

Nile Transboundary Environmental Action Project

The Status of EE&A within the Nile Basin

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NILE BASIN INITIATIVE

Initiative du Bassin du Nil

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NTEAP

The status of Environmental Education and Awareness in the Nile basin

Preface

The Nile basin is home to about 160 million people, of majority these live in rural areas and depend directly on land and water resources for shelter, income and energy. Six of the ten Nile basin countries are among the worlds poorest, with a GDP of less than US\$250 (TEA, 2001). Such grinding poverty in combination with very rapid population growth has put enormous pressure on the natural resources and ecological systems on which economic development is based. Environmental education and awareness is one of the tools being used to stimulate sustainable economic growth as an effort to reduce poverty in the basin.

Recognizing the scope, the NTEAP has a component on environmental education and awareness. The main objective of the component is to creating awareness on the River Nile environmental threats, while stimulating behavioural change at three levels; the general public, the schools and tertiary institutions of learning. This will be achieved through formal and non formal EE&A and networking of practitioners and organisations.

This state of EE&A analysis for the Nile basin has been developed from country reviews by consultants and national workshops. Priority activities to be addressed at national and local levels have been identified and analyzed. The report also indicates the status of legislation and policy framework, formal and non-formal environmental education and the role the media plays in promoting good environmental practices. The current and planned EE&A activities were also analyzed to gain from their lessons learnt and avoid re-inventing the wheel. An attempt was made to collect data on a few indicators to provide baseline information.

This report is intended to act as a baseline and to provide lessons while implementing the EE&A activities. It is also intended to stimulate governments on enacting environmental education and awareness policy and strategies for smooth implementation.

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Abbreviation and Acronyms

CBO	Community Based Organization
CSO	Civil Society Organization
CIDA	Canadian International Development Agency
EE&A	Environmental Education and Awareness
MOA	Memorandum of Agreement
NBI	Nile Basin Initiative
Nile-SEC	Nile Secretariat
NGO	Non Government Organization
Nile-TAC	Nile Technical Advisory Committee
NSC	National Steering Committee
NTEAP	Nile Transboundary Environmental Action Project
PMU	Project Management Unit
PSC	Project Steering Committee
SAP	Subsidiary Action Program (of the NBI)
SVP	Shared Vision Program (of the NBI)
TEA	Transboundary Environmental Analysis
UNDP	United Nations Development Programme
UNOPS	United Nations Office for Project Services

Executive Summary

1. Information collection for the status of environmental education and awareness with the Nile basin was collected informally through national workshop and formally by national consultants between October 2004 and January 2005. Participatory methodologies were used in collection of information.
2. The report provides an overview of environmental education and awareness within the Nile basin countries namely Burundi, Congo DR, Egypt, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda.
3. The analysis came up with the following major findings:
 - There is a great interest in environmental education and awareness in all countries of the basin. There is an understanding that EE&A will solve the underlying environmental threats and provide a solution to sustainable natural resources management.
 - Environmental enforcement agencies have the mandate to plan and coordinate EE&A activities at the country level. The legislation and policy guiding these institutions exist. What is lacking in most countries in the implementation strategy to guide activity implementation?
 - Non formal environmental education activities are carried out by individuals within several key groups, Government Ministries, Non governmental organizations. These activities are usually undertaken on specific days and therefore lack continuity.
 - Formal environmental education is mainstreamed in both primary and secondary education curriculum. Most schools have embraced environmental education extra curriculum activities through environmental clubs. However the teacher's capacity to deliver environmental education is lacking in most countries. Also lacking is adequate environmental education teaching materials.
 - At tertiary institution of learning, environmental education courses are offered at various levels, certificate, diplomas, degrees and even masters level. Stand alone environmental education courses are rare. The trend is to offer environmental education as a topic within environmental science courses. Environmental clubs do exist in some tertiary institutions of learning; however only a few are active.
 - The role of the media in creating awareness on environmental issues is recognized in all countries. In some countries the media has formed associations of environmental

journalist. Award schemes for the media have also been formed and honoured annually.

4. There is strong evidence that environmental education awareness activities are taking place in various forms within the Nile riparian countries. Except for a few countries, the activities are coordinated to bring synergy. This is one role the NTAEP project can play.
5. There exist a wealth of experiences and case studies which the project can learn in many cases replicate depending on existing conditions. These experiences need to be documented and shared among the countries

1.0 Introduction

- 1.1 The Nile Transboundary Environmental Action Project is one of the eight projects under the Nile Basin Initiative Shared Vision Programs (SVP). The main objective of the project is to provide a strategic environmental framework for the management of the transboundary waters and environment challenges in the Nile river basin. Specifically, the project will: (i) improve the understanding of the relationship of water resources development and environment; (ii) provide forum to discuss development paths for the Nile with a wide range of stakeholders; (iii) enhance basin-wide cooperation and environmental awareness and (iv) enhance environmental management capacities of the basin-wide institutions and the NBI. In order to achieve these objectives the project is divided to five overlapping components. Environmental education and awareness is one of the components.
- 1.2 The Environmental Education and awareness component will focus on creating awareness on the River Nile environmental threats, while stimulating behavioural change at three levels; the general public, the schools and tertiary institutions of learning. The component's objectives will be achieved through:-
- Non Formal environmental education (NFEE) - enhancing awareness on environmental inter-relatedness with socio-economic development to communities within the Nile basin;
 - Formal environmental education (FEE) - geared into educating the future generation on good environmental practices through project based learning;
 - Networking of practitioners (EE&A, Media, Lecturers and Students) – sharing of national experiences to develop and implement transboundary activities.
- 1.3 In order to design an environmental education and awareness component, it is important to begin with a sense of the history of the environmental issues, knowledge of the key institutions and individuals, and an idea of which options are possible. Successful and sustainable EE&A initiatives are usually built on a combination of all stakeholders, especially project recipients and beneficiaries ideas.
- 1.4 This document is a synthesis of reviews of country's EE&A activities. The reviews were carried out by national consultants in nine countries of the Nile basin in December 2004. The report also borrows from a national workshops

conducted in November 2004. Apart from providing information of the status of environmental education and awareness activities within the Nile basin, the report provides baseline information which forms part of the NTEAP M&E strategy.

2.0 Background

- 2.1 Worldwide there are 261 shared river basins shared by two or more sovereign states. In Africa there are more than 60 shared river basins among which the Nile Basin stands out as the most unique of all.
- 2.2 The Nile Basin sprawls over 10 sovereign countries with an area of over 3.1 million square kilometres and the Nile River stretches for over 6800 km from the highlands of the equatorial lakes to the Mediterranean Sea. Half of this stretch is through areas with no effective rainfall.
- 2.3 The Nile basin is home to about 160 million people and includes parts of ten countries - Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda.
- 2.4 The extraordinary physical and ecological features of the Nile River have supported a dramatic evolution and expansion of human activity. The overwhelming majority of whom live in rural areas and depends directly on land and water resources for shelter, income and energy. These people are faced with challenges like grinding poverty, rapid population growth putting enormous pressure on the natural resources and ecological systems on which economic development is based.
- 2.5 Efforts to reduce poverty and stimulate sustainable economic growth in the Nile basin are being undermined by 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, waterborne diseases, declining biodiversity and the threat of climate change. As a result, there is an urgent need to integrate environmental concerns into poverty alleviation and economic development strategies.
- 2.6 Environmental Education has been recognised as one of the tools of mitigating environmental threats. Since the 1970s, environmental education has been characterized as a process that prepares citizens to prevent and solve environmental problems. Delegates to the 1977 United Nations Intergovernmental Conference on Environmental Education in Tbilisi, Georgia acknowledged the various aspects of environmental education when they agreed upon the following definition:

Environmental education is a process of developing a world population that is aware of and concerned about the total environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones (UNESCO, 1978).

The delegates identified five objectives of environmental education programs:

Awareness	to acquire an awareness and sensitivity to the total environment and its allied problems
Knowledge	to gain a variety of experiences in, and acquire a basic understanding of, the environment and its associated problems
Attitudes	to acquire a set of values and feelings of concern for the environment and motivation for actively participating in environmental improvement and protection
Skills	to acquire the skills for identifying and solving environmental problems
Participation	to encourage citizens to be actively involved at all levels in working toward resolution of environmental problems

Source: UNESCO, 1978).

Table 1. Historical progress on environmental education

Year	Conference	Main issues
1972	Conference on Human Environment (Stockholm 1972)	Formation of UNEP and declarations and a workplan
1975	The International EE Programme - UNEP + UNESCO (IEEP)	The IEEP was established to fulfil the recommendations of the Stockholm Conference - curriculum development, capacity building, information exchange, integration of EE into tertiary institutions, awareness creation and encourage research.
1977	Intergovernmental Conference on EE (Tbilisi 1977)	Strengthened the IEEP objectives.
1987	Moscow Conference on Environmental Education and Training (Tbilisi +10)	Recommended that EE should be made an integral part of the entire educational process and aimed at every category of the population.
1987	The Brundtland Commission (Our Common Future)	Foundation of Agenda 21 and the 27 principles of Rio Declaration
1992	The UN Conference on Environment and Development The Earth Summit	The Agenda 21, Chapter 36 on environmental education and awareness.
1992	The International Workshop on Environmental Education (Held simultaneously during the Earth Summit)	EE to be treated as a methodology that pervades the whole curriculum and taught from pre-primary to tertiary institutions; establishment of EE through multi-sectoral linkages; messages should be positive and emphasis the need for action; encourage exchange of information and encourage home-grown solutions.
1994	Cairo Conference on Population and Development	
1995	Copenhagen Social Summit	
1997	Rio + 5	Reviewed country performances on Agenda 21
2002	WSSD, Johannesburg	

	Rio + 10	
2004	UNESD	Education should be holistic and look into other issues like poverty, etc

- 2.7 Several EE meetings and workshops have been held within the region. The most notable one is the SIDA funded Environmental Education: Experiences and Suggestions held in Nyeri, Kenya 1992.
- 2.8 There is widespread recognition in within the Nile basin that EE&A is a tool to be used to halt environmental degradation (see table 2 of Nile environmental threats) and to lay the groundwork for environmentally sustainable economic growth. This recognition is also embroiled on the fact that EE&A is also key in obtaining and maintaining public support for environmental protection and nature conservation. Lessons learnt while implementing Environmental Education and communication (EE&C) also support this fact. Knowledge alone doesn't harm or help the environment. Human attitudes don't harm or help the environment. Human behaviors, on the other hand, have greatly harmed, yet hold a great deal of hope for helping, the environment. Those of us who work for environmental sustainability must address human behavior. Behaviors, of course, must be supported by knowledge and attitudes. (Martha C *et al*, 1994).

Table 2. Overview of Immediate and Underlying Environmental Threats in the Nile Basin

Root Causes Basin-wide	
Basin-wide causes	Policy, governance, institutional and capacity constraints, insufficient environmental education and awareness, limited access to environmental knowledge and information (including relevant scientific data), unclear tenure and inadequate access to resources for local stakeholders, inadequate management of protected areas and other environmental hot spots
Priority Environmental Threats by Country	
Burundi	Deforestation, soil erosion, degradation of river banks and lakeshores, mining, wildlife hunting
D.R. Congo	River and lake pollution, deforestation, soil erosion, wildlife hunting
Egypt	Water and air pollution, filling of wetlands, desertification, water logging and soil salinity, sanitation, river bank degradation
Ethiopia	Deforestation, overgrazing, soil erosion, desertification, sanitation, loss of biodiversity (including agro biodiversity), floods, droughts
Kenya	River and lake pollution (point and non-point source), deforestation, desertification, soil erosion, sedimentation, loss of wetlands, eutrophication and water weeds
Rwanda	Deforestation, soil erosion, degradation of river banks and lakeshores, desertification, wildlife hunting, overgrazing
Sudan	Soil erosion, desertification, pollution of water supplies, wildlife hunting, floods, droughts, sanitation, deforestation
Tanzania	Deforestation, soil degradation, desertification, river and lake pollution, poaching and shortage of potable water
Uganda	Draining of wetlands, deforestation, soil erosion, encroachment into marginal lakeshore and riverine ecosystems, point and non point-source pollution

Source: TEA 2001

- 2.9 Most of the EE&A efforts within the Nile basin have traditionally been carried out within the boundaries of individual riparian countries. Many environmental studies, programs and projects have been implemented by national governments with support from international partners. More recently, there has been increasing recognition that key environmental issues are often not limited to single countries, but are regional or global in scope. This realisation hatched the Nile Transboundary environmental project which has a component on EE&A.
- 2.10 This report is a synthesis of environmental education and awareness status in nine Nile basin riparian countries. The baseline will help in determining transboundary activities to be carried out by the NTEAP EE&A component.

3.0 Information Collection Process

- 3.1 Outputs from two related sets of activities have informed this report. The first consisted of participatory national reviews conducted by national consultants in each of the nine participating Nile countries, with findings and recommendations documented as national EE&A initial reviews. The national consultants undertook desk reviews, interviewed stakeholders using a checklist (example – annex 2) and presented findings to a body of environmental education experts at the national level before finalising the report.
- 3.2 The second activity, involved national workshops aimed at forming national environmental education and awareness working groups in which six papers were presented on the status of environmental education in the respective countries.
- 3.3 This report includes a collective synthesis of the basin wide environmental education's legislation, policies, strategies based on formal, informal EE activities. The synthesis also single out good case studies and proposes a set of baseline figures and indicators to facilitate monitoring of activities and impact. The synthesis provides the basis for identification of transboundary environmental activities for implementation based on past and current national activities and experiences.

4.0 THE STATUS OF ENVIRONMENTAL EDUCATION AND AWARENESS WITHIN THE BASIN

4.1 Legal and Institution framework

- 4.1.1 Good policies are the product of effective policy formulation, articulation and implementation. Environmentally sustainable development requires; (i) a healthy political environment, characterised by environmentally aware leaders and greater popular participation in decision making; (ii) effective policies, laws and regulations that empower citizens to make environmentally beneficial choices and (iii) capable institutions to implement policy, advocate reform, and educate both the people and their leaders.
- 4.1.2 Policies are intended to promote specific actions or behaviours at international, national, regional or local levels. Environmental education and awareness contribute to three interrelated facets of policy process: (i) formulation, (ii) articulation and (iii) implementation. Formulation of good policies hinges on getting input from the people about their needs and wants. EE&A helps in defining what information is needed by whom to formulate appropriate policies. It also provides both policy makers and advocates with the skills to define and articulate their agendas. Legislation, policy and strategies provide legal backing, provision of guidelines including priorities activities and implementation modalities at the country level.
- 4.1.3 The Nile basin countries are signatories of many international conventions, protocols, agreements and treaties. These agreements are legal framework for the protection of the environment. Table 4 gives a summary of these treaties.

Table 4. Commitment to International Conventions

Convention	BI	CD	EG	ET	KE	RW	SD	TZ	UG
African Convention on the Conservation of Nature and Natural Resources, Algiers (1968)		E:1976	S:1968 R:1972 E:1972		E:1969	E:1980	E:1973	E:1974	E:1977
Agreement on the Conservation of African-Eurasian Migratory Waterbirds (1999)			S:1997 R:1999				S:1996 R:1996	R:1999	

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)	A:1997	A:1994 E:1995	A:1993 R:1993 E:1993	1989				A:1993 E:1993	A:1999
Convention Concerning the Protection of the World Cultural and Natural Heritage, Paris (1972)	R:1982	R:1974	R:1974 E:1975	R:1977	A:1991 R:1991		R:1974	R:1977	A:1987
Convention for the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons, and their Destruction, London (1972)		E:1975	S:1972	E:1975	R:1976 E:1976	E:1975			E:1992
Convention on Biological Diversity (1992)	S:1992 R:1997	S:1992 R:1994 E:1995	S:1992 R:1994	S:1992 R:1994 E:1994	S:1992 R:1994 E:1994	S:1992 R:1996 E:1996	S:1992 R:1995 E:1996	S:1992 R:1996 E:1996	S:1992 R:1993 E:1993
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1973)	A:1988 E:1988	A:1976 E:1976	S:1994 A:1978 E:1978	A:1989 E:1989	R:1978 E:1979	A:1980 E:1981	R:1982 E:1983	R:1979 E:1980	A:1991 E:1991
Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa, Bamako, Mali (1991)	S:1991	S:1994	S:1991	1991		S	S	1993	S
Convention on the Conservation of Migratory Species of Wild Animals, Bonn (1979)		E:1990	S:1979 R:1982 E:1983		1999			1999	
Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Ramsar (1971)		E:1996	R:1988 E:1988		S:1990 R:1990 E:1990			E:2000	E:1988
UN Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification particularly in Africa (1994)	S:1994 R:1997 E:1997	S:1994 R:1997 E:1997	S:1994 R:1995 E:1996	S:1994 R:1997 E:1997	S:1994 R:1997 E:1997	S:1995 R:1998 E:1999	S:1994 R:1995 E:1996	S:1994 R:1997 E:1997	S:1994 R:1997 E:1997
Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora (1994)				1994 E:1996	S:1994 E:1996			1994 E:1996	E:1996
Montreal Protocol on Substances that Deplete the Ozone Layer (1987)	C:1997	C:1994	S:1987 R:1988 E:1993	C:1994 E:1995	S:1987 R:1988 E:1989		C:1993 E:1993	C:1993 E:1993	S:1988 R:1988 E:1989
Phyto-sanitary Convention for Africa, Kinshasa (1967)	E:1992		E:1968	E:1974		E:1981			
UN Convention on the Law of the Sea (1982)	S	S R:1989 E:1994	S:1982 R:1983 E:1994	S	S:1982 R:1989 E:1994	S	R:1985	R:1985 E:1994	R:1990 E:1994
UN Framework Convention on Climate Change (1993)	R:1997	R:1995 E:1995	S:1992 R:1994 E:1995	R:1994 E:1994	S:1992 R:1994 E:1994	R:1998	E:1994	R:1996 E:1996	R:1993 E:1994
Vienna Convention for the Protection of the Ozone Layer	C:1997	C:1994 E:1995	S:1985 R:1988 E:1988	C:1994 E:1995	S:1985 C:1988 R:1988 E:1989		C:1993	C:1993 E:1993	C:1988 E:1988

BI: Burundi; CD: D.R. Congo; EG: Egypt; ET: Ethiopia; KE: Kenya; RW: Rwanda; SD: Sudan; TZ: Tanzania; UG: Uganda S: Signed; A: Accepted; C: Accession; R: Ratified; E: Entry into Force **Source: TEA 2001**

4.1.4 At National level legislation on environmental education exists in various legislations and policies. Mainly on environment, health, forestry, water, agriculture, etc.

- 4.1.5 Effective and successful coordination, implementation and monitoring of EE&A activities calls for a framework for coordination.
- 4.1.6 The strategic planning process adopted in all Nile riparian countries has resulted in National Environmental Actions Plans (NEAPs) which in turn lead to the formation of environmental enforcement agencies. In all basin countries EE&A activities are coordinated from the environment enforcement agency. In some of the agencies a functional environmental education office exists with a coordinator or director as the head of the unit. The mandate of these departments is to coordinate, supervise and monitor all EE&A activities.
- 4.1.7 The coordination offices notwithstanding, there is still lack of a forum for exchange of information and lessons. Activities are still being carried in small pockets of the country with little or no synergy. It is common within the basin to find the ministry of education coordinates school environmental education activities with little knowledge of the environmental agency. In realisation of this gap, Tanzania in its EE&A strategy, mentions of the need for such a forum and recommended an Annual Stakeholders consultative Forum (ASCF) to be organised by VPO. The newly established national EE&A working group will fill this gap. EE&A component could also assist governments in developing EE&A strategies which are comprehensive, integrated, and participatory.
- 4.1.8 Structures for implementation of activities vary from country to country. Most countries are adopting a decentralised system where implementation is focused from the district level to implementers. To enhance fast and systematic implementation, some countries have developed strategies for both formal and informal EE. Table 5 summaries the institutional framework on implementation of EE&A activities in each country.

Table 5. Legal and Institutional framework

Country	Legal and Institutional framework, coordination of activities.
Burundi	Creation of INECN in 1982 and the Ministry of Environment 1988, National Strategy for environment 1997, a Parliamentary decree (1/010) a code of environment of 2000. Several other decrees with inclination to environment exist. EE activities are coordinated by INECN, which has a department of EE&A.
Congo DR	Congo has law or policy governing EE. Mention of EE could be found in Mining, Forestry, Education and Agricultural act. Coordination of EE activities is through the Ministry of Environment in Kinshasa.
Egypt	Law No. 4 is the legal basis for creation of EE&A, which has a department of EE. This department

	coordinates some activities of EE&A. The ministry of Irrigation has also a department on awareness.
Ethiopia	1993 – Constitution, articles 44 and 92 1994 New Education and Training Policy 1995 Establishment of Environmental Protection Authority – Proclamation 9/1995 1997 – Environmental Policy 2004 – EE strategy
Kenya	1974 – National Environmental Secretariat within the Ministry of Natural Resources 1979-83 Kenya development plan 1988 – Presidential Working Party on Education and Manpower Training 1999 – Environmental management and Coordination Act (NEMC) 1999 – East Africa Community – Protocol for Sustainable Development of Lake Victoria Article 21 2004-National Strategy for Education and for sustainable development 2003 -2007 – Poverty reductions Strategy and Economic Recovery Strategy for Wealth and Employment creation. 2004 – NEMA's National Strategy on Education for Sustainable development. Coordination of EE&A activities throw NEMA
Rwanda	2004 - Established at REMA Decentralised implementation at district level.
Sudan	1992 – HCENR was established Presidential Decree 49 – MOET was established.
Tanzania	1961 - Conservation Declaration 1967 Arusha manifesto
Uganda	1986 – creation of the Ministry of Environment 1991- 1994 – Initiate and completion of NEAP 1994 – National Environmental Management Policy 1995 – NEMA is created through the Act of Parliament, which coordinates all EE activities within Uganda 1997 -1998 Formal and Non formal strategies developed 1999 – National Environmental Awareness and Reporting strategy

4.2 Non Formal Environmental Education

- 4.2.1 Environmental education is not new. Thousands of years ago EE was past from one generation to another through various ways. For example children were brought up by their parents to know what plants and animals could be eaten and how to collect them. On the other hand taboos and superstitions were use to protect some flora and fauna.
- 4.2.2 Non formal environmental education (NFEE) can be defined as all organised and systematic educational activities outside the formal education system (out of school learning). According to education and Training policy of Ethiopia (1994), NFEE is defined as the concrete, focusing on enabling the learners develop problem solving attitudes and abilities.
- 4.2.3 Various strategies have been used to achieve awareness creation at national levels. Governments, local and international NGOs, the private sector and media have awareness, sensitization, lobby and advocacy programmes. The main awareness activities vary from country to country, however they could be group in the following categories

- Capacity building through training
- Media Campaigns
- Lobby and policy advocacy

Table 6. Main national NFEE activities

Country	Main NFEE activities	Institutions active on NFEE
Burundi	EE activities are within current and passed environment projects. Stand alone EE activities are rare. The ministry of Environment provides awareness materials especially during the main world environment related days	The relevant Government Ministries UNDP Few local NGOs like RPEEBU
Congo DR	Awareness creation on miners Main environment days are used to create awareness	WWF in Goma The Ministry of Environment
Egypt	Ministry of Irrigation develops materials to the Public Use of audio and print media Nile days World Environment days are used to create awareness	There are several NGOs creating awareness. The Environment Protection Agency EEAA The Ministry of Irrigation
Ethiopia	Capacity building for farmers through the Bureaus of Education, community skills training centres,	Government Ministries Ethiopian Wildlife and Natural History Society (EWNHS), Lem-Ethiopia Environmental and Development Society, Panos, Institute for Sustainable Development (ISD)
Kenya	Production of awareness materials during main days within the environment calendar. Farmers training especially on soil and water conservation	Government – Ministries of Agriculture, water, livestock and health, KWS, National Museums, etc NGOs – WCK, WWF, EAWS, CARE, Environnemental Liaison Centre International, etc. Private sector- Bamburi cement
Rwanda	Production of materials – Newsletters, Calendars, etc Creating awareness during World days Public workshops	Few but active NGOs – REASON, Wildlife Clubs, etc REMA The Ministry of Environment The private sector - support
Sudan	Training and demonstrations Tree planting Celebrations on main environment related days	Sudanese Environmental Conservation Society (SECS), Environmentalists Society, Sahel International The HCENR, UNDP, etc
Tanzania	Main activities carried out at grass root level by CBOs include training and demonstrations Use of media Use environment days for awareness creation Use Award schemes	Over 200 CBOs involved in EE Local NGOs Private sector like IPP, Breweries Media Houses
Uganda	Has an elaborate strategy on non formal EE with 8 components [Networking, training, materials development, media, research, training manuals, indigenous knowledge, etc.	NEMA coordinates all EE implementation in the country.

4.2.4 Production of awareness material is the main activity for many organisations involved in EE&A. The biggest challenge for this activity is the limited circulation. The cost of production of materials is relatively high, forcing circulation to limited individuals within target group. Circulating electronic material is often cheaper, however, only a few people have access to computers.

4.3 Formal Environmental Education

- 4.3.1 Whereas most countries are putting a lot effort to sensitize adults through the informal environmental strategies, all countries put great hope of creating a better and sustainable for our present and future generation on the hands of Youths being trained and educated in the formal sector.
- 4.3.2 Whereas the opportunity arises there is need to infuse environmental education through the curriculum. Three-prong approach have shown to work; (i) making the environment along with other related subjects like health and science; (ii) preparation of EE materials to teach major environmental issues through carrier subjects and (iii) training teachers on delivery of environmental education themes.
- 4.3.3 Some countries have developed strategies for Environmental education in the formal education which gives directions to all stakeholders from pre-primary to universities in making environmental management practices part and parcel of every subject and activity that is taught or takes place within and surrounding institutions of learning. There are also some initials efforts in integrating environmental concerns in formal education particularly in science and social studies. Table 7 below summarise policy on environmental education, whether EE is fused within the curriculum, the existence of teaching materials and capacity for teachers to effectively deliver EE by country.

Table 7. Summary of EE within schools

Country	Government EE policies and Programs	EE main streamed within the curriculum	Teaching materials	Environmental projects
Burundi	The National Strategy for environment of 1997 emphasises the need to incorporate EE with the curriculum. The ministry of education has EE strategy within there policy	EE is not mainstreamed in formal education both at primary and secondary schools curriculum. However, ' <i>etude du milieu</i> ' is supposed to fill the gap. FAO has supported an evaluation document for EE in primary schools.	Lack of incorporation of EE within the curriculum, hinders the development of EE teaching materials.	A few scattered schools have environmental clubs, mainly supported by NGOs
Congo DR	The is policy on EE in schools	EE is not mainstreamed within schools curriculum Use of handbooks in natural sciences is the main entry to EE ' <i>etude du milieu</i> ' is indicated as the main entry point	Lack of policy has made materials development difficult. A few handbooks for primary schools on carrier subjects	There are few schools with environmental clubs
Egypt	The Environment law No 41	EE is mainstreamed within the current curriculum	Teaching mainly through carrier subjects – biology and geography Ministry of Irrigation produces materials for schools	Ministry of Irrigation, EEAA and NGOS work with schools and promote school projects mainly through green houses and environmental projects
Ethiopia	Education and Training Policy 1994 pg 56 Environment Policy of 1997	EE topics are infused in Grades 5-8 In secondary schools grade 9 biology and grade 12 geography text books	There is lack of adequate EE teaching materials	Initiated by 1995 EE project funded by SIDA. Other NGOs like EWNHS also promote school projects.
Kenya	White paper on Education Current strategy on Education and sustainable development	Mainstreamed since the early 80s	Teaching is mainly across subjects and topic based. Main materials are biology and geography books	Wildlife clubs of Kenya, KOEE and other NGOs promote environmental projects within schools
Rwanda	There is no policy and therefore strategy on EE within schools.	EE is not mainstreamed within the current school curriculum. Teaching through carrier subjects	No stand alone modules on EE only through biology and geography books	UNICEF is piloting environment projects within schools ' <i>Jardin</i> '
Sudan	Workshop of 1983 Conference on policies on Education 1990	Mainstreamed through carrier core subjects	Man and the universe Biology and geography books	SECS works with schools and promotes environment projects
Tanzania		EE is mainstreamed within the curriculum	WWF Tanzania has produced several books and a teachers training manual.	WWF and GreenCOM II Tanzania have introduced environmental project to many schools
Uganda	Government White paper on Education 1992 Article 88 of NES – integration National EE strategy for formal education	Mainstreamed through article 88 of NES	Training of curriculum developers Production of Teachers training manual	Eight year of implementation of strategy has seen many schools active in projects

- 4.3.4 Through community projects, students can apply knowledge acquired in the classroom as well as develop values and skills for improving environmental conditions. Within the basin this method is extensively used. The projects focus mainly in three broad areas (i) on the development of positive individual environmental behaviours among students, such as tree planting, maintaining nurseries and orchards, waste disposal techniques; (ii) other projects involve environmental assessment of community problems such as solid waste disposal, pollution of river beds, deforestation and soil erosion and (iii) the execution of environmental education and promotion of actions in support of solving identified environmental problems.
- 4.3.5 School environmental education projects are common in all country. Various projects are being undertaken. These can be grouped into three main domains:-
- Affectives – these are in the form of debates, music and dance, materials development, community visits, environmental research and celebrating environmental days.
 - Skills domain. Energy saving, control of soil erosion, nurseries, waste recycling, water saving, intensive agriculture, etc.
 - Cognitive. Knowledge base on environmental education.

4.4 EE within Tertiary Institutions of learning

- 4.4.1 Introducing environmental education into universities follows laid down procedures by the university senate. Currently, only Makerere university school of education offer stand alone MSc course on environmental education. In the same university, a bachelor's course offers units of environmental education. In other universities, environmental education is infused within natural science courses. Table 7 below summarizes courses, modules or topics and institutions which currently offer the training

Table 8. EE courses, modules and topics currently being offered

Country	EE courses, modules or subjects	Main institutions
Burundi	There are no EE&A courses or modules taught in Universities within Burundi. EE is mentioned within certain natural sciences courses.	University of Ngozi National University of Burundi
Congo DR	No EE stand alone course, mainly through natural sciences	University of Kinshasa Institut superieur de developpement rural des grands lacs
Egypt	EE courses offered at various universities	Environment Institute Cairo University, etc
Ethiopia	Only environmental topics infused in some courses	Addis Ababa – Geography Department, Bahr Dar University Makele University
Kenya	Kenyatta University has a course at MSc level on EE, School of environment studies at Moi University offer topics on EE. First years in teachers training colleges are offered EE module.	Maseno Universty, Moi University and Kenyatta University, Teacher training colleges
Rwanda	Universities offer topics on EE through natural science courses. Two MSc courses have been initiated which will increase the topics. Kigali Institute of Education offers a few contact hours for first year students while Kigali Health Institute has a course of EE	KIE and KHI
Sudan	Teachers training courses by Hope in the Desert project 1994 Development of activity manual and teachers guide 3 levels of university – established faculty of environmental studies, established courses and with only a course of environment	Juba, Kordofan, El Fasher, Malakal, Ahlia, Gezira, IES
Tanzania	University of Dar es salaam, school of education and school of geography have topics on EE	Sokoine University, Dar University
Uganda	Stand lone MSc on EE and topics within the geography department. Kyambogo university offers topics on EE	Makerere and Kyambogo Universities

4.4.2 There are other tertiary institutions which offer EE as subjects. These are mainly teacher training colleges. In Kenya EE has been included in the training of primary school teachers since 1986 in science, agriculture, history and civics. At a diploma level, EE has been included in the training of secondary teachers since 1974 and 1985 in sciences and geography [Lindhe *et al* (1992)].

4.5 EE&A and Media within the basin

4.5.1 The media has both opportunity for communicating with the masses and has tremendous power. Within the basin, many environmental organisations make effective use of the media in various forms. For example in Ethiopia, journalism as a profession is not well developed. Because of this and other reasons there is no specialization and hence one can hardly speak of existence of networks of environmental

journalists. Five countries within the basin have environmental journalists associations. These include: -, Congo DR, Kenya, Rwanda, Tanzania, and Uganda. Table 9 gives a summary of main media types in each country.

Table 9. Main media types in each country

Country	Env Radio programs	Env. TV programs	Newspapers	Existence of Env Journalists Association
Burundi	Yes	No	Yes – very frequent	None
Congo DR	FM radios in Goma	None	Yes	Yes – M.E.T
Egypt	Yes	Yes	Yes	No
Ethiopia	Yes	None	Not frequent	No
Kenya	Yes – every sunday	Yes	Yes 3 newspaper on Thursdays.	Yes - HEMEJ
Rwanda	No only on health issues	None	To initiated soon	Yes - REJASS
Sudan	Yes	Yes	Yes	No
Tanzania	Yes	Yes	Yes	Yes - JET
Uganda	Yes	Yes	Yes	Yes - EJAU

4.6 Active NGOs and case studies within the Basin

4.6.1 The EE&A component of NTEAP will work in partnership with community groups and NGOs. This is because of their ability to reach the rural poor in remote areas and to promote local participation; their effective use of low-cost technologies; and their propensity for innovation.

4.6.2 Within the basin there are several CBOs, NGOs, international organisations and conduct some form of EE and A activities. Majority of these implement EE with environmental activities. In addition, these NGOs work most with schools.

5.0 Monitoring and Evaluation – Baseline

- 5.1 Monitoring is a systematic and continuous collecting and analysing of information about the progress of a piece of work over time. The results of monitoring are then feed directly into the planning process for any necessary changes. Environmental education and awareness activities are usually difficult to evaluate.
- 5.2 Evaluation is the assessment at one point in time of the progress of a piece of work. Specifically evaluation concentrates on whether the objectives of the piece of work have been achieved and what impact has been made. In some cases evaluation is usually categorized as *summative* evaluation, which measures the project success or failure by comparing outcomes with the original goals, or as *formative* evaluation, which measures project progress against ongoing benchmarks.
- 5.3 Evaluation is difficult because it involves a great deal of thinking, planning, and imagining the future. During the program design, measures of success for each activity were indicated (PIP pg 58). An initial country review was carried out to assess country status on environmental education issues. The data is supposed to measure changes that can be attributed to the project.
- 5.4 Assessed and formative research conducted to determine initial knowledge, attitudes, and behaviors, a type of evaluation is in progress. Baseline data, collected before the intervention, will help measure changes that can be attributed to the project

6.0 Conclusion and Recommendations

6.1 Based on the information analyzed, the following conclusions can be drawn;

- Environmental education and awareness linked to specific environmental issues are being carried out both at local and national level. There analysis cites only one example of cross border EE&A project and none of transboundary nature.
- All the Nile basin countries have legislation on environmental education. This is either within the environment law or in other sectors like education, water, health or forestry.
- Specific policy and implementation strategies of environmental education are lacking in many countries. The awareness of the importance of these strategies in shaping and facilitating activity implementation is high prompting several countries to develop them.
- Informal environmental activities are implemented with a long time strategy, hence are normally one time activities mainly in world days like environment wetlands desertification, etc.
- Formal EE is partly infused within the current curriculum for schools. In countries where this infusion is done, delivery by teachers and teaching materials are the main constraints.
- The role of media in awareness creation is highly used within the basin. Radio is the most used media
- There are several NGOs involved with awareness creation within the basin. NTEAP can collaborate with these to fast track its implementation.

References

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Annex 1

Table 1. Nile Basin Riparian Selected Fundamental Data:

Country	Country Area '000 (Km ²)	Area within the Nile Basin '000 (Km ²)	% of the total Nile Basin Area	% of the country in the Nile Basin	Basin population 1990 (millions)	Country population 1990 (millions)	Country population 2002 (millions)	Population in 2025 Mil.	% of the country's Population within the Nile Basin	Basin population Density (hab/Km ² 1990)	Arable land%	Internal Renewable Water Resources (IRWR) (Km ³ /year)	Actual Renewable Water Resources (ARWR) (Km ³ /year)	Dependency Ratio %	IRWR per inhab. In 1994 (m ³ /inhab)	ARWR per inhab. In 1994 (m ³ /inhab)	Average Rainfall in the basin Minimum (mm/year)	Average Rainfall in the basin Maximum (mm/year)	Irrigated land 1998 Sq.km	Hydropower potential/installed megawatt	Agricultural GDP 2004 %
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Burundi	27.8	13.3	0.4	47.6	3.2	5.5	7.0	13.1	58	246	30	3.6	3.6	0.0	579	563	895	1,570	740	289/12	41
DR Congo	2,345.4	22.1	0.7	0.9	1.8	43.9	54.0	99.5	4	81	3	935.0	1019.0	8.2	21,973	23,211	875	1,915	110	120,000/2486	55
Egypt	1,001.5	326.8	10.5	32.6	47.6	56.3	66.0	94.0	85	172	3	1.7	58.3	96.9	29	926	0	120	33000	3210/2700	17
Eritrea	121.3	24.9	0.8	20.5	0.9	3.1	4.0	-	30	36	4	2.8	8.8	68.2	815	2,492	540	665	220		17
Ethiopia	1,127.1	365.1	11.7	32.4	19.5	55.1	67.0	112.3	35	53	10	110.0	110.0	0.0	2,059	1,998	205	2,010	1900	4000/230	52
Kenya	582.7	46.2	1.5	7.9	9.1	28.3	31.0	77.6	32	197	7	20.2	30.2	33.1	739	1,069	505	1,790	670	814/354	19
Rwanda	26.3	19.9	0.7	75.5	5.7	7.9	8.0	18.1	72	286	32	6.3	6.3	0.0	833	792	840	1,935	40	600/56	45
Sudan	2,505.8	1,978.5	63.6	79.0	20.9	28.1	32.4	59.6	74	11	7	35.0	88.5	77.3	1,279	3,150	0	1,610	19500	380/225	39
Tanzania	945.1	84.2	2.7	8.9	4.9	29.7	35.0	84.8	16	58	4	80.0	89.0	10.1	2,773	2,998	625	1,630	1550	4000/259	45
Uganda	236.0	231.4	7.4	98.0	16.0	21.3	23.0	55.2	75	69	25	39.2	66.0	40.9	1,891	3,099	395	2,060	90	1200/156	43
Total	8,919.1	3,112.4	100.0	34.9	129.6	279.1	301.4	614.2	46	41.6										133893/6278	

Source: Diana R. Karyabwite, UNEP/DEWA/GRID-Geneva, Water Sharing in the Nile River Valley, January-March 1999

All data approximated to the nearest one decimal place

Column 8-World Development Report 2004, The World Bank

Columns 11,19,21-CIA, The World Fact Book,2004

Column 9, 20-Yacob Arsano, Trading Places, Alternative Models of Cooperation in the Horn of Africa, Horn of Africa Series2, Life and Peace Institute, Uppsala. June 1996.,

Note: Primary sources from which the above authors quoted the above data are not stated here