

Nile Transboundary Environmental Action Project

Networking Environmental Education and Awareness Practitioners in Sudan



Formation of National Environmental Education and Awareness Working Group

NTEAP PMU, Khartoum, Sudan,
22-23 November 2004

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WORKSHOP PROCEEDINGS

NILE BASIN INITIATIVE

Initiative du Bassin du Nil

INTRODUCTION

Environmental education and awareness is not new. Environmental education (EE) was passed informal from generation to generation since time in memorial. Children were brought up by their parents to know what plants and animals could be eaten and how to collect them. That is environmental education - getting to know your environment. Environmental education and awareness become an issue in the international arena in 1972 after the UN conference on Human Development in Stolkhom, the formation of UNEP in 1972 and the subsequent establishment of the international EE programme in 1975. EE was then formalised. A series of international conferences like the intergovernmental conference on EE in Tbilisi in 1977 and Tbilisi +10 in Moscow have continued to shape the planning and implementation of EE activities.

The link between a strong environmental education component and the success of any environmental project can not be over debated. The Nile transboundary Environmental action project - one of the seven projects under the Nile basin shared vision has an environmental education and awareness component. The aim of the component is to stimulate positive behavioural change towards good environmental practices among the communities along the basin.

The Nile - the worlds longest river flowing 6,600 km and drains 3.1 m km² - is home to about 160m people. The overwhelming majority of people of the Nile basin live in rural areas and depend directly on land and water resources for shelter, income and energy. This has put enormous pressure on the natural resources and ecological systems on which the economic development is based. This has resulted in a variety of environmental problems - soil erosion, degradation of agricultural lands, desertification, loss of forests and wetlands, overgrazing of pastures, declining water quality, overexploitation of fisheries, eutrophication of lakes, invasive water weeds, inadequate urban waste management, water borne diseases, declining biodiversity, and the threat to climate change.

Coupled by the threats and the fact that the linkages between environmental conditions and human welfare are extraordinarily complex and the appreciation and understanding how human behaviour can contribute to the solving environmental problems remains generally low in the basin, sets a big challenge for deepening public awareness and the understanding of the linkages.

In order to contribute significantly on this challenge, the EE&A component embarked on setting up partnership and networks with practitioners and other stakeholders within the basin. Based on the background that there are many players undertaking various EE&A activities, there is lack of a forum for exchange of ideas and collectively plan and monitor EE&A activities.

Understanding the importance and potential for such a forum, the EE&A component within the Nile Transboundary Environmental Action Project (NTEAP) supported and facilitated the formation of a National Environmental Education and Awareness Working group through a two-day workshop. In addition workshop participants developed National EE&A priority activities and learned on the status of EE&A within the country from paper presented.

This report summaries the proceedings of the workshop. The document is divided into five sections. Section one hinges on the objectives and expected outputs of the workshop. A summary of the papers presented comprises section two, while section three list priority EE&A activities. Section four presents the closing ceremony. Section five groups the annexes.

As the world enters a decade for Education and Sustainable Development (2005 - 2015), it is my hope that this document will act as a baseline for EE&A as we evaluate ourselves at the end of the decade.

Maushe Kidundo
Environmental Education and Awareness Specialist
November 2004

WORKSHOP PROGRAMME

DAY 1

Day One: 22/11/2004:

Session 1: Official Opening: Chair person: Dr. Musa Al-Khalifa

| Time | Activity | |
|-------|---|------------------------------|
| 08h30 | Holy Quran/Welcomes/Program/ | National Project Coordinator |
| 08h50 | Opening | High Council for Environment |
| 09h10 | EE&A within NTEAP and Workshop Objectives | EE&A Lead Specialist |
| 09h40 | Discussions and/or clarifications | Chairperson |
| 10:00 | BREAKFAST | |

Session 2: Papers Presentations by National Experts: Chair person: Dr Yagoub Abdullah

| | | |
|-------|---|------------------------------|
| 10h40 | The status of EE&A in the country | Dr. Musa Al-Khalifa |
| 11h00 | EE in schools | Mr. Mohamed Abdullah Elarki |
| 11h20 | EE curriculum in universities | Dr. Elhag Abugabr |
| 11h40 | Discussion on the three papers | Chairperson |
| 12h20 | BREAK | |
| 12h40 | NGOs in Public awareness and campaigns (SECS) | Mr. Suleiman Mohamed Ibrahim |
| 13h00 | NGOs in EE in schools (SOS Sahel) | Mr. Kamal Mohyeldin |
| 13h40 | The role of the media in awareness creation | Mr. Musa Beirag |
| 14h00 | Discussion on the three papers | Chairperson |
| 14h40 | BREAK | |
| 15h00 | Discuss group topics and formation of groups | NPC/Lead Specialist |

Day 2: 23/11/2004:

Session 3: EE & A activities opportunities: National and Trans boundary

| Time | Activity | |
|-------|-------------------------------------|------------------------------|
| 08h30 | Recap, | National Project Coordinator |
| 08h50 | Group Work | EE&A lead specialist |
| 11h00 | BREAKFAST | |
| 11h40 | Group presentations and discussions | EE&A Lead Specialist |
| 13h00 | BREAK | |

Session 4: Way Forward and Conclusion

| | | |
|-------|------------------------------------|------------------------------|
| 14h30 | Workshop (Country) Recommendations | National Project Coordinator |
| 15h00 | Closing remarks | Ministry of Education |

OPENING CEREMOMNY

I A word of welcome by Dr. Adel Salam- National Project Coordinator, Sudan

Dr. Nadir Awad, Secretary General High Council for Environment & Natural Resources
Distinguished Representatives of ministries, institutions, NGOs, & national experts

First, I would like to welcome you all and thank you for coming and participating in this EE& A workshop, which represents one of the activities under the NTEAP

Previous efforts to conserve the environment systems and management of the natural resources of the Nile basin traditionally were limited to the boundaries of the individual countries of the basin, but recently there have been increasing recognition of the regional & global dimensions.

The Nile basin comprise ten riparian countries, six of these countries have borders with Sudan. In this sense, environmental issues with Tran boundary dimensions represents challenges to Sudan. The challenging issues identified are the following:

-Impact in water quality due to soil erosion as result of the deforestation-taking place, and pollution from industries and other activities

-Loss and degradation of wetlands

-The need for cooperation to protect key plant & animal species

-The need for early warning systems

-Spread of water hyacinth and other aquatic weeds, which hamper navigation along river Nile and has adverse impact in the ecosystem

-Spread of water borne diseases

Addressing these issues, require coordination of efforts, awareness raising, and sharing of information between riparian countries.

The NTEAP provides strategic environmental framework for the riparian countries to address these challenges. The project consists of six components. The objective of the EE & A component is to raise the general awareness of the public sector with regard to these common environmental issues of concern. EE & A project lead specialist will deal with the details of objectives of this program in the presentation.

As long as he project is targeting the future generations, working with schools and universities will represent a major part of activities of the component.

In our invitation for the workshop, we were very much concerned with representation of institutions, which represent key stakeholder in this activity. Initial contacts & meetings with officials of those institutions and the fruitful discussions were very helpful in organizing for this workshop

Now I will leave the floor to Dr. Nadir Awad for official opening of the workshop.

Thank you all for accepting this invitation to participate in this workshop.

II. Official Opening Remarks by Dr. Nadir Awad Secretary General CHCENR and Chairman NTEAP Steering committee

Our Hon. Guests Mr. J.B. Collier and Ms Astride, The RPM, Ms Hanan Mutawkil Representative of UNDP, Distinguished experts, representatives of ministries, NGOs and Universities

I would like in the beginning to welcome you and thank you for your coming and participation in this important workshop in environmental education & awareness as one of the activities of the Nile Tran boundary Environmental Action Project.

Despite the Nile huge natural resources and rich cultural history, most of population is living in poverty, which is mainly a result of the deteriorating environment due to overexploitation of the natural resources, which represents the base for the sustainable development.

Poverty reduction is not possible without conserving the environment and maintaining the ecological balance in the basin, which guarantee the sustainability of the natural resources for present and future generations.

Economic & technical cooperation between Nile countries started long time ago, and this type of cooperation developed in recent years to include the environmental issues and management of the natural resources. The riparian countries realized the importance of cooperation for their common & mutual benefits to achieve the sustainable development in their countries. This cooperation reflected in the establishment of Nile Basin Initiative in1999, as transitional mechanism, where all riparian countries enter in a partnership with objective of alleviating poverty and enhance the economic development in the region.

The strategic program of the initiative comprises two major components, namely the shared vision program and subsidiary action program. These two programs were prepared within the Nile Basin Initiative by the riparian countries with assistance of the international institutions.

The shared vision program comprises seven projects, and the Nile Transboundary Environmental Action Project is one of the most important projects from those projects. The HCENR contributed to the preparation of the first document to this project. Sudan was selected to host this project, and the government of Sudan represented in the HCENR & Ministry of Environment provided and maintain this building in which we are conducting this workshop today, as head quarter for management of the project. The building inaugurated officially by his Excellency President of republic of Sudan on may twenty-nine 2004. the first steering committee meeting for the project took place simultaneously with inauguration and project launch. The first steering committee meeting approved the project annual plan for the rest of year 2004, which included the activities under the different components of the project, where this workshop of today in Environmental Education & Awareness represents one activity of project components.

The HCENR is continuing its efforts, that the issue of environmental protection became major target in all development strategies and plans in Sudan. Sudan ratified and signed most of protocols and international agreements in connection with environment. In the area of international Cooperation the HCENR, many projects are implemented and under implantation. In almost all of those projects, the issue of environmental awareness was a major activity. Definitely, the workshop will benefit from those experiences, reflected by participants who contributed to those previous projects

I would like to thank you again for your participation and wish you fruitful discussions and deliberations, and thanks overall for god

I declare the opening of this workshop

And god bless you

CHAPTER ONE OBJECTIVES OF THE EE&A WORKSHOP

Workshop objectives

The main objective of the workshop was to learn through sharing of experiences from the existing EE&A project component, identify gaps and plan for NTEAP EE&A collaborative activities.

Specifically the workshop is planned to come up with:

- ◆ An established network of EE&A practitioners within the country by forming WG with agreed TOR and office bearers;
- ◆ Learn from good case studies and if possible plant to scale them up as a way of implementation and delivering EE&A;
- ◆ Establish Transboundary EE&A opportunities and priorities for the country and specifically for the Nile Basin and ;
- ◆ Identified potential partners in the implementation of NTEAP EE&A project within the Basin.

To lead participants on ways of a achieving the objectives, the workshop facilitator (Maushe Kidundo) gave a presentation on environmental education and awareness within the Nile transboundary Action project. The presentation gave highlights on;

Environmental Education and Awareness component within NTEAP

To enhance awareness on the nature of environment and its inter-relatedness in the basin and how its effects on communities, through (i) enhanced public awareness & understanding of Nile Transboundary Environmental issues (ii) networking of secondary schools for project-based learning and (iii) piloting enhanced networking among Universities and research institutions.

Enhanced PA - activities

- Support the development and delivery of TB EE&A campaigns
- Regional training for EE&A practitioners
- Regional briefs for media editors & Environment Journalists on TB issues
- Exchange of environment Journalists & other media professionals between the riparian countries

Enhanced PA - approach

- Formation of working groups in each country
- Launch through a variety of delivery mechanisms
 - Media (TV, Radio, Newspaper, Websites, etc)
 - Institutions (religious, learning, social)
 - Organised groups (scouts, youth, women)
- Link with other SVP, components, projects

Secondary schools - activities

- Establish an electronic network of schools for TB EE.
- Build teachers capacities
 - Training, exchange tours, etc
- Support TB environmental projects within schools
- Organise Nile TB EE award scheme

Secondary schools - approach

- Issue a single contract to an experienced project based learning NGO.
 - Teachers training
- Schools selection by National EE&A working group
- Environmental school projects support through proposals

- Award scheme at National then regional level taking place annually.

Universities - activities.

- Exchange of EE professors, researchers and students between the Nile riparian countries
- Support the development of a university-level course on one or more Nile TB environmental issues

Universities - approach.

- Identify host universities within the basin
- Facilitate a regional meeting
 - Develop exchange formulae (undergraduate Vs Masters, Projects Vs Lectures, etc)
 - Develop a selection criteria
 - Commitment on lecturers' time and support
 - Develop work plan for the development of university course on Nile TB issues

EE&A Linkages

- SVP
 - Applied training - Egypt
 - Confidence building and stakeholders involvement - Uganda
- NTEAP
 - Knowledge management, Micro grants, Water Quality & M&E
- Country level
 - Relevant Government Ministries
 - Working group (all EE&A practitioners)

Why EE&A Working Group?

- Establish a Network of EE&A practitioners
- Forum for learning and exchange of information
- Assist in coming up with National EE&A priorities
- Lobby for positive EE&A change
- Take periodic stock of EE&A activities
- Catalyse dissemination and implementation of activities

The Working Group and NTEAP

- Assist in development of National priority activities and single out TB
- Identification of key implementation partners at national
- Assist in advocacy and networking
- A network (channel) for dissemination
- Share experiences and avoid re-inventing the wheel

This section presents a summary of all the country papers presented during the workshop. The topics of the papers were selected to give an overview of the countries status on environmental education and awareness. The papers looked mainly into the (i) legislation, policy, implementation and coordination strategy (ii) environmental education in institutions of learning and (iii) existing cases studies on EE&A campaigns, award schemes, and the role of media in promoting positive attitude change on environmental issues.

The detailed presentations are grouped under Annex 1. Below find a synopsis of the status of environmental education in Sudan.

3.1. Status of Environmental Education & Awareness In The country:

The paper gives a presentation on the institutional structure of environment and environmental awareness institutes. It further looks into the strategies, plans and programs concerned with environmental education and environmental awareness. The report then gives some recommendations on the national and regional level.

3.2. Environmental Education in Schools:

The paper presented a brief overview of history of introducing environmental education in schools, how international organization were involved, the reforms as result of conference in 1999 where environmental issues were taken into consideration. The presentation includes the objectives of the EE in the curriculum, the contents of curriculum in basic & secondary schools, the teaching methodologies & strategies adopted.

3.3 Environmental Education Courses in Tertiary Institutions of Learning:

The paper indicated that, environmental education started in Sudan universities as glimpses of crosscutting in the offered courses dealing mainly on hygiene, desertification, wild life and preventive medicine. By the end of sixties, courses related to environment started to appear in curricula of zoology, botany, geography, geology, public health, medicine and departments of education.

An integrated approach of EE is pristine in Sudan. Such an integration of multi-facet courses is lacking. However, and by wise direction of Ministry of Higher Education, a course of 'Principles of Environmental Sciences' is delivered in curricula of scientific departments.

Higher education policy and the legislation of universities and the goals of universities were effective in promoting the environmental education (EE) Programs and studies in provided in different specialized disciplines, educational capacity building and encouragement of research, all these legislated articles furnish a substratum for EE.

The paper & the presentation then provided information about the different institutions offering environmental education in Sudan, by type of degrees offered, courses delivered in different semesters.

The paper outlined the constraints & opportunities for regional cooperation and put recommendations for the future.

3.4. Public Awareness & Campaigns, The Experience Of The Sudanese Environmental Conservation Society (SECS):

SECS implemented various environmental information and communication campaigns targeting different stakeholders, for either SECS projects or projects sub-contracted by other independent projects. The message for the public is to raise their awareness, to affect policy-makers decisions and to encourage public involvement and participation.

SECS information and communication committee is composed of volunteers from different disciplines, who join the committee's desks: (press, radio, drama, exhibitions, inter-communication, video club, public relations). An awareness package developed to suit different stakeholders and to incorporate appropriate media on the national, states and community levels in close collaboration with a group of experts in media, environment, and social sciences and with the coordinator of the specified activity or project. Orientation meetings organized for the campaign team.

The target groups are multipliers (primary school teachers, media personnel, and opinion and community leaders), policy and decision-makers, women, farmers, pastoralists, and the public.

Identification of priorities and environmental problems, potential partners, environmental message, the messages and the most suitable mediums for communication are considered.

Channels of communication include Print materials, Audio-visuals, exhibitions, songs for children in a tape cassette, Interpersonal communication (forums, workshops, training workshops, community meetings, and video club, Puppet Theater especially for primary school pupils and rural areas, and drama for primary schools).

SECS played an important role in putting environment on the agenda of the government and the public at large. The constraints represented in the limited budgets & insufficient coordination with partners and other involved bodies.

Building the capacities of local communities and get the talents from the community to develop their own information traditions was a major recommendation in the paper.

3.5. NGOs Working with Schools, the Experience of SOS Sahel:

SOS Sahel UK began working with the local communities of the River Nile state in 1985 when the first project (the Village Extension Scheme) launched in Shendi district. In addition, further up the Nile at Ed Debba in three main agricultural areas Affad and Argi (1988) and El Gahaba 1990.

These projects offered the Nile villagers a wide range of forestry related activities aimed at natural protection against wind-blown sands and moving dunes. The projects demonstrated to villagers that planting trees is an effective way of protecting their lands and homes from sand encroachment

The initiation of working with the wider community also targeted women providing advice and training on tree planting and other environmental issues, which resulted in a separate project, the Women Forestry Project (WFP) in 1998 at Shendi and Ed Dammar Nile State.

The schools program in VES and WFP was not a separate activity, but was a core element in extension and awareness raising activities. The school Program implemented at eight selected schools. At all schools, the project launched training for teachers on the basics of environmental issues and simple techniques for raising school tree nurseries. In each school with ready sources of water, the project established a nursery managed by the school pupils under supervision of the trained teachers. Schools that lack water, the project provided hand pumps. The environmental awareness classes linked to the activity of tree nursery and planting.

Open environmental days attended by pupils parents organized at all schools, where the school pupils prepare articles and songs about the importance and value of trees. The project and the schools parents' Committees rewarded competitions on the best looked-after tree and the best drawings and songs about trees. Because of the described motivation at the selected schools, new Tree Friends societies established in these schools. Nearly all pupils in these schools enjoyed membership in these societies and were actively involved in.

WFP staff and the VEAs introduced simple lectures about the environment for pupils, and used simple means for drawing examples such drawings on posters and school demonstrations. The puppet theatre did have most impact in awareness rising. A proposal had been prepared for supporting the "The Nile Puppet Theatre" as a permanent institution, but unfortunately, committed do not found to support this initiative.

All successful environment projects depend upon the full cooperation of the local communities. SOS Sahel has developed formal and informal education and awareness raising program including drama and puppet theatre and different extension tools and materials to motivate and train farming families men and women and school children to work on voluntary basis to protect and rehabilitate their own means of livelihood. The long-term sustainable management of such difficult environment ultimately depends on the response of future generations.

The lack of basic services at schools such as water supply and proper fencing represent a major constraint for the school program. Other constraints reported in the following:

-Management problems at international and national such as fund raising problems (environmental issues being less funded).

-Lack of curriculum for Environment in the primary schools & trained teachers

-Sustainability after handing over projects to forestry authority

-Follow up of work during annual leave is a problem.

3.6. Media & Environmental Awareness Creation:

The paper presented analyses the situation. Historically mass media, particularly the radio and TV are under the control of the government whether during democratic or military regimes. Media system prevalent in Sudan has not been able in both cases to express the concerns of the country with its ethnic and cultural diversity and the particular needs of the region. The limited scope of the electronic media outreach and the weak circulation of the newspapers prevented the communication system from being part of the development structures of the regions. Regional media could have provided windows for projecting local and regional development problems and issues, but the weak budgets allocated for these media, the tight state governments control did not allow them to perform their basic duties in focusing in developmental, environmental educational and health issues.

The Sudan National Population Policy Document (SNPPD) stressed the need of raising awareness, knowledge and commitment at all levels of society on the importance of population-related issues to develop positive attitudes among intellectual, political and social institutions towards demographic issues in a bid to bring about just population distribution, ideal exploitation of resources and curb the rates of poverty as the environmental problem in Sudan is subject to the relationship between poverty and population growth.

However, the policy stressed the need for mapping out Information, Education and Communication (IEC) strategy to reach the grass-roots and inventing various advocacy tactics to gain the support of community leaderships and decision-makers in order to bring about the required positive behavior change with regard to the equal and just population distribution, ideal exploitation of the resources and appropriate handling of the environment.

The paper indicated that, although several media campaigns launched in the last two decades, knowledge and attitudes towards population-related issues were still weak. There is a need for conducting a nation-wide socio-cultural, media and audiences research as imperative for future planning of advocacy interventions. Such research is necessary for identify audiences of various media, their listening, reading and viewing habits, possession of radio and TV sets and access to newspapers.

The paper reported that, according to the Safe Motherhood Survey (SMS) National Report (1999), 44 percent of ever-married women in the 16 states of the northern part of Sudan, excluding the 10 states of southern Sudan, own radio sets, while relatively smaller proportion of 20 percent have TV sets. The report, which took a sample of 16,000 households, 1060 from each state, revealed that about one-third of rural women possessed radio sets but the reported percentage in urban areas is nearly twice this. More than half of the respondents in Khartoum have a television set, while radio, the most commonly possessed item owned by less than one-third of women in Kordofan and Darfur states. Only one-third of respondents live in houses with electricity facilities. The situation is particularly abysmal in rural areas where only 11 percent live in houses with electricity. In this regard, position of respondents in urban areas is much better, as nearly half of them have access to electricity.

Results of survey on advocacy for population programs conducted by UNFPA and the Advocacy Project in 1999 on a sample of media professionals also presented.

In connection with environmental campaigns, the paper indicated that, the Sudanese Environment Conservation Society (SECS) has been playing the major role for producing and disseminating environment-related messages through the various mass media. SECS have succeeded to explore many entries to access the audio-visual and printed media in a bid to address a variety of environmental problems. In connection to the audio-environment related-messages, the SECS has been organizing regular radio programs, in collaboration with the Sudanese Radio and TV Corporation on various environmental issues. The weekly program titled "We and the Environment Friends" aired over the National Radio every Tuesday, highlights the environmental news and sheds lights on crucial environmental problems.

On the other hand, TV programs, on environmental issues were scarce and delivered sometimes on irregular basis. They are usually featured special events (e.g. sports games, Environment day, School fairs, Tree Day etc...).

This situation was not restricted to TV, which government-controlled channel and stymied by politicians patronizing and possessive attitudes, but transcended them to the newspapers. Although, most of the existing press is independent newspapers, Editorial Boards tend always to publish exciting political issues to attract more clients turning deaf year to developmental articles including environmental issues. The SECS used to spoon-feed certain daily newspapers by preparing an edited specialized page highlighting environmental messages. In most cases, these pages (published on weekly or monthly basis) sponsored and paid by the SECS and its donors.

The paper highlighted the role of the Population Communication Centre (PCC) of the Ministry of Information. The centre is receiving support from UNFPA. PCC developed and produced various environmental media messages spanning audio-visual and printed materials. Specifically the PCC designed and produced during this period four radio dramas aimed at raising environmental awareness among the population. The drama messages covered air and water pollution, hazards of desertification, and population growth and its impact on environment.

Regarding the visual materials, the PCC have been producing TV spots on various environment-related issues. The PCC also is producing "People and Life" TV magazine. The magazine aired by Khartoum State TV Station. The PCC organizes, among other population-related issues, seminars and workshops on environmental issues for traditional leaderships and tribal chieftain on state-level.

The paper underlined the concepts and principles of information, education & communication (IEC) and advocacy

Two methods of awareness-raising with activities leading to specific two outputs should be adopted throughout the process of enlightening the population on environmental issues. The first output is that targeted areas should have sustainable access to information about environmental conservation. Activities identified in the following:

- Conduct baseline surveys to identify the level of community awareness.
- Organize Training of Trainers (TOT) workshop for community elite on the methods of communication/ advocacy skills.
- Identify potential NGOs and CBOs, which will work in partnership with the community on environmental issues.
- Provide NGOs and CBOs with audio-visual equipments and other resources for community mobilization and sensitization.
- Develop the IEC materials, radio and TV programs, video films and other publications and distribute them to the target groups.
- Conduct community debate in target areas through the NGOs and CBOs partners.
- Develop and disseminate pamphlets, booklet, posters and newsletters on environmental awareness to the civil service, university students, boys scouts and girls guides etc.

The second output aims at gaining the support of senior government officials, tribal and religious leaderships as well as civic society groups via carrying out the below activities:

- Organize seminars and workshops at national and state level to raise awareness of legislatures, community leaderships and planners and encourage them to advocate for the prevention of the environment.
- Set up national forum to coordinate local, regional and international efforts and expertise.
- Provide traditional leaderships with up date information based on healthy environment.
- Share experience with other countries.

3.7. Issues Raised In Papers Discussion:

- Coordination is required; the group is required to coordinate with concerned institutions
- The high council structure is weak & must be strengthened
- Attracting the private sector is important,
- There is a lack of environmental awareness national strategy, programs and budget allocations in government budgets & plans. Sudanese Environmental Conservation Society is developing strategy every 6 years
- Environmental laws should be developed & reinforced
- Environmental awareness should address policy makers
- Institute of environmental studies is one of the oldest institution specialized in environmental education since the early seventies collaborates with different institutions, conduct research, & offer different degrees levels.
- There is a need to enhance cooperation between the ministry of education & national NGOs, NGOs can play an important role in EE & A in schools curriculum & programs
- Support of other ministries concerned, in particular, ministry of irrigation and ministry of energy are required in environmental research and in EE & A
- There is need to introduce a general course in environmental awareness in all colleges of universities & institutions.
- Population Communication Centre of the Ministry of Information & the Population Media Centre can be involved, especially in providing specialized training.
- There is need for assessing all materials in environment in school curriculum in a comprehensive study

- Special consideration required to the issue of peace, cultural variation and related problems in curriculum reforms
- National important issues are not receiving enough consideration in universities curriculum & research.
- Issues identified such as the issue of Jongolei Canal; previous study of canal was only socioeconomic study and did not take into consideration wildlife aspect.
- Environmental issues in the Nile identified in the report; there are other issues not considered such as spread of mesquite tree and its positive & negative impact.
- There is need to institutionalize the EE & A through a formation of body within the high council for environment
- Curriculum development can have major impact in unifying the population by improving the education system.
- Media institutions hampered with independency, and a lot of bureaucracy takes place, there should be some sort of independency
- The 1993 workshop represent start for curriculum development in schools
- Red Sea environmental project work with school and produce the school bag
- The sustainable development project (capacity 21) introduced EE in three universities; the experience should be taken into consideration & evaluated
- Media practitioner should be trained and their capacities build in environmental issues, the experience of UFPA can be useful, this will include programmers. producers, media officers in he states.
- The role of TV is very effective in delivering the media messages
- TV & radio programs should be evaluated through research
- Programs are required to be associated with internet, since children and youth are fund with internet, this can be stared with some schools
- Handbook guide registering all media practitioners & specialists is needed

4. RECOMMENDATIONS:

4.1.Recommendations From Group Discussion:

The participants in workshop worked in three groups in session three after paper presentations & discussions, and provided with guidelines for preparing their presentation in the tree themes selected for their work. The three groups presented their work to workshops participant in presence of workshop facilitator who guided the discussions. The outcomes from presentations after discussion are the following according to the three themes of group work selected:

**CHAPTER THREE
SETTING NATIONAL EE&A PRIORITIES**

I. Tasks

The facilitator informed the participants on the importance of coming up with EE&A national priorities. Through a presentation he guides the participants on how to effectively come up with activities which can be implemented. The group discussions will focus on three thematic areas:

Group 1. Enhance public Awareness

The group to look at

- Campaigns
- Information (EE & A materials)
- Training of trainers

Group 2. EE & A within institutions of learning

The group to look at

- Secondary schools
 - Curriculum
 - Environmental activities and awards
- Tertiary institutions
 - Exchange concept
 - Course development

Group 3. Networking

The group to look at

- Working group
 - Role - TORs draft (add or delete)
 - Composition
 - Frequency of meeting
 - Sustainability
- Media
 - List of activities

II. Formation of groups

The groups were formed in a participatory process. First participants volunteered where they could contribute effectively. To balance the numbers in each group a few people were move to more appropriate thematic areas.

III. Presentations and Discussions

A minimum of four hours was given for discussions and preparation of group presentation. For easy of compiling and getting relevant information, guidelines were issued on the presentation format as follows;

| Problem | Target group (audience) | Activity | Implementation strategy | Key implementers (partners), | M & E How and who | exist strategy (sustainability) |
|----------------|--------------------------------|-----------------|--------------------------------|-------------------------------------|------------------------------|--|
| | | | | | | |

Group 1. Enhanced Public Awareness

Problems

The group summarized the problems and actions required in the following table

| | | |
|---|--|--|
| | 1. Institutional: -Strengthening -More involvement -Coordination -Collaboration -Legislation | -Enhancing -Training & acquiring of information -Training & acquiring of information -Training & acquiring of information -Enhancement |
| | 2. Popularization: -Production -Dissemination -Collaboration -Independent Institutions -Sustainability -Monitoring & Evaluation -Impact assessment -ICP input output participation | -Campaign, Training & Actions -Campaign, Training & Information -Campaign, Training, & Information -Campaign & Training -Training -Training |
| 3 | Networking: -Government, NGOs, CBOs, NGLs, -Code of conduct -Exchange of experience (electronics) -Linkages | -Training, Information & Actions |

Recommendations:

The group identified the following recommendations:

- Social mobilization and ensure of community participation and behavioral change
- Develop communication strategy to incorporate lobbying and advocacy methods
- For sustainable communication continuity there is a need to build the capacities of local communities and get the talents from the community to develop their own information traditions.
- Strengthen coordination & collaboration between partners
- Seek & create funds to ensure sustainability
- Strengthen the unit of public relations and communication in the High Council of Environmental & Natural Resources
- Encourage independent groups to develop
- Encourage environment related Activities in schools
- Create a mini council from HCENR, Sudanese Environmental Protection Society (SECS) & Ministry of Education to follow up and advice in environment education and awareness materials and means
- Involvement of private sector in the production & publicity of media
- Seek regional and international links to promote production, exchange materials and experiences
- Develop training plan to cover more inter mediate audience specially traditional ones like imams, Clergy men and local dance and singing groups
- Media projects shall observe the project cycle with special care for monitoring & evaluation

Group 2 Environmental Education & Awareness within Institutions of Learning

General Education

- Conduct baseline study to assess introduction of environment in school curriculum
- Specify a minimum level of environmental awareness is required in general education
- Make the necessary reforms in the curriculum to cope with local multicultural environment and with peace culture
- Capacity building & training of teachers at all levels
- Improvement in schools environment with respect to renovation of buildings, provision of facilities, sanitation, provision of water & electricity, and improving teacher's socioeconomic status
- Include more environmental related activities outside classrooms to support the theoretical part, such as cleaning & planting of trees & ornamentals
- Continuous monitoring & evaluation of curriculum development
- Cooperation between the NGOs, the government & the private sector in environmental education & awareness in schools

4University Education

- To conduct a general assessment of environmental education in curriculum of tertiary institution
- To create common concept for introduction of environmental issues in curriculum development in the universities which takes into consideration the variation in different environment & culture prevailing in the country?
- Tailor research to address environmental problems in Sudan & the issue of sustainable development.
- The impact of development of oil industry taking place in Sudan requires special consideration
- Enhance the cooperation & coordination between institutions & universities at the national, regional and international level.
- Strengthen cooperation with NGOs in projects, which serve the sustainable development & the environment
- Environmental education should consider peace building & conflict resolution issues
- Capacity building of staff including technicians

Group 3 Networking

A. The National EE&A working group

Composition

The meeting agreed in the formulation of the EE & A working group representing from different entities as follows:

| | |
|--|---|
| High Council For Environment & Natural Resources (HCENR) | 1 |
| National Project Coordinator (NPC) | 1 |
| Ministry of Irrigation & Water Resources (TAC Member) | 1 |
| Private sector | 1 |
| Ministry of Education | 1 |
| Curriculum Development Centre | 1 |
| Ministry of Agriculture (National Forestry Corporation) | 1 |
| Ministry of Higher Education (Universities) | 1 |
| Media | 2 |
| Civil Societies | 2 |
| Energy sector | 1 |

The Working Group's Terms of Reference

- I. Catalyze Environmental education and awareness activities within the Nile basin as lessons for the country
- II. On an annual basis develops and implement national action plans with emphasis on Tran boundary activities for the basin.
- III. Lobby Governments and civil societies to support new and innovative issues on environmental education
- IV. -Update the country status on environmental education and awareness issues
- V. Hold annual EE and awareness workshop to review progress and plan for activities for the coming year and exchange of information, ideas and document lessons learnt
- VI. Disseminate lessons through participation in different forums and effective use of print and electronic media.
- VII. Ensure that accurate and correct information reaches the intended target group active information relay pathways
- VIII. Highlight national and Tran boundary EE and awareness issues that could facilitate behavioral change
- IX. -Actively participate on World Environmental days to campaign on various issues
- X. -Lobby for curriculum change to incorporate EE into all levels of formal education
- XI. Carry out periodic assessment on the status of EE & awareness within the country
- XII. Design criteria for the selection of pilot activities on EE & A

Frequency of Meeting Of Working Group

The working group will have regular meetings in beginning of each quarter of the year. Working group can hold emergency meetings if required

Sustainability of Working Group

To achieve its sustainability the working group should be hosted by the High council of Environment & Natural Resources and a secretarial should be at the project management unit.

B. Media Activities

Media activities will include:

- Radio programs
- TV programs
- Brochures
- Posters
- Establish page in one or more of the newspapers

- Journals

C Information Exchange

- Establish a database, which will provide information in institutions & experts
- Exchange of visits among Nile Basin countries
- Joint workshops to exchange experience between Nile basin countries
- Joint research in transponder issues
- Publish a journal on EE & A and experience of different riparian countries
- Lease with relevant international institutions

CHAPTER FOUR CLOSING CEREMONY

I. Closings Remarks by Coordinator National Centre for Curriculum Development & Research, Ministry of Education



Dear participants, please allow me to express my impressions about this scientific gathering, which was intended to address one of the very important issues in present time, which is the environmental education. I would like to express my impressions in the following

1st: I was really impressed by the efforts done for organizing for the workshop. The workshop was

very well prepared & coordinated. This resulted in that, all participants make good use of time of workshop in useful discussions and adhere to the timetable prepared by workshop organizers and agreed upon by participants at beginning of workshop

2nd: The papers were & presented in workshop in scientific basis and logical in presenting the facts and provided good basis for the discussions

3rd: The issues were seriously discussed by participants and provided more input to the topics of discussions, and those who presented the papers accepted with open hearts criticism, which was good attitude for planning for next steps

4th: The objectives of this gathering were to address the issue of Environmental Education & Awareness, the organizers very successful in deciding in working groups and topics for each working group. The groups did a good job and came out with the appropriate recommendations based on experiences and knowledge's of group members.

I would like again to thank the organizers of in particular the project coordinator, the lead specialist and secretary general of High Council For Environmental & natural Resources for the good hospitality and for giving the chance to the scientists and experts to contribute in this well organized and fruitful work by providing their experiences and knowledge, which contributed to achievements of objectives of this workshop.

I wish you all success

II. Workshop Evaluation

Positive Aspects

- √ Good exercise & brainstorming
- √ Logical representation of participants in the workshop
- √ Objectives & components of project were clear & forward and very good presented
- √ Good management of workshop
- √ Different from other workshops attended, the working in groups was very useful
- √ Presentations & discussions were very clear & scientific
- √ Participation
- √ Provided an opportunity for experts in environmental education & awareness to meet & discuss very important issues
- √ It was a very stimulating workshop
- √ Participation was very good

- √ Awareness of importance of identifying and solving environmental problems within and outside the country
- √ The subject of workshop (Environmental education & awareness) is one of the important issues for Sudan, because of its relevancy for establishing an effective environmental education & awareness program and introducing the environmental aspects in curriculum development in schools & universities
- √ Multidisciplinary participation
- √ Knowledge sharing
- √ Scope our vision to the project
- √ Establishment of environmental education & awareness working group
- √ The first environmental education & awareness workshop done

Negatives & suggestions

- ❖ I wish that if the papers were jointly prepared, the quality of the papers then could have been better
- ❖ I wish the deliberations of workshop documented
- ❖ Most of participants can explain themselves in English, but this is not the case for others, so special arrangements are required for provision of translation I such workshops
- ❖ The time allowed for discussion was not sufficient
- ❖ Organization
- ❖ The papers presented should be distributed to participants two or three days a least before the day of workshop
- ❖ Time management needs improvement especially in first day
- ❖ The papers were not enough; suggest another workshop to discuss more topics
- ❖ Participants need to adhere to time
- ❖ Shortage of time and not enough resources allocated to such important workshop
- ❖ Future meetings & other national workshops should took place in other different cities along the Nile and participation of other stakeholders should be broaden
- ❖ The workshop was supposed to highlight examples done from other countries

III. Workshop Recommendations

Summary for a Plan of Action

The recommendations from papers presented, discussions and group work are summarized in form of plan in the following:

| Problem | Target group | Activity | Implementation strategy | Partners |
|---|-------------------------------|--|--------------------------------------|----------|
| Support of government & communities | Government, community leaders | Seminars & workshop, national & state | | |
| | Government , NGOs , CBOs | National forum creation | | |
| | Working group | Develop TOR for group | | |
| | Working group | Strategy & plan | | |
| | Government & leaders | Provide up to date information to leadership | | |
| | Government, NGOs, CBOs | Share experience with countries | | |
| Awareness of target groups | | baseline survey of communities awareness | | |
| Involvement of communities | | Assess community needs | link to income generating activities | |
| Number of NGOs & CBOs involve in EE & A | NGOs & CBOs | Baseline assessment of | | |

| | | | | |
|--|---------------------------------|--|---|-----|
| is limited | | capacities & | | |
| | NGOs & CBOs | Identify potential NGOs & CBOs | | |
| | NGOs & CBOs | Equip NGOs with audiovisuals | | |
| | | Develop IEC materials | | |
| | | conduct community debates | | |
| | | produce booklets, pamphlets, brochures | | PCC |
| | NGOs & CBOs | Build capacities of NGOs & CBOs | | PCC |
| Use of traditional communication system | Community leaders | Training of trainee | Should reflect country ethnic & culture variation | |
| Support for established groups & secure continuity of employment | Media groups (puppet, singing.) | | Involve government & private sector | |
| Private sector not involved | Private sector | | | |
| Independency of media | | | privatization | |
| | | | | |
| Environmental education in schools need assessment | | Baseline assessment of curriculum | | |
| | | | make necessary reforms to reflect variations | |
| | | | | |
| Schools environment & resources | Teachers & students | Provide necessary services in schools | | |
| Lack of trained teachers | | Training of teachers | | |
| | | Environmental activities in schools, planting cleaning | | |
| | | | | |
| Lack of linkage of CBOs with government | | | | |
| Allocation of budgets | | | | |
| | | | | |
| Lack of comprehensive information on courses offered in universities | | Baseline assessment of courses offered | | |
| Lack of standard module for EE both for national & regional | | Develop module | Standardization of teaching methods at regional level | |
| | | Initiate research in national priority issues | | |
| Regional cooperation | University staff & students | Establish networks | | |
| | University staff & students | Regional visits & workshops | | |
| | University staff & students | Trans boundary cases for study | | |

| | | | | |
|--|--------------------------------|-------------------------------|--|--|
| | University staff & students | Capacity building of staff | | |
| | | | | |

CHAPTER FIVE APPENDICES

I. Annex I: Papers Presented

Environment Education and Awareness in Sudan By: Dr. Musa Alkhalifa

1. Introduction:

1-1. This brief report aims at presenting the institutional structure of environment and environmental awareness institutes. It will further look into strategies, plans and programs concerning themselves with environment education and environmental awareness. Based on this the report shall arrive at some recommendations on the national and regional level.

1-2. This report is faced by the problem of evaluation that is because both environment education and environmental awareness are continuous and contributed to by a number of intuitions and individuals. This made the process of carrying a reliable evaluation job on the delayed shelf.

1-3. This report will treat environmental education briefly. It will be treated only as it relates to environmental awareness and or complementary to it.



2. Institutional Setup

2-1. Environment administration started sectoral and went on for quite some time. It was distributed among a number of sectoral administrations i.e. Forestry Administration, Natural Resources Agency, The Ministry of Agriculture, Ministry of Health and Land Use Committee. This resulted in environment concerns being treated sectorally, it follows that environmental awareness being treated sectorally under different titles e.g. Agricultural Extension and Forestry Extension. The same applied to education where the environment education, namely, did not exist in spite of the fact that issues relating to the subject were spread into rural education, geography and natural science etc.

2-2. As a result of Sudan's participation in Man and Environment Conference, Stockholm 5-16/6/1972 Sudan delegation to the conference came up with the conference recommendations. Item 19 recommends the establishment of a permanent Council for Man and Environment affairs. This was followed by the African Study Group on environment recommendation to establish national institutions the administration developed starting with the National Committee for Man and Environment Affairs as part of the National Council for Research to settle as the Higher Council for Environment and Natural Resources (1992). (HCENR) which was established with a mandate as the higher federal authority coordinating and consulted in environment affairs. As part of the mandate (HCENR) is to establish State Councils for Environment (SCEs). (HCENR) is the institution responsible for strategic planning and policies concerning environment and natural resources. (HCENR) is further responsible in coordination with specialized administration to develop legislation, carry and encourage and or promote scientific research in addition to raising environmental awareness. (HCENR) was established as federal authority affiliated to the Presidential Administration and chaired by the President.

2-3: By the Presidential Decree (49) a federal ministry for environment and tourism was established. (HCENR) was affiliated to the Ministry of Environment and Tourism (MOET) with the same mandate of its establishment.

2-4: on the other hand, in the field of voluntary environment effort the Sudanese environment conservation society (SECS) is widely considered as the mother environment and voluntary work society. (SECS) defined its objectives in: environment protection, promotion of popular participation in achieving sustainable development and public awareness. It has over 100 branches across the country.

In the same general direction the Environmentalists Society (ES) was established (1986) in spite of the fact that (ES) is relatively young but never the less it is participating in environmental awareness efforts appreciably.

2-5: on the international level the German Fredric Ebert (FE) established (1976); its mandate is to support development efforts especially human development and training for less educated groups. Fred rich Ebert collaborated with (HCENR), (SECS), (ES) in a number of activities in the areas of training and awareness.

3. Information, Communication, Participation (ICP).

3-1: The term awareness is an abstract term using (ICP) instead of awareness puts the report more on the operational side. If awareness is the product of information and communication and if awareness is expected to lead to effective participation then the breakdown allows us to study the components i.e. information communication and participation more operationally and quantitatively.

3-2: Since the establishment of the sectoral administrations related to the environment though not namely, e.g. forest and agriculture extensions there were programs. That could be described as scattered and sectoral it may communicate information and seek participation in environment concerns without necessarily having this as an explicit goal.

3-3: With the establishment of (SECS), its collaboration with (FE) and coordination with (HCENR) with funding from German Economic Development (DED) in late 80s and United Nation development Program (UNDP) mid (90s) efforts in the area of environment awareness started to take shape and gain sustainability. It started being defined as an area of target concern. Collaboration, coordination and funding created the base for the strategy adopted by the participants. During this period a number of awareness programs were implemented successfully including prints, radio broadcast, television, poster theatre and forums.

3-4: Starting (1996) (HCENR) housed as an implementing agency 4 projects namely, Support for Strategic Planning for Sustainable Development and Environmental Protection, Climate Change, Biodiversity and Dindir National Park Development Project. These projects were co-funded by Sudan Government and international agencies. Since each of the projects had a component of awareness coupled with available funding and the foundation for implementation based on the collaboration and coordination was established the ground for successful work was paved.

4. General framework and priorities

4-1: Based on this institutional structure ranked on establishment:

- a) (SECS), long term experience, wide spread branches, strong interrelations and implementation capacity.
- b) (FE), International relations, funding.
- c) (HCENR), Government link, funding and implementation.
- d) (ES) Implementation and social dimension.

4-2: The general framework and priorities of the plan were based on three pillars:

- a) Sustainability of awareness programs.
- b) Popularization of awareness programs and collaboration with educational programs.
- c) Institutional and personal capacity building.
- d) In order to achieve sustainability a steering committee was found. Its representatives of major participants in the field of information/ communication and education were selected. The steering committee comprised of representative of, Sudan Broad casting Survive, specialized councils, experts NGOs and NGIs. The committee looked into the four years plan 1996- 2000, defined roles and participants and defined monitoring and evaluation process.

Considering sustainability the committee recommended the following as mean to strengthen the implementation and obtain the objectives of the plan.

- Involvement of more NGOs, Academic Institutions, Government Administrations in order to build its capacity.
- Training of intermediate audience.
- Great self initiatives groups e.g. School children.

Considering item b) popularizing awareness programs, the plans were to cover all Sudanese Society sectors and use all available media and include traditional media e.g. Hakamat, Mosques, Shiekhs and Sougs.

On the other hand and in order to link the awareness programmes with other programmes, the plan opened an avenue to the private sector and carried environment projects in basic

schools and trained teachers in addition cooperation with school administrations to establish environment societies in schools.

4-3: To arrive at lessons learned from the process the plan was accompanied by a monitoring and evaluation program. Due to some, obstacles and constraints the evaluation program did not quite achieved its set objectives. Never the less some results were reached. To compensate for that graduate student were encouraged to carry evaluation studies for the program. A number of studies are in process.

One study was: The Environment Informative Message in the public media, an analytic study for: Print, Radio and Television by Nawal Husien, Institute of Environment Studies.

4-4: The priorities set for the plan and implemented were; environment and sustainable development broken down into: health, tree planting, school environment, woman, poverty, legislation, drought, desertification and migration.

5. Implementation

5-1: In accordance with the three pillars on which the plan was set and the priorities of the plan the approach to implementation and targeting was the target group as a key to the appropriation of the medium.

5-1-1: Group of special interest:

5-1-1-1: Individuals and institutions related to the issue of environment.

Medium1: Elbeaa Journal.

Distribution: Scientific Journal by- annual, four- color cover, 72 pages, A4, publisher (HCENR).

Product: 2 Issues published.

Medium2: sustainable Development Bulletin.

Description: A Bulletin, two color cover, half A4, arrange 20 pages, published in time with (HCENR) major activities.

Product: 6 issues published.

5-1-2: Socio- cultural clubs:

Medium: Lectures, for video shows and exhibitions.

Objective: Introduce a concept, facilitate discussion and prepare for participation.

Product: Different activities held at cultural centers and sports clubs across the three towns

5-1-3: Societies and Institutions

Participation in capacity building for societies and institutions active in the field of environmental awareness.

Product: A specialized society Environmental Awareness Society was formed.

The (HCENR) in collaboration with (SECS) funded by (UNDP) planned and implemented three environment and development campaigns in three different states; Kordufan, Gadaref and River Nile.

5-1-4: Leadership

In accordance with the basis of the plan i.e. sustainability, popularization and coordination a training plan targeting education and communication personnel was put together. The plan covered those belonging to, NGOs, Government and NGIs. The program consisted of information and communication technology, introduction to environment and development and voluntary work.

Product: Three- day training courses for:

- Cartoonists.
- Directors, Radio and T.V. programme.
- Creative writers and plastic artists.
- Columnists.
- Basic education teachers.

5-1-5: General Public

Three categories of posters were designed, posted and or distributed.

Product:

- a) 12 signs were posted in high traffic roads, road junctions and dense foot traffic areas.
- b) In El Gadaref State movable signs and flags were designed and posted on buildings, cars and bicycles.
- c) Same in b) was applied to River Nile State.
- e) The River Nile State was the first state to implement the project' State Environment Week". A plan was put together the program contained:

1. Cover state special interest issues.
2. Use of multi media.
3. Covering all social sectors within the state.

In the same regard; general public, both Arab Environment Day and World Environment Day were celebrated annually from 1996- 2000. The average of the campaign period was one month. The coverage targeted to reach national level. The central issue of the celebration was environment awareness. Activities held in these occasions were:

- (SUNA) News Conference.
- Sudan T.V. Forum.
- Lectures and for a.
- Training.
- Foot ball games (Elbceaa Cup).
- Bicycle contest.
- Theatre.
- Children Songs.
- Exhibitions.

6. Information, Communication Participation

Environment Protection Legislation (EPL) issued (2000) called for ' linking environment concerns with development issues as a major objective. It also called for putting together a federal plan of action for awareness rising. The legislation further more recommended for introducing the environment and development in schools programmes. It also noted that an essential function of (HCENR) is to coordinate and participate effectively in environment and development awareness programmes and activities. Thus the issues of environmental awareness are now supported by (EPL) 2000.

In spite of the fact that a scientific reliable evaluation was not carried to evaluate these programmes, we still can find some indicators that were drawn from partial evaluation and observation.

6-1: Success in Collaboration:

- Successful implementation of plans.
- More Government, NGOs, GIs are involved more effectively.
- Self initiated projects emerging.
- More activities for (SECS) branches.
- (HCENR) is more involved.
- More initiative coming from communication media.

6-2: Training:

- More participation of those trained each in his or her field.
- Information and communication media more involved.

7. Constraints

- The constraints faced by the plan were limited capacity to produce communication media. Renting equipments for production purpose costs a lot and poses the threat of delay and other in conveniences.
- Coordination is still limited the project needs to draw more NGOs and Government as effective participants.
- Education is the sole responsibility of the ministry of education stronger coordination with the ministry shall be sought. There are over 150 sectoral laws and regulations on environment related issues, with (EPL) issued 2000, some gaps and or conflicting items may occur.

8. Lessons Learned

The implemented plan (1996- 2000) did not get reliable monitoring and evaluation. That was due the number of channels working and depending to a far extend on voluntary work which made attributing failure or success of a particular job to particular reference hard to reach:

- The private sector was not effectively involved. There is clear need to remedy this limitation.
- The coverage of all sectors of the Sudanese Society calls for introducing more agents in the process, creating more self initiating groups and strengthening and utilizing traditional communication media and methods.

9. Success Stories

Some of the success stories within this period, here are examples

9-1: Theatre:

Title: Environmental communication.

Objectives: Communicate basic concepts on environment and sustainable development.

Participants: Basic Schools children.

Activity: Performance (sing/dance).

Observation: Child involvement, public participation, carrying the activity independently.

9-2: Video:

- **Title:** Elmatoarat Story
Objective: Explaining the social impact of desertification.
Producer: Sudanese Environment Conservation Society.
Time: 23 minutes.
- **Title:** The stolen Kingdom
Objective: Explaining the threats to Dinder National Park.
Producer: Sudanese Environment Conservation Society.
Time: 23 minutes.
- **Title:** Dinder National Park
Objective: Explaining the Park's eco- system.
Producer: Sudanese Environment Conservation Society.
Time: 21 minutes.

9-3: T.V.

The show " man and environment" achieved some success during mid - nineties.

9-4: Radio:

The radio program introduced and prepared by the Sudanese Environment Conservation Society is a success in popularity and continuity.

9-5: Print:

- Weekly page hosted by a number of news papers proved success both in continuity and popularity.
- Variable articles, reviews and columns continue to be one the successful outputs.

10. Recommendations

- Evolve more partners. An NGO specialized in environmental awareness is probably the means to achieve this recommendation.
- Strengthen coordination and collaboration between partners.
- Seek and create a fund to ensure sustainability.
- Strengthen (HCENR) department of public relations and communication.
- Create a permanent committee to steer the process.
- An executive body to designate plans and follow the implementation may be elected from (HCENR) staff.
- Create an environment education committee.
- Encourage independent groups to get evolved.
- Encourage environment related activities in schools.
- (HCENR), (SECS) and the Ministry of Education create a mini council to follow and advice in environment education materials and means.
- (HCENR), (SECS) and the Ministry of Information evolve the private sector in the production and publicity of media.
- Seek regional and international links to promote production, exchange materials and experiences.

- Develop training plan to cover more intermediate audience especially traditional ones like Imams, Clergy men and local dance and singing groups.

Environmental Education in Schools

Mohamed Abdullah Araki

1. Educational Innovations:

The twentieth Century characterized by a marked awareness of certain issues and related problems. Those issues and problems are associated with population, health and environment. The problems pertaining to the above said issues were generated - largely - by man himself. To solve these problems, man's attitudes and resulting behavior should change. A change, which can be brought about by education. Hence came the term educational innovations which refers to educating to acquire

Positive attitudes towards population, health and environmental issues.

International organizations and agencies, such as UNDP, WHO and UNFPA, became actively involved in this task. Typical projects and programs are represented by population education (UNFPA) and health education (WHO). In Sudan, the first and oldest of those projects was that of population education. Health education ranks second. Environmental education was seldom referred to in the schools programs because it was not introduced by any of the organizations mentioned before.

However, implementing those educational innovations was not, totally, a success. This is accounted for by the stability of the existing curricula (at the time) which had no room for the inclusion of new subjects. Therefore, their inclusion has to await the introduction of the new educational reform.



2. The Educational Reform and its Aftermath:

This reform was heralded by the Conference on Policies of Education, held in September 1990. It is of a great importance from the standpoint of curriculum development, for it set the Sudanese goals of education, proposed a new educational ladder (of eight and 3) and recommended an integrated curriculum for the basic education level and a new secondary school.

In respect to the environmental issues, the following goals and objective were stated:

1. Developing environmental awareness and acquainting posterity with the components of nature in water, air, land and space to appreciate them as God's bestowal and to conserve and use them for man's benefit (goal no.6).
2. Acquainting pupils with God's bestowal in the environment and train them to develop the environment, conserve it and exploit it for man's benefit (objective no.6 - Basic Education Objectives)
3. Developing student's environmental awareness and acquainting them with the components of nature in water, land and space to recognize favorably God's bestowal in it in a way that induces them to be active participants in its conservation, development and rational use (objective no.8 - Secondary Education objectives).

To implement the recommendations of that conference measures were taken to design and draft the new curricula for both Basic and Secondary Education. Naturally, there was a transition period in which the old curricula continued to be applied right to the end of the school cycle. That necessitated making a partial content revision, which implied introducing new fields of studies. Environmental studies were one of the subjects introduced during this period.

3. Incorporation of EE in Basic and Secondary Education Curricula:

In the early nineties, the second Population Education Project was introduced. It consisted of six domains. Population and Environment constituted one of them.

3.1. Objectives of Environmental Education:

The domains of environmental objectives can be stated as follows:

Knowledge: to help pupils and students gain a variety of experiences and acquire a basic understanding of the environment and its associated problems.

Awareness: to help pupils and students acquire an awareness and sensitivity to the total environment and its allied problems.

Skills: to help pupils and students acquire the skills for identifying and solving environmental problems.

Attitude: to help pupils and students acquire a set of values and feeling of concern for the environment and the motivation of actively participating in environmental improvement and protection.

3-2- Contents:

The contents of environmental education can be drawn from several parts of the curriculum. Two ways of exposing pupils and student to environmental education are practiced: to integrate it into the school curriculum or to present it as a separate discipline. In Sudan, organization of content in Basic Education differs from that of Secondary Education. In Basic Education, a type of a core curriculum is followed while in Secondary Education the single-subject pattern is followed. In both we have carrier cores and carrier subjects of the basic facts and concepts of environmental education. In addition, we have reinforcing cores and reinforcing subjects, which relate, functionally, those basic facts and concepts to their contents. That means that environmental education is infused in many cores and subjects of General Education Curricula. What follows is an outline of environmental education in both Basic and Secondary Education Curricula.

3-2-1: In Basic Education:

The carrier core in Basic Education is the core of Man and the Universe, which contains the facts, basic ideas and concepts of the Environmental Studies (Sciences, Geography, History and Sociology).

The Earth Spheres:

- The Atmosphere
- The Lithosphere
- The Hydrosphere
- The Biosphere

The Ecosystem

- the Physical Components
- Relationships among Living

Organisms in the Ecosystem:

- Competition
- Co-existence
- Interdependence
- Parasitism
- Preying

The Relationship between Man and Living Organisms

The Biochemical Cycles

World Environments

Sudan Environments

An Example of a Civilization in a Riverbank Environment

An Example of a Civilization in a Grassland Region

The Interaction between Man and the Environment (Modes of Life in Sudan)

The Negative Impact of Man on the on the Environment

Natural Resources :

- Permanent
 - Solar Energy
 - Wind Energy
 - water

Renewable Resources

- Animal
- Plants

Non-renewable R.

- Soil
- Mineral
- Fossil Fuel

Related Problems

- Air Pollution
- Water Pollution
- Extinction of wild life
- Deforestation
- Soil Erosion
- Intensive Exploitation of Resources

3-2-2: In Secondary Education:

Here, the carrier subjects are Biology and Geography

3-2-2-1: Biology:

The Environment

The Biosphere

Soil

Natural Environment

- Components of Solar Radiation
- Water

Organic Environment

- Competition
- Preying
- Parasitism
- Interdependence
- Co-existence

Population & Communities

- Ecosystems
- Food Pyramids
- Food Webs and Chains.

The Impact of Man on the Environment

- Pollution
- Deforestation
- Desertification
- Biodiversity
- Balance of Nature

3-2-2-2: Geography and Environmental Studies:

The Earth Spheres

Urbanization and Problems

The Environment

Environmental Problems of Sudan

- Desertification
- Soil Pollution
- Deforestation
- Threat of Extinction of Wild Life

International Problems

- Fresh Water Pollution
- Pollution of Seas and Oceans
- Air Pollution
- Earth Quacks and Volcanic Disasters

3-3: Teaching Methodologies and Teaching Strategies:

Teaching methods can be classified into two groups: the didactic and the participatory methods. The former methods are teacher - centered and are useful in imparting knowledge. The participatory methods are pupil or student-centered. Participants are encouraged to communicate with each other and practice problem solving. Since environmental education is an action - oriented innovation, the latter methods are the most useful.

As regards teaching strategies, the following can be recommended:

Small group discussion - large group discussion - role-play - value clarification- debates- quizzes - brainstorming - case studies.

Conclusion:

Environmental Education was introduced by Population Education Project. No other international organization or agency participated in developing EE in schools. However, appreciable activities were undertaken by the Sudanese Society for Environment Protection, notably in teachers' training.

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Environmental Education Courses in Tertiary Institutions of Learning in Sudan

Dr. Elhag Abu Gabr Elhag

Background:

The Nile system total surface area in Sudan, including other minor tributaries and lakes, covers ≈ 10 m acres. This area has been and is subjected to drought, soil deterioration and desertification, fresh water shortage, civil wars and social structure disturbances and intermigration, poverty and tropical diseases. This is in addition to land-based activities, introduction of foreign species and global warming.

Such an area, an intricate mosaic of ecosystem extending from arid areas to tropical forest areas, deserves an evolution of environmental education (EE) and awareness programs.

In Sudan the term environment appeared in relation to protection of the natural resources from deterioration leading to desertification or from man-impacts. Legislation of laws appeared in 1935 in forestry, fisheries and protected areas local ordinances. These were followed by soil conservation law in 1944.

However, environmental education started in Sudan universities as glimpses of cross-cutting in the offered courses dealing mainly on hygiene, desertification, wild life and preventive medicine. By the end of sixties, courses related to environment started to appear in curricula of zoology, botany, geography, geology, public health, medicine and departments of education.

An integrated approach of EE is very pristine in Sudan. Such an integration of multi-facet courses is lacking. However, and by wise direction of Ministry of Higher Education, a course of 'Principles of Environmental Sciences' is delivered in curricula of scientific departments.

It is in the policy of higher education and the legislation of universities and the goals of universities that EE finds a seat. Thus provision of programs and studies in different specialized disciplines, educational capacity building and encouragement of research, all these legislated articles furnish a substratum for EE.

Institutions offering EE:

Tables 1-7 show the courses offered by the different established universities in Sudan. It appears that EE is included as a part in courses such as natural resources and their management and environmental control in Gazeira University; environmental health, applied climatology, wild life management and conservation, environmental geology, arid and semi-arid environment and soil science conservation, environmental impact assessment, Sudanese environmental problems in Juba University; in AlNeelain University courses such as environmental studies and medical and economic entomology are also EE components; in Omdurman Islamic University the ecology course is spiced with EE aims.

However two universities stand ahead in EE, these are University of Khartoum and Omdurman Ahlia University.

Integrated courses of EE are taught in different departments and postgraduate programs (M.Sc - PhD) are offered (Table 9), different departments in the two universities offer courses on environmental sciences. Environmental law, environmental economics... etc in semi-modular units.

A noticeable feature in these courses, that there is no definite interim partnership or collaboration which support or sponsor these courses. The scattered collaboration met with is only personal contacts and willingness to help in releasing staff to qualify in the different areas of EE by the different stakeholders.

Main constraints:

- The main constraints on teaching and offering EE as a course is the lack of sufficient knowledge, technical know-how, research and capacity building of recognized trained teachers and lecturers.
- Hence, the lack of EE guidelines.



- The often mix-up of ecological and advanced ecological courses with EE course particulars.
- The lack of modular units approach in teaching EE and clear cut units of natural sciences, social science, emerging issues, case studies and interdisciplinary approaches.
- Lack of problem-oriented research and analysis of ecosystems which are closely linked to EE teaching.
- Lack of a common regional EE standardization.

Opportunities:

- Exchange of knowledge and raising capacity building of the stakeholder countries.
- Standardization of methods of teaching.
- Common modules for teaching in universities.
- Tackling cross-boundary problems by regional teams.
- Regional visits, brain storming meetings and regional workshops
- A regional network and focal points of information.
- Formation of flagship study cases and replicable Tran boundary phenomena.
- Identified partnerships and collaborators both nationally and regionally.

Recommendations:

- Standardization of common EE courses in the Nile basin countries.
- Prioritization of common case-studies in the Nile basin countries e.g. wild-life seasonal migration across-boundaries, River Nile hyacinth and other introduced species... etc.
- Regional networks of biodiversity studies, protected areas, Pan-Nile basin community participation... etc.
- Data-base generating unit serving national units and utilizing standard GIS and remote sensing courses.
- Developing and/or strengthening collaborative research relationships between African scientists and overseas partners through funding from PACOM*.

Acronyms:

PACOM: the Pan-African Committee for START[†].

START: The Global Change System for Analysis, Research and Training - which promotes regional Research networks, conduct research on regional aspects of environmental change, assess impacts and vulnerabilities to such changes, and provides information to policy-makers.

Public Awareness and Campaigns: Experience of Sudanese Environmental Conservation Society (SECS)

Siliman Mohamed Ibrahim

1. Introduction:

The Sudanese Environment Conservation Society (SECS) was established in 1975. Since the last twenty nine years SECS remained sincere to its main objective and message that addresses environmental awareness amongst all sectors of the Sudan.

SECS has witnessed quantitative and qualitative developments; from fifty members in 1975 to more than eight thousands, from three activities per year to more than a hundred, and from a society of academicians and elites to a growing popular movement; SECS almost covered the country with its one hundred branches i.e. Juba in the South, Dongola in the North, Kassala in the East and Kutum in the West. Along the White Nile, the Blue Nile, the Nile and their tributaries SECS established branches are : Juba, Malakal, Kosti, Madani, Al rematab, Singa, Al souki, Al rahad, Al geossi, Halfaya, Al gaily, Al dammar, Al akad, Sabnas island , Dongola and Karima.

SECS are governed by its general assembly which is held every two years and an elected executive committee of fifteen members and run by three major programs: education and communication, environmental rehabilitation and institutional strengthening.

Due to the absence of environmental information and communication strategy and the lack of awareness that links environment to development SECS shouldered this role within its capacities as an NGO closely collaborating with similar NGOs and relevant governmental bodies.

SECS implemented various environmental information and communication campaigns targeting different stakeholders, either for SECS projects or being sub-contracted by other independent projects, i.e. Gerighik, Strategic Planning, Biodiversity, Dinder National Park, Photo-voltaic Projects.



2- Objectives:-

The main objective of environmental awareness is to simplify the message into two tracks:-

- a) Towards the general public to raise their awareness despite the difficulty and dryness of the topics,
- b) Towards policy-makers who should be faced by media pressures to affect their decisions to take correct environmental actions, and to
- c) Encourage public involvement and participation.

3- Implementation mechanisms:-

SECS information and communication committee is composed of volunteers from different disciplines, who join the committee's desks: (press, radio, drama, exhibitions, inter-communication, video club, public relations). An awareness package is developed to suit different stakeholders and to incorporate appropriate media on the national, states and community levels in close collaboration with a group of experts in media, environment, and social sciences and with the coordinator of the specified activity or project. Orientation meetings are organized for the campaign team.

SECS identified target groups are: - multipliers (primary school teachers, media personnel, and opinion and community leaders), policy and decision-makers, women, farmers, pastoralists, and general public at large.

Identification of priorities and environmental problems, potential partners, environmental message, the messages and the most suitable mediums for communication are considered.

The purpose of communication differs according to the target group and consequently the medium used.

SECS utilized most of the known channels as follows:-

Print media: (newsletter for SECS members and branches, relevant NGOs and governmental bodies; brochures and pamphlets to highlight SECS, projects or special events addressing donors and selected audience; publications addressing policy-makers, academicians, university students and intellectuals; environmental pages in the daily newspapers).

Electronic media: (weekly radio programs "we and the environment" in the national and states radios reaching most of the population in remote areas; video films).

Audio-visuals: (paintings and illustrations where four workshops were accomplished and more than one hundred painters participated; exhibitions; songs for children in a tape cassette).

Interpersonal communication: (forums, workshops, training workshops, community meetings, video club, Puppet Theater especially for primary school pupils and rural areas, and drama for primary schools).

Media-mix: used in Gerighik, Al dammar and Rahad river villages (pls. see annex 1, env. caravan).

Opinion and community leaders: (SECS environmental forum and Al dein and Arkawit branches).

4- Achievements and lessons learnt:-

- ❖ - SECS played an important role in putting environment on the agenda of the government and public at large.
- Strengthened partnership with media, similar NGOs.
- Intercommunication is most effective when linked with rehabilitation projects or tangible needs of people.
- Round table meetings with government officials are fruitful for reaching to solutions.
- Incorporation of traditional cultures in the communication process.
- Establishment of a system for monitoring and evaluation.

5- Main constraints:-

- Small budgets affect the quality of work.
- Prior and timely contacts and coordination with partners and other involved bodies.

6- Opportunities and recommendations:-

- Expand the current practice of awareness activities which are limited to a flow of information and publicity and not on social mobilization, community participation and behavioral change.
- Develop the communication strategy to incorporate lobbying and advocacy methods.
- For a sustainable communication continuity there is a need to build the capacities of local communities and get the talents from the community to develop their own information traditions.

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NGOs Working with Schools: The Experience of SOS Sahel International UK

By: Kamal Mohi El Din¹ & Mohammed Abdel Mahmoud²

1. Background:

1.1 SOS Sahel Global

SOS Sahel works to improve the livelihoods of people living in poverty in the Sahel region of Africa, particularly through enabling them to manage better the natural environment in which they live.

SOS Sahel International is an associated voluntary agencies founded in 1976 in Dakar, Senegal. Member countries are Senegal, Mali, Mauritania, Burkina Faso, Niger, Sudan, Ethiopia and Kenya, Britain, France, Luxembourg and Belgium.

SOS Sahel UK is a registered charity, and member of the Sahel Alliance of Organizations specializing in the sustainable development of semi-arid and arid areas. SOS Sahel's mission is to effectively support Pastoralists and farming communities in expanding and improving livelihood strategies through complementary strategies, for example combining technical support with support for community-based organizations. We believe that local associations have an important role in policy engagement and in supporting their constituents claim their entitlements to access natural resources for a sustainable livelihood.

SOS Sahel International projects represent a long-term investment in the future of the Sahel. SOS depends on public support, through donation and covenants, to secure co-financing from the donors like the EC/EU, the UK ODA (at present DfID), and CIDA, National Lottery Charities Board, Comic Relief, Embassies and other trusts.

SOS Sahel has collaborated regularly with other development organizations, including UNDP, IFAD, Oxfam, ACORD, Ockenden International and IIED.

In addition to local component funds or contributions from the Government, and this in accordance to working agreement.

The Sahel region stretches across Africa from the Atlantic coast of Mauritania to Ethiopia and the Red sea. The word Sahel means the "edge" and it is derived from the Arabic term for the "Shore" or the edge of the Desert, and the name given to those countries that borders the Southern fringes of the Sahara.

The Sahel zone characterized with low rainfall, sparse vegetation and poor soils. This fragile environment is a home for millions of rural people that are in the front line against the expanding desert, which swallows up land and ruins livelihood and exacerbates famines and poverty.

1.2 SOS Sahel in Sudan:

In Sudan as a result of repeated drought cycles in the 1980's were the problems of desertification had been acute and had contributed to successive famines. One of the areas under the threat of desertification is the Nile Valley State and Northern State in the Northern Region where the desert encroachment has affected entire villages and is engulfing away fertile cultivable land.

The natural tree cover depletes every year yet replanting has been virtually non-existent. As the vegetation recedes, the desert sweeps in, burying houses, silting up the irrigation canals and speeding up the destruction of settled agriculture.

SOS Sahel UK began working with the local communities of the River Nile state in 1985 when the first project (the Village Extension Scheme) was launched in Shendi district. And, further up the Nile at Ed Debba in three main agricultural areas Affad and Argi (1988) and El Gahaba 1990.

These projects offered the Nile villagers a wide range of forestry related activities aimed at natural protection against wind-blown sands and moving dunes. The projects demonstrated to villagers that planting trees is an effective way of protecting their lands and homes from sand encroachment.



¹ Ex. Forester, worked with SOS Sahel in VES Shendi

² PD SOS Sahel UK, Sudan

The initiation of working with the wider community also targeted women providing advice and training on tree planting and other environmental issues, which resulted in a separate project, the Women Forestry Project (WFP) in 1998 at Shendi and Ed Damar Nile State.

2. Objectives of the project:

- To raise women's and pupil's environmental awareness about environment conservation and to enable them to participate in combating desertification.
- To improve management capacity of local communities for proper consumption and utilization of available natural resources.
- Involvement and formation of community based organization CBOs or Village Development Committees (VDCs) and participate in all project work aspects, jointly with related technical department.
- Protection of agricultural land for further production and villages' houses and community institutions.
- Establishment of extension and education unit and related tools and method.
- To train 60 women from 30 villages in the following activities:
 1. Establishing home nurseries to produce forestry, ornamental and fruit seedlings and to plant them inside and outside the house.
 2. Growing vegetables inside the houses for home use.
 3. Reducing wood/charcoal consumption by using improved stoves.
 4. Income generating by selling the surplus of the seedlings and vegetable production.
 5. To train 5000 women from the 30 villages involved in all the previous activities by the 60 VEAs and the assistance of WFP staff.
 6. To train school children to establish nurseries and to plant/protect trees in their schools.

3. Implementation mechanisms:

3.1 The Case Study: The Village Extension Scheme (VES) and Women Forestry Project (WFP):

Shendi district of the river Nile state is 170km to the north of Khartoum approximately, constituted by 2 provinces El Matamma and Shendi. El Damar is the head of the Nile state, about 320 km from Khartoum. The main occupation of people in the Nile state is agriculture and livestock keeping with a fractional percent working with different government public services.

The area is flat sandy soil intersected by more than 25 seasonal streams on the eastern side of River Nile that comprises most of natural forest reserves.

The whole area is within the semi arid and arid zone with a range of annual rainfall of 50 mm/an. to 200 mm/an.

3.1.1 Project activities in relation to objectives:

- 1- Establishment of village nurseries.
- 2- Establishment of community forests and woodlots.
- 3- Establishment of village shelterbelt
- 4- Formation of CBOs or VDCs
- 5- Formation of Women Committees (VDCs)
- 6- Establishment of school program
 - School nurseries
 - Planting of trees in schools
 - Formation of school societies
 - Schools drawing and painting environment related subject's competition.

3.1.2 Extension material and tools used:

- 1- Meetings, lectures, group discussions home visit, demonstration, X-visits.
- 2- Chalk board (black board)
- 3- Over head projector
- 4- Flannel board
- 5- Picture and photo exhibition
- 6- Cassette songs
- 7- Role play (or drama) puppet theatre
- 8- Films and video
- 9- Radio and television.

3.2 Schools program in VES and WFP:

The schools program in VES and WFP was not a separate activity, but was a core element in extension and awareness raising activities.

The school Program has been implemented at 8 selected schools and these are:

Shendi area: *El Tundub, Gadow, El Gubba and El Farahseen.*

El Damar area: *Banaet, El Basabeir, Goz El Halag and Gad Allah.*

At all these schools, the project launched a training for some interested teachers from each school on the basics of environmental issues and simple techniques for raising school tree nurseries.

At all schools with ready sources of water the project established a nursery to be managed by the school pupils under supervision of the trained teachers.

The schools that suffer from lack of water were supported with hand pumps such as the one installed by this project at *El Tundub* School. The other schools advantaged with a ready source of water were supplied with enough lengths of flexible fabricated polythene hoses to deliver water to the school nursery and trees.

At all the selected schools, environmental awareness classes had been done by the project. This activity linked with practical work at the school tree nursery and planting the schoolyard with trees.

Open environmental days were organized at all these schools where the school pupils prepare articles and songs about the importance and value of trees and appeals for planting more of them and their protection. Usually these days attended by the pupils parents and who else happened to be at the village that day. The project and the schools parents' Committees rewarded competitions on the best looked-after tree and the best drawings and songs about trees.

As a result of the described motivation at the selected schools, new Tree Friends societies have been established in these schools. Nearly all pupils in these schools enjoy with a membership in these societies and were actively involved in.

The WFP project worked with 26 schools, as some of the villages involved did not have schools. Their children studied in neighboring villages (7 villages). One school is under construction (*Goze El Halaq*), and other schools do not have compound walls e.g. *El Tondob* and *El Basabeir*, the latter was destroyed by the flood that makes growing trees in the school yard as fairly difficult.

WFP staff and the VEAs introduced simple lectures about the environment for pupils, and used simple means for drawing examples such drawings on posters and school demonstrations.

In *El Geliaa* village a big school nursery (capacity 750 seedlings) was established to serve the five schools in the village. However, due to water problems in the schools, most of the seedlings were distributed in the village to be planted in the houses, as there was no possibility of planting the seedlings' in the schools.

Hand pumps were installed at *El Abeidia* School for girls and *Hillat Younis* for girls where they also served the boys schools located close to the girl schools. Hoses were provided to *Banaga El Mahatta* School as they had artesian wells but the water network was not connected to the village.

It has been reported that the Program was most promising and sustainable, due to:

- 1- The well-established extension unit by SOS was handed over to FNC.
- 2- Most of the well-oriented and trained extension team members were employed by FNC.
- 3- The extension program at schools is of low overhead and low operation costs.
- 4- The awareness raising visual materials and tools has great impact; provided that it is part of the Ministry of Education program, which would provide support as needed.
- 5- The extension team introduced income generation activities for self-financing:
 - a- School timetable cards carrying a certain environment conservation message.
 - b- Calendar per month "paper" reflect some information about certain tree species.
 - c- Production of cassette and videotape of songs, table environment problems.
 - d- Establishment school societies singing group such as famous "*Napta Group*"

3.2.1 Achievement of School Program:

- 1- Conduct awareness raising program in more than 102 schools.

- 2- Establishment of school nurseries.
- 3- Planting out of trees in more than 102 schools
- 4- Formation of school societies.
- 5- Exchange visit and tour for singing group "Napta" to most of Sudan states.
- 6- Production of above information dissemination materials.
- 7- Establishment of 2 hand dug wells and installation of hand pumps in two schools.

Achievement of Activities up to 1993 and current situation 2004 (examples)

| Activity achieved | No. situation 93 | No. situation 2004 |
|---|------------------|------------------------|
| 1- Village nurseries | 8 | Collapsed- not working |
| 2- Village shelterbelt | 13 | 7 functioning |
| 3- School program | 32 | more than 102 school |
| 4- Formation of VDCs | 17 | not functioning |
| 5- Formation of women VDCs | 30 | |
| 6- Formation of women society registered NGOs | 2 | not functioning |

Source: The data and figures derived from the VES and WFP projects final evaluation reports.

3.2.2 Desired examples in school programmes:

3.2.2.1 Drama and puppet show:

Educational and awareness raising stories can be told in a puppet show. In many societies there is a tradition of some form of drama. A drama or puppet theatre will have most impact when the audience involved in discussion on what is happening before and after the performance.

The Puppet Theatre Shows:

The four expert VEAs who held puppet theatre shows late in 1999, continued this activity throughout this year and held shows in the rest of the villages (23 shows). Attendance was high 70-90% of the villagers (men women and children). The advantage of this method is that the extension message is easily understood by both literate and illiterate people and by all ages. The audience usually held discussions with the actors (the VEAs) and WFP staff at the end of the show.

WFP received invitations from the Ministry of Agriculture in *El Dammer* to participate in an exhibition of flowers and ornamental by staging the puppet show at this event. The show was held in *Atbara* Town. One show was held in Khartoum during the workshop of "Decentralization of Natural Resources". Two shows were held during the refreshment courses for VEAs and one show was held during WFP workshop in Shendi.

The Puppet Theatre of the previous project is now managed and directed by a group of women ex-extension workers. The Puppet Theatre did a remarkable work in transmitting all the needed extension messages to pupils as well to mature community members. The Puppet Theatre package ranges from the ordinary extension messages that tackle environmental issues, to messages addressing specific problems at village level. The current team who operates the theatre is with high caliber and has the skills and knowledge of how to prepare a scenario for a story or a problem in need to be addressed to the community such as a problem of water shortage at a certain village.

The Puppet Theatre played shows at a rate of one to two at each school, in addition to the shows at

Villages accompanying the extension nights carried out by the project.

Future plans for this puppet show unit is to continue after the project as an independent enterprise where it already has some applications for shows. To attain this goal will definitely need some funds at the establishment stage before to become a self-sufficient unit. A proposal had been prepared for supporting the "The Nile Puppet Theatre" as a permanent institution, but unfortunately committed donors were not found to support this initiative.

3.2.2.2. Video films:

Very interesting "rural" extension tool or activities is the video producing video films on a group of activities or on a project is very challenging. At the same time, the video is very attractive for audience. That explains the reasons of its successful use at the start of educational programmes.

3.2.2.3. The songs and use of cassette players:

Many people like to sing and dance and almost each community have someone who can sing and put words to music. This person can be asked to make song on particular subject of environment conservation for example. This cassette player can record voices, music and other sounds on tape, so that it can be heard again, and used in other communities.

3.2.3 Selection Criteria for suitable approach:

The selection depends on:

- 1- The effect that you wish to achieve.
- 2- The size of the group.
- 3- The amount of time and effort available for preparation.
- 4- The equipment which is available and you are able to use in specific place or a village.

3.2.4 The effects of visual aids:

Visual presentations that keep students, audience's attention contain an element of "drama". The audience must have the general idea of the direction in which the speaker is heading, but must not know every detail to come where surprise is an important element to attract attention.

That explains why the effects of various visual aids vary considerably.

Also visual aids that use color are again more effective than those only allow black and white presentations.

Visual aids that give the impression of moving illustrations hold the attention more easily than static pictures; therefore use of slides on film can be very effective.

Although there are practical disadvantages, such as costs, availability of equipment, availability of dark room and of electricity, but still visual aids worth as valid option.

3.3 Research Projects:

This was not central to VES project activities that lasted for two phases (1985 - 1989) and (1989 - 1993), but rather complementary to provide invaluable information for strategic planning and decision making. One of the major research projects is A Marketing Consultancy in 1991 to identify schemes with potential for income generation and explores possible markets for forestry products. The research has provided data to feed into the management plans of the nurseries, wood lots and other income generation schemes for rural women. The research indicated that there is substantial demand for forestry product and sufficient available income in the area to make the wood lots viable enterprises. It is concludes to that any wood lot below a certain critical area "depending on tree species and site conditions" will not generate enough income to the economically viable level.

There is no proper research work done on schools' program, but rather demand led assessments done by the project staff in looking for specific information such as the analysis done on water problem at schools in the project area.

3.4 Analysis for Training and Informal Education in SOS Sahel experience:

All successful environment projects depend upon the full cooperation of the local communities. SOS Sahel has developed formal and informal education and awareness raising programmes including drama and puppet theatre and different extension tools and materials to motivate and train farming families men and women and school children to work on voluntary basis to protect and rehabilitate their on means of livelihood.

The long-term sustainable management of such difficult environment ultimately depends on the response of future generations.

SOS Sahel works closely with local schools in all it is project areas, involving children in learning by doing, establishing school nurseries and shelterbelt to protect school building and in classroom activities, which take environmental issues through painting and drawing, discussions and puppet theatre.

Such work is difficult to evaluate in the short run, but in no doubt has set foundations for proper models of work targeting all the community sectors.

3.5 lessons learnt:

The impact of visual images or audiovisuals in extension and awareness rising is variable based on what aid you will select for a given situation.

Some estimate that people receive 80% of their information from what they see others have made the famous pyramid that shows that:

- 1- 10% of information is remembered when only listening.
- 2- 50% is remembered when hearing and seeing it.
- 3- 90% is remembered by hearing, seeing and doing it.

The use of visuals has important advantages over oral teaching:

- 2) Visuals give a more accurate impression of the subject, which is taught.
- 3) They save teaching time.
- 4) They help the memory of student or the audience.
- 5) If used well, they stimulate active thinking.
- 6) They provide shared experience.

The lack of basic services at schools such as water supply and proper fencing for schools hampered progress in planting all seedling production to contribute in greening the schools. The WFP final evaluation report stated that *"Success of the school program depended essentially on two main factors: the availability of water and the presence of a functional fence or wall. In schools that were producing seedlings these were widely disseminated and students brought seedlings back to their homes in other, non-project, and villages"*.

3.6 Monitoring and Evaluation:

The programme will have a built in system of information, reporting and monitoring. The women associations with support from the villages' level committees will collect information about the project progress, strengths and weaknesses and feed these information in a reporting system. The means, ways and issues to be covered by these information and how to gather information were tackled by the PLA sessions for all members involved in the process of implementation and management. Monthly reports were an objective comply with, where the quarter reports are the more essential as to provide information for the quarterly assessment that used to be made by the organization for all its operating projects.

The Final Evaluation Workshop: By the end of the year, the project prepared and carried out a final workshop to evaluate the project experience and share it with other related institutions in the Nile State. At the workshop 30 members from the associations attended, in addition to 18 representatives from the related Government institutions and other NGOs in the Nile State, beside the project management team. At the workshop the project experience was presented with a thorough description for all the strengths and weaknesses.

Other papers from the UNDP ADS projects at Lower Atbara River at the Nile State, and Oxfam experience at the East of Sudan were presented for comparison.

A final evaluation by the end of the end of the project is done under a lead of external evaluator, but done in a participatory way where all community sectors were involved in the process, as well all related official institutions and local authorities had been interviewed for feeding their opinions in the final report.

3.7 Main Constraints:

- 1- The school program as complementary component of other project activities also affected negatively by management problems at international and national level for example budgetary problems for all country projects where the projects' activities increasingly become expensive and less attractive to donors (one of the fund raising problems that environmental issues become less funded).
- 2- At national level the program affected by country the wide problems created by the Gulf crisis (Iraq war) such as fuel and oil shortage, staffing problems very poor and an realistic exchange rates imposed by government at that time.
- 3- The Education Authority has no specific curriculum for Environment in the primary schools, in addition to the lack of well trained teachers to cover the need for environmental awareness in the schools.
- 4- There is a lack of government funds for schools fencing, the matter that would make SOS Sahel efforts most likely unsustainable (except for some committed schools that are ready to meet cost from their own resources).
- 5- Wears SOS Sahel had been implementing forestry & environment interventions through projects under the technical Umbrella of the National Forestry Corporation (FNC), and that handover of these projects includes trained and skilled staff and equipment. The mere conclusion had been no progress with the resumed interventions after handover but rather depreciation on what had been achieved by projects
- 6- Local problems represented in
 - Seasonality of schoolwork i-e closure for 3-4 months as an annual leave.

- Most of schools compounds lack protection and proper fencing.
- Water problems at some villages where irrigation of school nurseries and trees depend on village water supply or pump and some community leaders give water priority for domestic purposes.

3.7. Specific areas of expertise developed:

Program staff are qualified and experienced in natural resource management, soil and water conservation, agronomy, agro-forestry, extension and community development. Members of staff are also experienced in program design, implementation, and monitoring and evaluation, and in supporting the organizational development of associations and unions.

Specialist areas include:

- Working with state and district government departments in inter-disciplinary approaches in addressing poverty, for example participatory extension approaches; capacity building of local associations and unions, including small business support, and the promotion of literacy classes.
- Training and support for government department staff in participatory extension approaches.
- Technical packages to intensify farm production (and diversify income sources), and to protect communal grazing areas and livestock corridors. These include deep ploughing; promotion of improved local seeds (sourced from Research Centers); farmer training in producing local seed; agro-forestry; *hafir* construction, integrated pest management; *gubraka* development, livestock husbandry and off-farm sources of income.
- Training and support for community based natural resource management - raising awareness, mobilization and establishing and supporting representative associations and unions.
- Organizational development support for community based associations and unions.
- Policy engagement support to associations and government departments.
- Enhancing women's contribution to the farm economy, and their engagement in off-farm livelihood strategies, e.g. marketing garden produce and handicrafts.
- Customary and legislative law pertaining to natural resource management, and conflict management structures and mechanisms.

4. Conclusion and Recommendation:

- 1- Long term type of planning projects must comprises some research activities for compilation, analysis of baseline data available to justify plans with time and reduce push back gaps.
- 2- The relevant government departments, in this case the Ministry of Education and FNC, are instigated to support and adopt successful initiatives resumed by NGOs as a sustainability demand. FNC should adopt and institutionalize the new approaches of community forestry and working with people as a pre requisite for sustainability of resource
- 3- Income generation and self financed activities which can be treated in short run should be included to reduce the administration and operation cost and secure sustainability.
- 4- Strengthen the role of CBOs capacities in financial management to justify eligibility.
- 5- Establishment of awareness program strategies for share and exchange of experiences.
- 6- Provide linkages for community CBOs to government related technical and financial departments to secure sustainability of such project.
- 7- Rural Development is more ensured through local institutions such as Women Associations and its related branches at village level.
- 8- It is necessary to define the actual needs of communities before formulation of projects. This will ensure community participation if the addressed problems were representing the actual needs and the provided program would make a difference in the livelihood of participants.

ENVIRONMENTAL AWARENESS PRESENT & FUTURE INTERVENTIONS

Musa Beirag

The world's population is growing by nearly 80 million people per year. While population growth rates have slowed since their peak in the 1960s; the numbers being added to the population each year continue to be huge, in part because of the growth in the numbers of people of reproductive age. At the current rates of birth and death, the world's population is on a trajectory to double in 49 years.

Population growth is not only the threat facing humanity, but expansion of human activity and associated loss of habitat are the leading causes of the unprecedented extinctions of plant and animal species worldwide.

Massive rural to urban migration in much of the developing countries has overwhelmed water treatment systems, resulting in water pollution that leads to intolerable health conditions for many people.

Rural populations are also growing, leading to overuse of land and resultant erosion of hillsides and silting of rivers. The same pressures are hastening the destruction of vast forest areas and loss of wildlife habitat. The loss of forest also reduces the ability of the ecosystem to combat global warming.



Communication for Development

Recognizing the importance of communication for development, some international development agencies have had considerable successes through communication initiatives with high-level government policy makers in setting the scene for concerted social action. This has been the case with UNICEF interventions at high 'political levels in favor of children. For environmental conservation too, information and communication have been the basis for creating policies in many countries, especially since mid-70s. Prior to that, many governments in developing countries were in favor of large populations and it was only after widespread communication activities decision-workers in country after country introduced environmental policies. As a result, environmental awareness campaigns and programs, both governmental and NGOs campaigns and programmes began to flourish.

National Efforts on Environmental Conservation

Despite the fact that the government direct supervision over the environmental issues is comparatively new Endeavour, the Sudanese communities have been practicing traditional means of environmental conservation centuries ago. For example, before the convocation of the United Nations Conference on Human Environment (UNCHE), the Sudanese Environment Administration had been distributed among a number of government's institutions. In light of the conference's recommendations, a national council for environment was set up in the same year under the umbrella of the Ministry of Higher Education and Scientific Research. But, a practical step, which displays the government's keenness over the environment conservation, was materialized in 1991 when the Higher Council for Environment and Natural Resources was set up. This initiative was consolidated when the National Comprehensive Strategy NCS (1992-2002) was formulated. The NCS underscores development of the human being as the ultimate goal for all social and economic development programs. One of the means to accomplish this objective is (the preparation of an information and communication plan in which the mass media play a vital role in changing the behavior and attitude of the population in all population-related issues including environment conservation.

Role and Functions of Media

The importance of the mass media in the dissemination of environmental-related issues has been recognized by both the Sudan government and the international donor agencies decades ago. Mass media scholars have noted four functions of the mass media:-surveillance of the environment, the correlation of the parts of the society in responding to the

environment, the transmission of social heritage from one generation to the next and entertainment.

Surveillance, which is the first function, informs and provides news. In performing this function the media warn us of expected dangers such as extreme or dangerous weather conditions. Correlation, the second function, is the selection and interpretation of information about the environment. The media often include criticism and prescribe how one should react to events. Thus, the correlation function serves to enforce social norms and maintain consensus by exposing deviants, confers status by highlighting selected individuals, and can operate as a check on government. In carrying out the correlation function the media, can often impede threats to social stability and may often monitor or manage public opinion.

As transmitters of culture, the media function to communicate information, values and norms from one generation to another or from the members of the society to newcomers. In this way they serve to increase social cohesion by widening the base of common experience. Entertainment, the fourth function, serves to provide respite from everyday problems and fills leisure time. The media expose millions to a mass culture of art and music, and some people contend that they raise public taste and preference in the arts.

SITUATION OF THE SUDANESE MEDIA AND ENVIRONMENTAL MESSAGE

Historical setting

The political history of Sudan since independence in 1956 has been a vicious circle of government changes from parliamentary democracy to military regimes. When the military takes over, mass media institutions have always been among the key strategic positions to be controlled during the coups. But, both military regimes and democratically elected governments invariably concurred that the mass media, particularly the radio and TV, should stay under the control of the government of the day.

Above all, the media system prevalent in Sudan has not been able in both cases to express the concerns of the country with its ethnic and cultural diversity and the particular needs of the region. The limited scope of the electronic media outreach and the weak circulation of the news paper prevented the communication system from being part of the development structures of the regions.

It might have been assumed that regional media could have provided windows for projecting local and regional development problems and issues. But, despite the subsequent spread of radio and TV stations, the weak budgets allocated for these media, the tight state governments control did not allow them to perform their basic duties in focusing in developmental, environmental educational and health issues.

Policy Setting

The Sudan National Population Policy Document (SNPPD) which has been passed in 2002 confirmed the long-held view that the national population problem constituted - Divergence between economic and population growth - low population characteristics and uneven population distribution exacerbated by refugees and internal displacement problems caused by war and drought.

As far as the population IEC/ advocacy is concerned, the policy stressed the need of raising awareness, knowledge and commitment at all levels of society on the importance of population-related issues to develop positive attitudes among intellect ads, political and social institutions towards demographic issues in a bid to bring about just population distribution, ideal exploitation of resources and curb the rates of poverty as the environmental problem in Sudan is subject to the relationship between poverty and population growth.

However, the policy stressed the need for mapping out Information, Education and Communication (IEC) strategy to reach the grass-roots and inventing various advocacy tactics to gain the support of community leaderships and decision-makers in order to bring about the required positive behavior change with regard the equal and just population distribution, ideal exploitation of the resources and appropriate handling of the environment.

Media Outreach

A desk review of socio-cultural research findings on population issues conducted in 1999 by the UNFPA-funded Advocacy Project revealed that although several media campaigns were launched in the last two decades, knowledge and attitudes towards population-related issues were still weak. A national communication researcher identified the need for conducting a nation-wide socio-cultural, media and audiences research as imperative for future planning of

advocacy interventions. Such research is needed to identify audiences of various media, their listening, reading and viewing habits, possession of radio and TV sets and access to newspapers.

According to the Safe Motherhood Survey (SMS) National Report (1999), 44 percent of ever-married women in the 16 states of the northern part of Sudan, excluding the 10 states of southern Sudan, own radio sets, while relatively smaller proportion of 20 percent have TV sets. The report which took a sample of 16,000 households, 1060 from each state revealed that about one-third of rural women possessed radio sets but the reported percentage in urban areas is nearly twice this. More than half of the respondents in Khartoum have a television set, while radio, the most commonly possessed item-is owned by less than one-third of women in Kordofan and Darfur states.

Only one-third of respondents live in houses with electricity facilities. The situation is particularly abysmal in rural areas where only 11percent live in houses with electricity. In this regard respondents in urban areas are much better placed as nearly half of them have access to electricity.

A KAP survey on advocacy for population programmes conducted by UNFPA and the Advocacy Project in 1999 sampled 60 media professionals, 20 from each of the television, radio and newspapers in addition to the 60 persons in key decision-making positions in the government. The study aimed at exploring opinions of these categories about information on population issues.

On sources and adequacy of information on population issues, 70 percent of policy-makers considered newspapers as the most important sources than radio and TV. The media group identified newspapers, radio and TV consecutively as important sources. The rest of the respondents of policy makers group identified radio and TV as equal in importance as sources of information on population -related issues.. Within the media group, 60.7%, 60% and 73.3% respectively identified radio, TV and newspapers as the important sources of information on population-related issues. However, both groups considered that one of the factors hindering the provision of information on population issues was their limited ability to conceptualize these issues. This has resulted in the inadequate amount of information on the various population issues and the general lack of awareness as indicated by one third of the policymakers and more than two thirds of the media specialists.

Media Infrastructure

The Sudanese mass media has always operated in dire economic circumstances although with the current rapid technological advances, the growing competition posed by globalization and proliferation of satellites, mass media operations are becoming increasingly expensive.

Moreover, media infrastructure in Sudan has been progressively deteriorating rather than developing with time even compared with similar Third World countries. National electricity generation has remained constant despite the expanding use and growing need for electric power. As a result only 15 percent of the people in the country have electric service and the per capita consumption of electricity has been reduced to 100 Kv/hour compared to 15000Kv/hour in the United States. As the mass media need electric power to operate their equipment, radio and TV transmission repeatedly ceased due to recurrent power cuts. Newspapers often failed to come out because of power cuts usually referred to in next editions as technical reasons.

Environmental Awareness Campaigns

Environmental-related Government and Non-Government Organizations (NGOs) and other civic society bodies are exerting strenuous efforts to address environmental problems represented in illegal of trees cutting and poaching as well as air pollution through a variety of communication channels and media.

There are many creative ways to reach a target audience with messages and materials, some ways the target audiences can be reached include:-

- 1 :- Interpersonal Methods
 - * Individual counseling
 - * Group debate
 - * peer education
- 2 :- Print Media
 - * Brochures
 - * Pamphlets

- * Book lets
- * Posters
- * Newspapers
- * Magazines
- 3 :- Audio-visual
 - * Radio
 - * TV
 - * Theater
 - * Music
 - * Folk media
- 4 :- Training
 - * Seminars
 - * Workshop
- 5 :- Other?

The most effective way to reach your audience is to use a combination of these. They will reinforce each other.

As the focal point for environmental awareness, the Sudanese Environment Conservation Society (SECS) has been playing the major role for producing and disseminating environment-related messages through the various mass media. As such, the quality and relevance of these messages to a large extent determine their access to the media.

The SECS have succeeded to explore many entries to access the audio-visual and printed media in a bid to address a variety of environmental problems. In connection to the audio-environment related- messages, the SECS has been organizing regular radio programs, in collaboration with the Sudanese Radio and TV Corporation on various environmental issues. The weekly program titled "We and the Environment Friends" aired over the National Radio every Tuesday, highlights the environmental news and sheds lights on crucial environmental problems.

On the other hand, TV programs, on environmental issues were scarce and they are aired sometimes on irregular basis. They are usually featured special events (e.g. sports games, Environment day, School fairs, Tree Day etc...).

This situation was not restricted to TV, which government-controlled channel and stymied by politicians patronizing and possessive attitudes, but transcended them to the news papers. Although, most of the existing press is independent news papers, Editorial Boards tend always to publish exciting political issues to attract more clients turning deaf year to developmental articles including environmental issues.

The SECS used to spoon-feed certain daily news papers by preparing an edited specialized page highlighting environmental messages. In most cases these pages which are published on weekly or monthly basis are being sponsored and paid by the SECS and its donors.

ROLE OF POPULATION COMMUNICAION CENTER IN ENVIRONMENT CONERVATION

Sudan was a pioneer in the region in setting up of development communication unit to support the various government projects. The Population Communication Center (PCC) , an affiliate of the Ministry of Information Communications is deeply-concerned with relevant population - related advocacy programs.

The UNFPA assistance to the PCC dated back to 1982 and continued until now. The rationale behind UNFPA support to the PCC was that the government-controlled media are crucial in support of the national population and development programs

The utilization of the mass media for the purpose of population and development advocacy has always been the central theme of UNFPA supported projects implemented by PCC. During the UNFPA program cycle 1992-1996, environmental awareness featured high among population and development issues the PPC assigned to advocate for.

To this effect, the PCC developed and produced various environmental media messages spanning audio-usual and printed materials. Specifically the PCC designed and produced during this period four radio dramas aimed at raising environmental awareness among the population.

The drama messages covered air and water pollution, hazards of desertification, and population growth and its impact on environment.

Regarding the visual materials, the PCC have been producing TV spots on various environment-related issues. The PCC also is producing "People and Life" TV magazine and is

aired by Khartoum State TV Station. The PCC organizes, among other population-related issues, seminars and workshops on environmental issues for traditional leaderships and tribal chieftain on state-level.

Underlying IEC/ ADVOCACY Concepts and Principles

The goal of IEC is to change attitudes, beliefs, values, behavior and norms of individuals and communities. The goal of Advocacy is to influence policies, strategies or programs by gaining the support and commitment of influential individuals or organizations on specific issues or by creating an environment that fosters desired change. Despite this distinction between IEC and advocacy, there is considerable overlap in the processes they use to achieve their goals. Both employ the same techniques to identify issues, segment audiences, select messages and channels of communication. They also employ the same research and evaluation methodologies to develop their programmes and measure their impact.

Four principles will guide the implementation of any IEC and Advocacy approach. The four principles set the stage for IEC approaches that can build on past achievements, embrace innovation, foster synergy with other elements of other population-related policies, and enhance cost-effectiveness. These principles are:-

Focus on behavior change

Inadequate attention to attitude and behavior change has led to knowledge, attitude and practice gaps that must be addressed. In addressing the new and emerging environmental issues, a strategy will focus on observable and measurable changes in specific knowledge, attitudes and behaviors on the basis of socio-cultural research findings that must precede the media intervention, and will respond to specific concerns or deal with misinformation or rumors. Development of IEC objectives, messages contents, and indicators will focus on required changes in knowledge, attitude and behavior.

Linking IEC to services

Often IEC alone cannot change behaviors. IEC affects people's cognition and emotions. Interventions that specify providing physical and human resources may need to accompany IEC interventions aimed at achieving behavior change goals.

Regional and community focus

In line with regionalization and decentralization, the focus of IEC implementation will shift to the regional and sub-regional levels. The role of the central level will be to provide technical support, foster net working and information sharing among regions, and mobilize resources, as well as monitoring and evaluation. Within this frame work, regions will develop their region-specific media strategies, addressing respective socio-cultural realities as well as priority issues.

Quality control assurance

In IEC materials development and production, quality counts as it promotes cost effectiveness. This implies that message and material development is based on formative research, pretesting with relevant audiences, gatekeeper review, and involvement of competent specialists.

Media for IEC

The channels to be used to reach IEC audience include. Modern mass media, audio -visual and print media, folk and traditional media.

Mass media: - the mass media are crucial for the successful implementation of media intervention because of their reach .As in other developing countries, the media influence policy makers and opinion leaders particularly in urban areas. The mass media in Sudan, comprising radio television and newspapers, cover development issues, including population.

Audio-visual and Print Media:- Audio-visual and print materials, including audio and video cassettes, flip charts, posters and leaflets, are important educational tools. The impact of print and audio-visual materials depends on their quality, quantity and effective distribution.

The Population Communication Center (PCC), a tributary of Sudan Academy for Communication Sciences (SACS) is the principal producer of audio-visual materials for population programmes. The PCC's facilities include graphic art, desk-top publishing, and printing, video and audio cassettes production.

Folk and Traditional Media :- Although experiences of other countries indicate that folk and traditional media are effective channels to reach grassroots audiences, they have not been fully exploited for disseminating development and population programs in Sudan.

TACTICS FOR ADVOCACY

Carrying out Advocacy will involve the following tactics: sensitization, mobilization, debating, dialoguing, negotiation, lobbying, petitioning, coalition building and networking.

Sensitization:

Awareness and comprehension of issues are the first step towards action. Therefore, all categories of stakeholders-beneficiaries, partners, adversaries and decision- makers should be sensitized to key aspects of issues and causes for advocacy. It should be noted that the media and communication channels used for IEC are often the same tools used for sensitization.

Mobilization:

Many environment issues, such as illegal poaching and tree cutting, require the active involvement of motivated beneficiaries and partners. However, many choose to sit on the fence due to apathy or lack of motivation. It is necessary to mobilize these allies into action.

Dialoguing and negotiation

Some issues related to environmental traditional practices elicit opposition from groups based on social or other ground. Often such opposition is based on lack of information and stereotypes. Debating and dialoguing with adversaries force them to confront and challenge their views and positions. When sensitization and dialoguing are not enough to change the position of adversaries, it may be necessary to negotiate with them. During negotiation, advocates should be prepared for compromise as a way to advance their cause while enabling adversaries to save face.

Lobbying and petitioning

These tactics will be used to gain and retain the attention of decision makers and encourage them to take, introduce, pass, review or repeal legislation or policies. Since many of environmental issues that are supposed to be addressed arise from inadequate or inappropriate legislation, lobbying and petitioning will be useful tactics to achieve desired changes in policies and strategies.

Coalition building and Networking

Advocacy thrives on coalitions and partnerships. Coalitions comprising partners and beneficiaries will be fostered or strengthened to address the major issues and causes for Advocacy being identified with consensus.

Future Media Intervention

From the above-mentioned review, two methods of awareness-raising should be adopted throughout the process of enlightening the population on environmental issues. These two methods are activities to be implemented via IEC tools and advocacy tactics to attain the required outputs. There are two outputs that must be realized through carrying out certain activities.

The first output is that targeted areas should have sustainable access to information about environmental conservation through the following activities:-

- Conduct baseline surveys to identify the level of community awareness.
- Organize Training of Trainers (TOT) workshop for community elite on the methods of communication/ advocacy skills.
- Identify potential NGOs and CBOs which will work in partnership with the community on environmental issues.
- Provide NGOs and CBOs with audio-visual equipments and other resources for community mobilization and sensitization.
- Develop the IEC materials, radio and TV programs, video films and other publications and distribute them to the target groups.
- Conduct community debate in target areas through the NGOs and CBOs. Partners.

- Develop and disseminate pamphlets, booklet, posters and newsletters on environmental awareness to the civil service, university students, boys scouts and girls guides etc.

The second output aims at gaining the support of senior government officials, tribal and religious leaderships as well as civic society groups via carrying out the below activities:-

- Organize seminars and workshops at national and state level to raise awareness of legislatives, community leaderships and planners and encourage them to advocate for the prevention of the environment.
- Set up national forum to coordinate local, regional and international efforts and expertise.
- Provide traditional leaderships with up date information on the basis of healthy environment.
- Share experience with other countries.

Misuse of the Environment and Behavior Change

We have to admit that dealing with the environment is a human attitude and behavior. Hence, it is not realistic to assume that we can make the change from (undeal) attitudes and behaviors to (ideal) attitudes and behaviors during a brief period. Changing behaviors and attitudes is a process that takes time. As the majority of the targeted people moves from one step to the next, they will need different messages and support. Communication scholars have identified a process of four steps within which people strive to change specific behavior.

This behavior change process is: Unawareness-Awareness - Acquiring Knowledge and Skills-Motivation- Trial- Success.

The process of changing behavior and attitudes is not a direct journey. Most people move back and forth between steps before achieving success.

There is strong evidence that mass media, particularly entertainment broadcast media, have played a significant role in a number of countries in bringing about behavioral change. For example. Radio and TV soap operas in Mexico, Kenya and Tanzania have been documented in their massive effects on audience attitudes and behaviors with regard to HIV/AIDS avoidance and use of family planning methods. According to a paper by William Ryerson on (*The Effectiveness of Entertainment Mass Media in Changing Behavior*) one of the advantages of using serial dramas, is that they allow time for the audience to establish bonds with the characters and allow the characters to evolve in their thinking and behavior with regard to various issues at a gradual and believable pace in response to problems that have been well illustrated in the story line. Just as important, entertainment programs forge emotional ties to audience members that influence values and behavior more forcefully than purely cognitive information provided in documentaries. "Vicarious learning from others is a powerful teacher of attitudes and behavior", the paper stressed.

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III Annex III Workshop pictorial



