sustainable way.

With the support of IDRC, the Elangata Wuas Ecosystem Management Program was established in 1993 to coordinate its activities. The program is however owned and managed by the community. It strives to merge local traditional knowledge with modern scientific information. In management of woodland for example, the local people and program personnel discuss the nature of available trees to find out what trees are traditionally used for various purposes. Each group learns from the other.

The local community normally lead program personnel into the bushlands to identify certain trees and their uses. During the field visits the groups share knowledge about characteristics of different tree species. While there, the group measures the height of a tree in relation to the others. Some of these characteristics are important in the selection of which trees are to

be felled. It is out of this process that the group has developed guidelines on rehabilitation of degraded pastures by opening up wooded areas and selective removal of woody plants that suppress grass cover. Such woods are then burned using modern technology for better yield and is sold to raise income.

Statement by Dr Jeff Odera
Coordinator, Elangata Wuas
Ecosystem Management Program

To replenish the woody plants, a tree nursery has been established out of which a tree planting program is undertaken. Since water is scarce here, a waterhole had to be dug up to feed the green house.

Women of Elangata Wuas have their own income-generating projects. This group makes dusters or dust-brushes from ostrich feathers which they sell to customers.

Statement by Agnes Ngapapa
Women Group Member

When there is an order (for the dust-brushes) we work say three or four times more. Though the money is not much, if I make ten like these, I am paid Ksh 200. Even if the money is little, it helps because if, for example I didn't have maize-meal, I go and get it.

Some tracks of forests still exist in certain parts of Kenya. However, their continued existence is heavily threatened by various commercial interest groups and their protection is sometimes left to individuals who are concerned. As a traditional herbalist and modern medical practitioner, Dr Githae

acquired a 200 acre forest land in Rumuruti which he does not only protect but conserves the natural resources therein. He has also introduced some indigenous plants.

Statement by Dr Jack Githae
Herbalist

> *My conviction about the future of indigenous knowledge is a situation where policies and programs to protect the indigenous forests are put in place and organizations come together to enforce their protection.*

To sensitize the youth on environmental conservation and to disseminate indigenous knowledge more widely, Dr Githae founded the School of Alternative Medicine and Technology in Nyeri. This is the only educational institution that formally teaches herbal medicine in Africa. This is one of the classes in Dr Githae's college.

Community Media Project at Kibwezi

New and innovative modes of communication are continuously being introduced in environmental learning. In Kibwezi, a unique partnership has put in place an activity in which the local community produces audio programs on developmental issues. They then listen to these programs as a group at scheduled meetings.

The aim of the Mangelete Community Media project is to encourage networking among women so that they could learn and benefit from each other's experiences, and to extend the use of audio tapes as a communication tool through village listening groups. While EcoNews funds this project, the women themselves run it and AMREF manages the funds. It is hoped that with future training, they will be able to manage even the funds themselves.

Statement by Rosbina Biteyi
AMREF Project Manager - Kibwezi

> *Another innovation by this Women's group is the establishment of a community resource centre where books and other printed materials on development are stocked. The idea was to bring relevant information closer to the people on relevant development issues such as goat-keeping, bee-keeping, and agroforestry. Each community member is allowed to borrow a book for a maximum of two weeks. Through exchange of information at the learning centre, each woman now plants at least ten trees a year.*

Statement by Redempta Nthia
Chairlady, Mang'elete Community Media Project

> *Kanini Kaseo Women's group in the area has since developed a merry-go-round activity which ensures that each member's shamba is terraced to avoid soil erosion, a major problem in this part of Kibwezi. Here they work closely with the agricultural extension officer who advises on how best the work can be done. The rest is left to the women themselves.*

It is amazing how these women work despite the harsh climatic conditions.

Statement by Mr Paul Ongugo
Coordinator, Nguriunditu Forestry Project, KEFRI

> *In 1993, the Kenya Forestry Research Institute approached Nissay Green Foundation of Japan to assist it improve the environmental conditions of the surrounding areas. This was to be achieved through two major activities. The first one was to rehabilitate the vastly degraded Ngurianditu Valley by replacing the exotic eucalyptus trees with environmentally friendly mixed*

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indigenous trees. This valley runs across KEFRI and the Kenya Agricultural Research Institute land. It opens on either end to a nearby settlement scheme whose inhabitants are predominantly an intensive farming community.

Rehabilitation of the valley through planting of indigenous trees is now continuing and the future looks brighter for the valley.

The second part of the activity was to establish the Utafiti Academy, a primary school sponsored by KEFRI, to be used as a model to involve the primary school children in sound environmental management around the school compound. Several tree nurseries and a woodlot which the children manage themselves has already been established.

The nurseries also act as a constant supply of indigenous species to the surrounding communities for the purpose of the rehabilitation process. Both the parents and their children play an active role.

Successful management of the environment ultimately depends upon the cooperation of various agencies, groups, and informed citizens acting either individually or collectively.

Written by Albert Wandago • 1997

VISUALISE

By Samuel N. Mburu and James G. Kariuki of Kiambu High School.

Last night I had a dream
No ordinary futile dream
But in it filled with perennial visions
Reflecting upon the future.

There I was at my parenthood age
Planning my family with four or some kids
Secured their future with a few acres land
My wife was at peak content
But not for long.

Come this man with an exquisite tuxedo
A comfy Biemmer
And a velvet pipe
In his hands an imperrious briefcase
Bearing contracts
And a parker pen.

Sight is deceitful
But the figures in his cheque
Took my breath away
As I signed the fake contracts
My land, a future highway, a mansion
Who knows? Who cares?

I bounced excitedly to the bank
From it to the law
And as for the judge -
"Case closed!"
My kids' future, my dreams
Shattered.

I woke up with a fright
Thank God it wasn't true
For me, that is
For many, it exists
The future reflects
Land grabbing must stop!

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