NTEAP
Environmental Education and Awareness Program

Kenya Country Environmental Education and Awareness Review

By

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Executive Summary:

Kenya is one of the nine Nile Basin initiative countries. Kenya, like the other East African countries has done fairly well in biodiversity conservation through its parks and reserves. Despite this, environmental pollution and degradation has continued to catalyse poverty, hunger, and disease.

The Kenyan government recognized these problems and issued various government policies and documents to address them. All government development plans as well as the recently concluded Poverty Reduction Strategy Paper and the Economic Recovery Strategy for Wealth and Employment Creation 2003 – 2007 recommend environmental education as a means to address environmental problems and issues. A problem with EE in Kenya has been the implementation of policies enshrined in government development plans and other policy documents. The National Environment Management Authority (NEMA) has started on developing a National Strategy on Education for Sustainable Development.

At the regional level Kenya is a member of the East African Community (EAC) and the Intergovernmental Authority on Development (IGAD). The East African Community has developed the Protocal for Sustainable Development of Lake Victoria. Article 21 of the protocal is on environmental education. IGAD also recommends the promotion of environmental education and training among member states.

The teaching of EE in Kenya today is generally done across subjects and principally through the science subjects. This cross curricula approach has been more subject and topic based. The EE content matter has to this day not been formally prescribed and teachers of the various science subjects were encouraged to sort out and emphasise during their teaching those science topics that have environmental implications. And this loose prescription for environmental education by government is ignored by teachers preoccupied with the demands and needs of the examinations.

Non-formal EE programmes in Kenya are carried out by the various government ministries and/or departments, civil society organizations, and other private organizations and institutions. These actors use various methods to deliver their EE programmes to the Kenyan public. Some of the methods used include: posters, slides, films, magazines & newsletters, extension services, etc. There is no coordination of what these institutions do or plan to do.

The most important actors in EE & A at the tertiary institutions are the teacher training colleges. All the Diploma teachers training colleges offer a one year compulsory course in environmental studies/science for all trainees. Students taking the Bachelor of Education degree at all the universities take at least a one semester course in EE.

There are two projects on EE & A initiated at the basin and both pertain to the Lake Victoria basin. These two projects are both supported by Nordic institutions. The first project is the Lake Victoria Catchment Environmental Education Programme (LVCEEP). The purpose of this programme is: to promote and influence change in attitude and

behaviour of the target catchment communities and schools towards their immediate environment while sustainably using and managing natural resources. The second project is the Lake Victoria Youth Cooperation (LVYC). This project is aimed at sharing experiences between the youth of the Baltic Sea countries and the youth of the countries of the Lake Victoria basin.

There are a number of opportunities and constraints for EE & A projects and programmes in Kenya as outlined in the paper. The are also some lessons learned from the activities on EE & A carried out in the country. There is need to develop a participatory monitoring and evaluation process involving all EE & A stakeholders. Other recommendations made include:

- Develop a practical policy and institutional framework for EE & A in Kenya
- Inventory of EE & A projects and a programmes in Kenya**:** There should be a survey of all on-going EE activities.
- In-service training for teachers and others involved in EE & A activities
- EE & A be inculcated in the curriculum
- Outreach programmes be developed for rural communities. This will include mobile programmes that reach rural areas with films, videos, lectures, demonstrations, posters, etc
- Set up a national EE & A learning resource center where materials can be developed and teachers provided with advice and support
- Launch an African Journal of Environmental Education where findings, best practices, and ideas can be shared and disseminated. African practioneers and researchers in EE find it difficult to access foreign journals and/or publish their work there.
- Tap indigenous technical knowledge for EE & A initiatives
- Involve the media in EE & A campaigns

Background:

Kenya is a country in East Africa and the equator cuts across the country almost in half. Kenya shares a boarder with most Nile basin countries. Tanzania lies to the South, Ethiopia and Sudan in the North, Somalia in the East and Uganda to the West. Kenya gained its independence from Britain in 1963 and many of the present day government and private sector operations trace their origins to British colonial legacy.

The topography of Kenya is varied and includes the scenic great Rift Valley. The low-lying coastal region is fringed with coral reefs and fertile soils. Immediately following the low altitude coastal belt is the mid altitude plains covered by grassland and bushland. At an altitude of about 1,524 m and 300 miles inland, the plain gives way in the southwest to a high plateau, rising in parts to 3,048 m, in which about 85% of the population and the majority of economic enterprise are concentrated. The northern section of Kenya, forming three-fifths of the whole territory, is arid and of semi desert, as is the bulk of the southeastern quarter. In the high plateau area, known as the Kenya Highlands, lie Mt. Kenya (5,200 m), Mt Elgon (4,322m) and the Aberdare Ranger (rising to over 3,963 m). The plateau is bisected from north to south by the Rift Valley, part of the great geological fracture that can be traced from Syria through the Red Sea and East Africa to Mozambique. The principal rivers are the Tana and the Athi, flowing southeast to the Indian Ocean, the Ewaso Ngiro flowing northeast to the swamps of the Lorian Plain, and the Nzoia, Yala and Gori, which drain eastward into Lake Victoria.

Rainfall is generally seasonal in most parts of Kenya. The coast, eastern plateaus, and lake basin experience two rainy seasons: the “long rains” which occurs from March to May, and the “short rains” which starts from October and ends by December. A long single rainy season lasting from March to September is experienced in the highlands of western Kenya. Periodic droughts or delayed rains can be experienced in any or all parts of the country.

The country is one of Africa’s premier tourist destinations because of its vast wildlife and sandy beaches along the Indian Ocean. Some of the country’s wildlife parks and reserves like the Amboseli and Maasai Mara are world famous. Here one can see many of the big game such as the Buffallos, Elephants, Giraffes, Lions, Rhinoceroses, Zebras etc that East Africa is famous for.

Since the establishment of the first national park in 1946 the population of the country has increased from approximately 6 million to about 31 million people today and continues to increase at the rate of about 3%. This does not augur well for the future of the country in terms of its overall development. As the population increases the need for more land for agriculture, industrial development and human settlement will put heavy demands on land protected as parks, reserves, and fragile wetlands such as find in Lake Victoria.

The Nile basin section of Kenya is one of the most highly populated areas of Kenya. Increasing poverty, disease, and hunger continue to bedevil the inhabitants of the area. A

baseline survey of two villages on the shores of Lake Victoria reveals the environmental problems, issues, and challenges confronting the residents of the area.

At independence Kenya like other developing countries invested heavily in developing education in order to speed up development and reduce poverty, hunger, and disease. Education continues to receive priority by government with about 30% of the annual budgetary allocation. However during the last 40 years of independence environmental degradation and resulting human health and well being have been greatly compromised. It is in this view that this review examines what is being done in Environmental Education and Awareness projects, programmes and activities in Kenya. It will be important to particularly examine whether EE and A projects and activities in Kenya have addressed the above problems by developing programmes on the following:

- The link between poverty and environmental degradation in the school curriculum as this is the terminal formal education experience for the majority of Kenyans
- EE and A curriculum design and development to reflect the aspirations, needs, and challenges facing communities.

Policy and Institutional Framework:
Following the recommendation of the World Summit on Sustainable Development (WSSD) the United Nations General Assembly declared the decade 2005-2014 as the United Nations Decade of Education for Sustainable Development (UNDESD). Also Chapter 36 of Agenda 21 of the Rio Conference states amongst others that "*Education, raising of public awareness and training are linked to virtually all areas in Agenda 21, and even more closely to the ones on meeting basic needs, capacity-building, data and information, science, and the role of major groups*." Similar sentiments are expressed in the Declaration and Recommendations of the Tbilisi Intergovernmental Conference on Environmental Education of 1977. Education for sustainable development is also emphasized in the Jomtien World Conference on Education for all (1990), the UN Millennium Development Goals, The Dakar Framework for Action (2000), and the NEPAD Environment Initiative (2001).

Just as the Global community has gone through different phases of policy recommendations on environmental education, Kenya has similarly evolved its EE policy and institutional frameworks. Kenya is now working on developing a National Strategy for Education for Sustainable Development to coincide with the UN Decade of Education for Sustainable Development. The National Environment Management Authority (NEMA) spearheads this strategy. NEMA was established to:

> "to exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of government in the implementation of all policies relating to the environment."

NEMA replaced the National Environment Secretariat (NES) which was established in 1974 under an administrative circular from the Office of the President. The functions of NES were very similar to those of NEMA but without a legal backup its effectiveness

was limited. The mandate of NEMA is wide and having started work recently (2001) its capacity to undertake and fulfill its mandate is still evolving. Before NEMA was established the government produced Sessional Paper No. 6 of 1999 on Environment and Development. It is in this paper that the idea of a national environmental education strategy was first proposed. In Sessional Paper No. 6 of 1999 the government will endeavour to:

- develop a national strategy on environmental education
- involve the mass media in providing environmental education
- prepare information packages in a simple language for exclusive use in educational institutions and at other levels of the society
- develop appropriate information, education, and communication programmes and strategies that use radio, television, documentary films, newspapers, magazines, "barazas", songs, plays, and posters to disseminate information emanating from environmental activities
- support and provide in-service courses on environmental management for policy and decision makers, planners, managers, teachers, and industrialists
- incorporate environmental education into extension work as well as the regular school, college, and university curricula as a mandatory subject; and
- enhance partnerships for cooperation and collaboration in EE by involving local communities and the informal sector in dissemination of environmental information
- promote utilization of indigenous knowledge in environmental education

The provincial and district staff for NEMA were recruited during the second half of 2004 and they still remain understaffed. It is recognized that NEMA cannot by itself undertake all the activities expected of it and thus the emphasis on its coordination role. Much of the work will done by partners, collaborators, and other stakeholders. The major contribution of NEMA and EMCA to the environment scene is that it is now possible to take to court those who abuse and degrade the environment. However, its major limitation is that it cannot enforce any organization or institution to undertake any action or activity it is supposed to coordinate.

The Act creating NEMA known as the Environmental Management and Coordination Act (EMCA) No. 8 of 1999 gives specific mandate to NEMA to be involved in EE and A in Kenya. The Act in section 9(2m) states:

> "undertake, in co-operation with lead agencies, programmes intended to enhance environmental education and public awareness about the need for sound environmental management as well as for enlisting public support and encouraging the effort made by other entities in that regard."

Although the National Strategy for Education for Sustainable Development is still being formulated and worked on, there has been no such strategy and proper policy for EE in this country prior to this. Despite this there has been numerous government guidelines and policy intentions in various government development plans and education policies.

The Kenya Development Plan 1979-83, asserted that, *"…environmental consideration must be brought to the attention of every citizen…"* Successive development plans have continued to echo this recommendation without specifying any concrete actions plans to implement the recommendations.

Two recent and important government documents and supported by the donors and partners are the Poverty Reduction Strategy Paper and the Economic Recovery Strategy for Wealth and Employment Creation 2003 –2007. Both these documents state the importance of inculcating environmental education and awareness among pupils and the general public.

Kenya is also a member of the East Africa Community established under the Treaty for the Establishment of the East African Community signed at Arusha on November 30th, 1999. The community has a Protocal for Sustainable Development of Lake Victoria Basin. Article 21 of the protocal is on Public Education and Awareness. The article calls for the cooperation among members and with other international institutions in developing educational and public awareness programmes for the conservation and sustainable use of the resources of the basin. Kenya is also a member of the Intergovernmental Authority on Development (IGAD). IGAD has a programme for promoting environmental education and training in the IGAD Region. The objectives of the programme are to:

- Provide education and training to improve human capacities in water resource management.
- Create awareness regarding shared trans-boundary water resources.

A problem with EE in Kenya has been the implementation of policies enshrined in government development plans and other documents. NEMA has recently taken interest in environmental education and awareness by working on developing a National Strategy on Education for Sustainable Development. The document will give guidelines for EE and Awareness practitioners but cannot force the implementation of these by any of the institutions involved in EE. The following institutions and organizations are involved in aspects of environmental education and awareness:

- Ministry of Education, Science, & Technology
- Regional soil conservation unit (RSCU/SIDA)
- Wildlife Clubs of Kenya
- Ministry of Agriculture,
- Ministry of Livestock & Fisheries.
- Nairobi University
- Moi University School of Environmental Studies & the Faculty of Natural Resources & Wildlife Management.
- International Development research Centre (IDRC)
- Meteorological Department
- National Environment Management Authority
- Kenyatta University – Faculty of Environmental Studies

- Kenya Energy and Environment Organization
- CARE Kenya
- Kenya Science Teachers College
- Kenya Institute of Education
- Kenya Polytechnic
- Forest Action Network
- Environment Liaison Centre International
- Uvumbuzi Club
- Greenbelt Movement
- Econews
- East African Wildlife Society
- The World Conservation Union (IUCN)
- World Wide Fund for Nature
- African Conservation Centre

Formal EE Programmes:

Kenya is a country with a heavily centralised education system where teachers, as in many other developing countries, accept their role as curriculum policy implementers. All public schools in the country follow a set national curriculum and any changes made are usually initiated and driven from the top hierarchies of government. And many changes have occurred through presidential decree. The Education Act Cap. 211 of the Laws of Kenya does not prescribe any particular teaching discipline or styles for Kenyan schools. It principally concerns itself with the following:

- Promotion of education
- Management of schools
- Registration of unaided schools
- Inspection and control of schools
- Examinations and Diplomas

The Act therefore says nothing about environmental education or any other subject offered and taught in Kenyan schools. Since independence Kenya has constituted 4 commissions on education. In addition to these commissions is the National Conference on Education and Training organised by the Ministry of Education, Science, and Technology in November 2003. The commissions and their recommendations for EE is as follows:

- Kenya Education Commission Report of 1964 and popularly referred to as the Ominde Report: This report is perhaps the most exhaustive one among all education commissions in Kenya on the curriculum. But despite its deep examination of the curriculum it did not mention EE in the report. Perhaps environmental issues were not on the agenda globally or in Kenya at the time and the committee ignored it. The commission was writing a blue print for a nation that had just emerged from colonialism and its concern for a functioning independent Kenya was evident. The Commission gave strong emphasis on technical and vocational education and skills.

- The National Committee on Educational Objectives and Policies of 1976 and popularly referred to as the Gachathi Report: The Commission described the relevant subjects for the curriculum but did not mention EE for both the primary and secondary levels. However, it did give a recommendation for applied subjects such as agriculture and mentioned conservation in Recommendation No. 140. It states:

  > "To give stronger emphasis to other applied subjects in secondary schools, including industrial education for which the programme should be expanded, using equipment related to small-scale farming and to conservation."

- The report of Presidential Working Party on Education and Manpower Training for the Next Decade and Beyond and published as Sessional Paper No. 6 of 1988 (also referred to as Kamunge Report) recommended:

  > "(a) Environmental Studies be made part and parcel of education and training curricula and be taught at all levels of education systems"
  >
  > "(b) Concerted efforts be made to educate members of the public on methods of, and their specific role in conservation and enhancement of environment".

- Commission of Inquiry into the Education System of Kenya of 1999 also referred to Totally Integrated Quality Education & Training (also referred to as the Koech Report): The report of this commission made no recommendation in the area of environmental education.
- The National Conference on Education and Training of November 2003 came up with a Policy Framework for Education, Training, and Research awaiting parliament to adapt it as Sessional Paper No. 1 of 2005. Unfortunately the draft of this document contains no recommendations or directions for EE. Until it is cleared by parliament the document at the moment remains as a draft.

Though Koech report recommended changes in the education system it is yet to be seriously considered. Kenya made changes to its education system and structure only once since independence. In 1985 Kenya made a dramatic change of the school system. The former system which was inherited from colonial government was not thrown away because it was a colonial system (as was the case in many developing countries as soon as they gained their independence), but mainly because it was felt to be inappropriate and did not meet satisfactorily the challenges and needs of the country at the time.

Prior to 1985, no major changes were made to the curriculum and the school system as a whole. The reason behind this was the implicit assumption by those in-charge of curriculum planning in particular and the leaders of the country in general that since the system worked well for them and helped them in their struggle against colonialism it was a "good" one. In 1985 the government overhauled the system and naturally curriculum planners in the country started devising a suitable curriculum for the new system. Ironically it was the government that took the lead in these curriculum changes and curriculum planners who should have been in that position were left tailing behind.

The new science curricula developed, apart from fulfilling the national aims of the new system had two other objectives to achieve. First it was to address itself to the question of the role of science in the national development process and secondly to sort out the elements within the science curriculum that is appropriate to the needs of the nation and which should constitute the 'diet' of the Kenyan pupil. This process noted environmental issues as being a major global concern and strongly advocated that environmental education feature at all levels of the education system from primary to university. Science was therefore seen as the main tool for delivering EE in Kenya.

The teaching of EE in Kenya is today generally done across subjects (GoK 1994) and principally through the science subjects. This cross curricula approach has been more subject and topic based. The EE content matter has to this day not been formally prescribed and teachers of the various science subjects were encouraged to sort out and emphasise during their teaching those science topics that have environmental implications. This was done because of what the government though were constraints imposed by the changed formal education system. The new schooling system had eliminated the former two year A' levels and its advocates and the universities had to be pacified. The universities complained of the problems they would encounter with what they considered to be unprepared candidates for university education. Thus, the curriculum for the new secondary cycle had to be "strengthened" with a little dose of some of the former A'level content. Also, since over 90% of the graduates would not continue with higher education, the number of subjects in the curriculum also increased in order to adequately prepare them for life. Previously the compulsory number of subjects at the secondary cycle were 6 and this was increased to 10 which was later reduced to the present 8 following a national outcry from parents and teachers. Thus, with increased subjects and subject contents it was hardly possible for the government to prescribe anything extra on to this load. They felt it safe to transfer that responsibility to the teachers with the strong advice that environmental issues be taken seriously during the teaching and learning process. But the teachers' response to this challenge has been greatly hampered by the very nature of the country's education system.

In a country where formal education from primary level is still not available to all, success at examinations and formal qualifications remain the passport to future progress and well being. Teachers respond more to the needs of the examinations to satisfy both parents and pupils. The fame and prestige that come with being the best school or for producing the best candidate in the country, the province or the district overrides anything else that good education might imply or mean. And the loose prescription for environmental education by the government is easily done away with.

The Kenyan biology and Geography syllabuses does prescribe and require the coverage of aspects of ecology and conservation. Currently two biology syllabuses (i.e. biology and biological sciences) are described and on offer. Schools determine which of the syllabuses to follow and/or which students take which course. The biology syllabus is taken by the more resource endowed schools and the higher ability pupils. The biological sciences syllabus is followed by the poorer schools and the lower ability pupils. These syllabuses are not from the Ministry of Education, Science & Technology and its

directorate and inspectorate divisions but from the Kenya National Examination Council. It is through this syllabuses that both pupils and teachers get their cue for the real "aims" of the school ecology.

In the Biological sciences ecology is covered under section 33.11 of the syllabus called Environmental Studies and Human Health. Here the learners are expected to:

(a) define the terms ecology, habitat and ecosystem
(b) identify and construct food chains and food webs
(c) Explain the effect of man's activities on the environment
(d) suggest methods of controlling the negative impacts of man's activities on the environment
.....
(h) discuss methods of regulating human population growth and the effect of a rapid population growth rate on the quality of life.
(Kenya National Examinations Council, 2000, p. 144)

In the biology syllabus ecology is covered under section 29.11 of the syllabus called Ecology. Surprisingly unlike in biological sciences where the section is headed with a title reflecting human health also, in the biology syllabus the section does also deal with human health but is simply headed as ecology. The ecology coverage is much wider in this syllabus. Here, the learners are expected to:

(a) to define the terms ecology, habitat, biomas, ecosystem, and carrying capacity
(b) describe the interrelationships of organisms in the ecosystem
(c) identify the physical and biological factors in a given ecosystem
(d) relate adaptations of organisms to various habitats
(e) explain the use of various methods of carrying out ecological investigations
(f) design and carry out a study of a named habitat
(g) identify and construct food chains and food webs
(h) explain the flow of energy in the ecosystem
(i) identify and describe factors that affect population growth in general and relate these to human population regulations
(j) explain the effects of man's activities on the environment with regard to soil, water, air, fauna and flora (animals and plants)
(k) suggest methods of controlling the negative impacts of man's activities on the environment
(i) differentiate between saprophytism, parasitism and symbiosis.
(m) explain the importance of fungi and bacteria as decomposers.
(Kenya National Examinations Council, 2000 pp. 69 - 70)

In Geography environmental issues is covered under section 28.0 called conservation of the environment. Here the learners are expected to:

(a) Define the terms:
(i) management

(ii) Conservation
(iii) environment

(b) explain why it is necessary to conserve and manage the environment
(c) identify environmental hazards
(d) list ways and means of combating different environmental hazards

However, no links are made to sections 8.24 and 8.27 on rivers and lakes respectively to explore how environmental issues are linked to the rivers and lakes of Kenya/East Africa.

At the pre-primary and primary level EE is integrated in the whole curriculum. Pre-primary education activities involving EE include plants of local environment, animals, weather, and seasons, air and sun. At the primary level EE is covered in the following subjects: Geography, Science, Home Science, and Agriculture.

Primary teacher training colleges have now a new syllabus for Science, Home Science, and Geography to be taken by all trainees. Topic No. 10 in this syllabus is Environment and has the following objectives:

- define environment
- describe the components of the environment
- observe different habitats
- describe different types of habitats
- explain interdependence between organisms
- construct food chains and food webs
- explain how various organisms are adapted to their habitats
- state factors that affect population growth
- define pollution
- describe different types of pollution and their causes
- state effect of pollution on environment
- describe control measures of pollution
- describe the measures of conserving soil, water, plant and animal life
- describe ways of handling waste.

The impact of the examinations is not only on the teachers but also on the book publishers. The coverage of EE issues on school textbooks is inadequate. Printed materials on EE are mainly done by NGO's that have an EE component in their programmes. The materials developed address more the issues of concern to the NGO than the requirements of the curriculum or requirements of the specific school grade or level. Various printed materials have been produced at different times and no attempts have been made to document them. Other EE resources include environmental education centers and the only once that exist in Kenya are those of the Wildlife Clubs of Kenya. These centers in Nairobi, Nakuru, and Kisumu provide pupils and teachers residential facilities to view EE audio-visual materials, organized lectures, and out door facilities such as nature trails. The provision of EE teaching and learning materials in Kenya is far from being sufficient.

Many EE activities carried out in schools are mainly done as part of what used to be referred to as extra-curricula activities but now renamed as co-curricula activities. These are initiatives done by school wildlife and environmental clubs. Club activities include outdoor activities, visits to parks and reserves, establishing school tree nurseries, fish ponds, bird feeding tables, etc. Some schools have greening activities and label them as eco-schools.

Despite all the recommendations to make EE be integrated within the subjects, it is view of many educationalists, teachers, and curriculum experts that EE is yet to be mainstreamed within the education system in Kenya.

Non-Formal EE Programmes:
Non-formal EE programmes in Kenya are carried out by the various government ministries and/or departments, civil society organizations, and other private organizations and institutions. All programmes and activities here are not organized and coordinated. This is so because there is no policy or legal framework for non-formal EE programmes.

Government institutions providing non-formal education include the Kenya Wildlife Service, Ministries of Agriculture, Water, Livestock, and Health, Development Authorities, and the National Museums of Kenya among others. NGOs have also contributed significantly to non-formal EE in the country. Almost all conservation and development NGOs operating in Kenya have developed various EE programmes on particular themes or focusing in certain parts of the country. Among the notable NGOs in this field include: Wildlife Clubs of Kenya, World Wide Fund for Nature, East Africa Wildlife Society, CARE, and Environment Liaison Centre International among others. The private sector have had some impact on non-formal EE in Kenya. The most notable contributor to EE among the private sector is the Bamburu Cement Ltd who rehabilitated and restored their quarry. This is now used for tourism as well as a learning center. Some specific projects and activities of some of these institutions are:

Environmental Education and Awareness at Tertiary Institutions
The most important actors in EE & A at the tertiary institutions are the teacher training colleges. Kenya Science Teachers College was the first tertiary institution in Kenya to offer a compulsory one year course in environmental science to all its students since 1976. This example has now been taken up by the other 4 Diploma teacher training colleges. The primary teacher training colleges offer EE courses for all their trainees.

The faculties of education at all the universities offer EE courses to all Bachelor of Education degree students. Egerton, Kenyatta, and Moi universities have full fledged faculty/school of environment. The School of Environmental Studies at Moi university is a research and postgraduate school. The Faculty of Environmental studies at Kenyatta university offers degree courses in Environmental Management & Planning, Environmental Science, and Social Cultural Environment. The faculty of Natural Resources at Egerton offers degrees in Range Science, Natural Resources, and Environmental Science. The Geography Department and Faculty of Agriculture at

Nairobi University offer an MA programme in Environmental Management and degrees in Range Sciences respectively. Maseno University offers undergraduate courses in environmental studies. All universities encourage their students to take at least one semester course in environmental studies though this is not compulsory.

Though most of these universities have faculties of environmental studies, their Bachelor of Education students mainly get one semester course in environmental education/science/studies as shown below.

Kenyatta University offers at first year two courses as follows:

- Environmental Education: For all B.Ed students
- Man and Environment: Mainly for B.Ed (Geography) students

Nairobi University offers the following:

- Environmental Science: For all B.Ed students during the first year
- Major World Environments: For B.Ed (Geography) students at first year
- Environmental Ethics: Elective course at third year
- Environmental Economics: Elective for B.Ed (Economics) students

Moi University offers the following:

- Environmental Education: For all B.Ed students at fourth year

Egerton University offers the following:

- Introduction to environmental science: For all B.Ed students during the first year.

Catholic University of East Africa offers the following:

- Environmental studies: A General Studies course for all B.Ed students at first year
- Environmental Education: For all B.Ed students. This is a third year course.

University of Eastern Africa, Baraton offers the following:

- Environment and Society: This is a first year course under the General Education Requirement in the Environmental Awareness section. It is the only course in this section and is available to all students.
- Environmental Education: A third year course as an elective in the Education Foundations Department.

Daystar University offers the following:

- Environmental Science: This is a first year General Education course for all undergraduates. Though the university has a B.Ed programme nothing special is on offer for these students

Maseno University offers the following:

- Introduction to Environmental Science: This is a first year course for all B.Ed students

While all B.Ed students in all the universities take the above compulsory and/or elective courses, B.Ed (Botany & Zoology) option take much more courses relevant to conservation, environment, and ecology. Such courses include:

- Field biology and ecology
- Properties and ecology of soils
- Fresh water ecology
- Ecology and behaviour of wildlife

- Plant community ecology

The universities that have vibrant wildlife and/or environmental clubs are: Kenyatta, Moi, Maseno, Baraton, and Egerton. The clubs at Nairobi University are disorganized and fragmented. Since the breakdown of the university into colleges the wildlife club at the university was wounded up and did not emerge successfully within the colleges.

Recent Projects and Programmes and Planned Environmental Education Within the Basin:

There are two important projects/programmes that have been initiated at the basin and both pertain to the Lake Victoria basin. The two projects are supported by the Nordic institutions. The first project is the Lake Victoria Catchment Environmental Education Programme (LVCEEP). The purpose of this programme is: to promote and influence change in attitude and behaviour of the target catchment communities and schools towards their immediate environment while sustainably using and managing natural resources. This programme is managed by WWF Eastern Africa Regional Programme Office based in Nairobi. The programme is implemented in the three East African countries of Kenya, Tanzania, and Uganda. The Kenya part of the programme is implemented by the Wildlife Clubs of Kenya, the Tanzanian part by WWF Tanzania office, and the Ugandan part by Nature Uganda.

This programme has the following five expected outputs:

- Output One: Capacity of teachers and teacher trainers to deliver EE as an integral part of their normal education activities built and strengthened in selected schools
- Output Two: Education materials to support formal and non-formal environmental education and awareness initiatives developed and disseminated in selected schools
- Output Three: School children understand the rationale for conserving freshwater ecosystems and other natural resources and the linkage between natural resource management and sustainable livelihoods.
- Output Four: Riparian communities achieve capacity to conserve and sustainably manage natural resources within selected sites of the Lake Victoria catchment
- Output Five: A practical partnership building mechanism for EE delivery with and among key stakeholders developed and operationalised.

The other project is the Lake Victoria Youth Cooperation (LVYC). This project is aimed at sharing experiences between the youth of the Baltic Sea countries and the youth of the countries of the Lake Victoria basin. The countries of the Baltic Sea have interacted for a long time in order to solve the environmental problems of the area and this is now just being recognized in the Lake Victoria basin. The project aim is:

" to demonstrate 'the good example' and 'the best practice' of the Baltic Youth Cooperation (BYC) and Baltic Sea Project (BSP) activities to some selected youth environmental organizations and upper secondary schools in Kenya, Tanzania, and

Uganda and to inspire and support them to replicate this in their own region,towards their fellows and with focus on their own environmental issues."

The youth environmental organizations participating in the projects are the Wildlife Clubs of Kenya, Uganda, and Tanzania. The project objectives include:

- Strengthen environmental awareness
- Developing organizations and democratic processes among young people in the Lake Victoria region
- Support education, schools, and youth in civil society
- Establish contacts between individuals and organizations between and within the African countries, within Sweden, and between the Lake Victoria region and the Baltic Sea region.

The activities to be implemented in this project include:

- A regional preparatory meeting for the East African students, teachers, and organizations in Kisumu, Kenya.
- Participation in the Swedish BSP meeting where the participants of the Preparatory meeting in Kisumu participated.
- The Lake Victoria meeting and forming of a regional network

Although the above are the main activities, the major expected outcome of the project is the formation of the regional network between environmental organizations of the region. It is also anticipated that BYC and BSP will continue to assist the network and schools with information from time to time after completion of the project.

These two projects are in their early implementation phase and no evaluation or monitoring has been carried out so far. It is therefore difficult to give an indication of any achievements made in any of these two projects.

Opportunities and Constraints for Transboundary EE and Outreach Activities:

There are some opportunities for transboundary EE and outreach activities in the basin and most of these pertain to the Lake Victoria basin of the three East African countries. These opportunities include:

- the East Africa Protocal on Lake Victoria Basin which calls for developing educational and public awareness programmes for the conservation and sustainable use of the resources of the basin.
- The existence of tranfrontier parks/reserves and ecosystems in the basin that can be used for EE and outreach activities. The Nile basin is one such an ecosystem. The East African countries have an experience in carrying out transboundary conservation work. These countries were involved in the GEF-UNDP Cross Borders Biodiversity Project.
- The two EE programmes for Lake Victoria currently going on in the region provides an opportunity to extend the lessons and experiences to the other part of the Nile Basin.

- A number international and local NGOs with interests in aspects of EE and outreach activities operate in the basin. Notable among these NGOs are: WWF, Wildlife Clubs of Kenya/Ugand/Tanzania, IUCN, Nature Kenya/Uganda, etc
- There is some commitment to EE & A by education authorities in the countries of the region as expressed in all developments plans of Kenya.
- Kiswahili is now widely spoken in the three East African countries and this provides an opportunity to develop EE & A materials that can be understood by a wide audience.
- The River Nile has an important historical, religious, and cultural significance for the Nile basin people. The use of history, religion, and culture is one more tool to make EE and A more meaningful for the people of the region.
- Kenya is host to a number of international organizations/institutions which can provide support for transboundary EE & A programmes.

Despite the above opportunities, there are some constraints for EE and A at the regional and national levels. Some of the constraints include:

- Non-formal EE and A activities remain uncoordinated and fragmented in Kenya and possibly in the other countries.
- There is little understanding of community needs when developing non-formal EE and A activities and programmes.
- Integration of EE and A in the curriculum has proved difficult and illusive at least in Kenya.
- Though the three East African countries have worked closely, the other countries of the basin remain separate. The East Africans therefore understand little about the education systems and EE and A activities in these other countries.
- The absence of adequate EE & A teaching and learning resources and materials at all levels of the education system.
- The examinations have had a negative impact on the learning and teaching of EE at the schools.
- Problem of sustainability of EE and A programmes in the region. Many programmes are supported by NGOs and they leave the programmes stop.

Lessons Learned Around EE & A Project Experiences:

There are a number of lessons learned in the various EE & A projects and programmes at the national level and hardly much at the transboundary level. Three important lessons learned are:

1. A field based ecology programme organised for schools by the Wildlife Clubs of Kenya show that when EE programmes are linked well to the curriculum they become more valued and meaningful for both teachers and pupils.
2. A participatory classroom conservation education action research in Kajiado, Kenya showed increased learning and better attitude development. Teachers felt that though this process was time consuming it made environmental education process interesting and more enjoyable for the pupils. They also remarked that it needs changes in curriculum to be implemented.

3. The many issues that confront teachers and educators during EE sessions and activities shows that EE is multidisciplinary and multifaceted. Its teaching and learning demands that it be approached in a balanced way. Continuing education for teachers is necessary so that they are able to update their knowledge and skills on emerging environmental issues and community response to them.
4. Transboundary EE & A projects and programmes are by and large donor initiated and donor driven. The countries in the region have not initiated such projects by themselves. This explains the short lifespan for such projects in the region.

Monitoring and Evaluation:

Monitoring is best done through a participatory process involving all the stakeholders as the EE & A projects progresses. The project logframe developed with the stakeholders will be used to guide the monitoring process and assess how far the indicators are achieved. It is therefore difficult in this review to precisely identify specific indicators in the absence of a particular EE & A project being considered. However a general direction can be given for monitoring any EE & A programme. This process will be a continuous activity throughout the project life.

Some of the indicators that can be monitored include:

- EE & A planning: How many people are involved in the planning, how many meetings held, what resources/funds are available etc
- EE & A implementation: How effective is the implementation. What are the activities involved and how is each activity monitored. The activities and their indicators could include:
    - Workshops and/or seminars: The number held, who participated, reports produced, etc.
    - Materials produced: Who are the targets, the number and types, how have they been distributed, etc.
    - Schools and communities reached: What is their feedback, input into the implementation and how their feedback has been used.
- EE & A results. What are the impacts of the projects in terms of:
    - Knowledge gained and shared. This can be measured by assessing whether any conflicts have been reduced and any consensus reached.
    - Attitude changes. This is assessed from behaviour changes. An understanding of the prevailing anti-environmental behaviours that threaten the environment can be noted. A threats monitoring will be valuable in this.

A mid-term and final evaluation will be conducted either internally in a participatory way involving all stakeholders or by commissioning external consultants. The mid-term evaluation will help to reveal any shortcomings in achieving the project goal and purpose and help in making changes and adjustments. The final evaluation will illuminate overall lessons learned from the project and what aspects that could be used elsewhere in the individual countries or the region.

Conclusion and Recommendations:

The design and implementation of EE and A projects and programmes in Kenya (and possibly the region) have been an affair of the individual institutions. This is so because in Kenya there is no formal policy regarding EE and A content, context, form and delivery. Every institution has therefore approached EE and A as they deemed appropriate. Kenya's policies reflected in government documents have simply stressed the importance of including environmental education and awareness in all government initiatives. How this is to be done has never been specified and therefore all institutions whether in formal education system or those involved with the non-formal programmes have delivered what they considered essential and important.

The Diploma teachers colleges in Kenya have followed the Kenya Science Teachers College example and they now all have a one year course in environmental studies for all their trainees. Other teacher training institutions offer a one semester course for their trainees. Kenya has therefore made an important practice for its teacher trainees to have some form of environmental education. The universities offer different degree courses for students majoring in environmental studies. The non-formal EE & A activities is unregulated and any institution does its work without due regard of what others are doing.

The following recommendations will help to develop EE & A in Kenya:

- Develop a practical policy and institutional framework for EE & A in Kenya
- Inventory of EE & A projects and a programmes in Kenya**:** There should be a survey of all on-going EE activities.
- In-service training for teachers and others involved in EE & A activities
- EE & A be inculcated in the curriculum
- Outreach programmes be developed for rural communities. This will include mobile programmes that reach rural areas with films, videos, lectures, demonstrations, posters, etc
- Set up a national EE & A learning resource center where materials can be developed and teachers provided with advice and support
- Launch an African Journal of Environmental Education where findings, best practices, and ideas can be shared and disseminated. African practioneers and researchers in EE find it difficult to access foreign journals and/or publish their work there.
- Tap indigenous technical knowledge for EE & A initiatives
- Involve the media in EE & A campaigns

APPENDIX A

NTEAP
Environmental Education and Awareness Program

Initial Country Environmental Education and Awareness Reviews

Terms of Reference

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1. Project background

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:

- Improve the understanding of the relationship of water resources development and environment;
- Provide forum to discuss development paths for the Nile with a wide range of stakeholders;
- Enhance basin-wide cooperation and environmental awareness and
- Enhance environmental management capacities of the basin-wide institutions and the NBI.

The project has six components (i) Institutional Strengthening to Facilitate Regional Cooperation (ii) Community-Level Land, Forest and Water Conservation (iii) Environmental Education & Awareness (iv) Wetlands and Biodiversity Conservation (v) Water Quality Monitoring and (vi) Monitoring & Evaluation.

The Environmental Education and awareness component within the Nile Transboundary Environmental Action Project will focus on creating awareness on the River Nile environmental threats, while stimulating behavioural change at three levels; the general public, secondary schools and tertiary institutions of learning.

The programs objectives will be achieved through enhancing awareness on the nature of environmental inter-relatedness within the Nile basin and effects on communities. Focus will be put on developing or strengthening transboundary partnerships and networks of environmental education and awareness practitioners. This will be achieved through; building practitioners' capacities, introduction and building transboundary cooperation and demonstration (through pilot activities) the feasibility of developing and delivering a variety of environmental education and awareness programs at basin-wide level.

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.

In that vein, the NTEAP intends to recruit a national consultant to obtain a rapid assessment of a country's EE&A – quick, clear snapshot of the existing state of environmental education and awareness.

2. Description of the services to be rendered (Objectives of the assessment)

The main objective of the reviews is to come up with a clear snapshot of the existing state of environmental education and awareness within the Nile Basin for each riparian country. Specifically the review will:-

(i) Determine the state of both formal and informal EE and A activities within the country. The policy and institutional frameworks at national level and transboundary activities within the basin;

(ii) Determine the state of EE and A within all levels of learning institutions especially secondary schools;
(iii) Assess the number of tertiary institutions offering EE either as a course or a module;
(iv) Identify active practitioners and/or products (film, books, radio programs, campaigns, brochures, posters, etc.) within the basin on public awareness and environmental education. Document their modes of delivery, intuitional set-ups and sources of funding;
(v) Based on collected information, project and other documents, personal experiences, identify activity gaps and suggest opportunities and constraints for transboundary environmental education and awareness activities within the basin in each country;
(vi) Based on collected information suggest main SMART indicators for measuring progress.

The proposed review will address the policy and institutional framework at the national level and projects and programs at the basin level. In countries with federal states like Ethiopia the study will cover the five states which are within the basin.

3. Consultants main tasks

The consultant will carry out the following tasks;

1. Conduct desk and website reviews starting with both Project (PIP, TEA, PAD) and Nile Basin documents and websites;
2. Develop a short checklist of questions to be administered in each sample group;
3. Information gathering using participatory methodologies;
4. Information analysis and report writing;

a) Information gathering

It is fundamental that a participatory approach be used for collection of meaningful information from various sources – exiting documents, in-depth interviews, focus group discussion or direct observations. Time will be taken to do both desk and web search reviews. To ensure a more complete picture, the consultant will seek out representative comments and viewpoints at all levels of a given organization, as well as among stakeholders, beneficiaries and groups that will be affected. Emphasis will be put to elicit viewpoints and comments from both men and women. The draft report will be circulated to a broader focus group (National Environmental Education and public awareness working group) for further inputs.

b) Interview sample group

Given time and budget constraints, interviewing all groups will not be possible, however the consultant will ensure that a representative sample of people from each major category. Emphasis will be put in all categories of stakeholders and beneficiaries including but not limited to: -

- Government desk officers assigned to environmental education, participation or outreach programs specifically the Ministries of Environment, Education and Water Resources (at national, regional, or community –level);
- Institutional/project managers, supervisors and administrators of projects that are working or intending to work on environmental outreach , school modules within the basin;
- Influential leaders or opinion makers from the private sector, NGO community, CBOs, and religious organizations;
- School instructors, teachers, extensionists working with school clubs;
- Farmers and low-skilled workers;
- Representatives of environmental journalist at the national, regional , or local mass media (print, radio, and TV as appropriate);
- Community members, students, or well defined groups like women groups, youth groups, scout movements, etc.;
- Institutional /project beneficiaries, recipients, or constituents;

- ❖ Environmental, humanitarian and development NGOs within the basin;
- ❖ Bilateral and Multilateral donors working or planning EE&A activities including UNDP, WFP, CIDA, GTZ, SIDA
- ❖ International NGOs agencies like IUCN, WWF, AWF, etc
- ❖ In Rwanda and Ethiopia NELCU and ENTRO respectively to determine their future plans, needs and possible linkages on EE &awareness activities.

4. Coordination arrangements

The consultancy will be coordinated at two levels. At PMU, the EE&A lead specialist will coordinate the contractual obligation; the National Project Coordinator will coordinate the activities at the national level.

5. Reports and/or data to be submitted to PMU

The consultant will submit a checklist intended for information collection to the PMU for review. After the study the consultant will submit the draft reports to both the PMU the Nile secretariat and the NPC (to circulate to EE&A national working group members) for comments.

6. Time frame

With limited resources – notably financial and time, the assessment is expected to be completed between 10 -19 working days depending on the situation within each country (Table 1). This activity is planned for the month of October 2004 in all countries.

Table 1 *Suggested workplan for Initial survey*

#	Tasks	Approximate Max No. of days
1	Conduct desk and website reviews starting with both Project (PIP, TEA, PAD) and Nile Basin documents and websites	2.0
2	Develop a short checklist of questions to be administered in each sample group and send to NTEAP for review	2.0
3	Information gathering using participatory methodologies	10.0
4	Information analysis and report writing	2.0
5	Finalize report after the circulation for comments NTEAP, Nile-SEC, UNDP, WB	2.0
	Preparation and presentation of the final approved report to the 1st National Working group workshop	1.0
		19 days

7. Standards

The initial review doubles as a baseline survey for EE&A status in each country. It is expected that the consultant will highlight a few SMART indicators to enable the program achieve M&E objectives.

8. Document and services from PMU

The PMU will provide the project documents (PIP, PAD, TEA) for use as reference materials. In addition the project and Nile secretariat websites are encouraged to visit.

9. Monitoring /progress control

Monitoring or tracking progress will be done at two levels. At the national level, the NPC will monitor daily progress. The PMU will from time to time consult with both the NPC and the consultant to monitor progress and/or difficulties encountered.

10. Expected main outputs

The main outputs from the assessments are;

(i) *Country Status* –the current state (snapshot) of environmental education and awareness (both formal and informal, including institutional and policy framework) at national and within the basin in all riparian countries is determined;

(ii) *Identification of key players* –key environmental education and outreach players current and planned within the basin will be identified, documenting their modes of delivery, institutional set-ups and sources of funding;

(iii) *Opportunities* – opportunities and constraints for transboundary environmental education and awareness activities for the basin in each country will be identified.

(iv) *Dissemination* – The report will be presented to the 1st National Environmental Education and Awareness working group workshop;

(v) *Baseline* – The report will highlight a few SMART indicators for M&E, in addition to being used as a desk reports for the formulation of the main project M&E strategy. It will also form part of the regional status report on environmental education and awareness.

11. Reporting requirements

Contents

A detailed but reader friendly format, free of technical or academic jargon report is expected. The report will include recommendations and present them as a series of options for developing EE&A activities rather than prescriptions of what must be done. For easy of comparisons between countries and capturing the main project subcomponents, the following report format is suggested;

- Executive summary;
- Background;
- Policy and Institutional framework;
- Formal EE programs;
- Non Formal EE programs;
- EE and A at tertiary institutions;
- Recent projects & programs and planned environmental education and outreach program within the basin;
- A list of opportunities and constraints for Transboundary environmental education and outreach program;
- Summarize lessons learned around EE and A project experiences at national and transboundary level;
- Set of main indicators and how the indicators can be measured;
- Conclusions and recommendations.

Format

The report will be submitted in both hard and electronic copies. The electronic copy will be in Ms Word.

Distribution

The draft report will be reviewed by the PMU, steering committee member and development partners UNDP and the World Bank where appropriate.

12. Qualifications of the Consultant

The consultant will have:

(i) At least 8 years experience with recognized expertise on environmental education and awareness;

(ii) Advanced training, masters level degree or higher in related environmental, natural resource, social sciences or development field of study;

(iii) Demonstrated skills on participatory methodologies on information gathering, analysis and presentation;

(iv) Demonstrated writing skills, analytical and presentation and reporting skills.

(v) A good working relationship with Government institutions and NGOs is an added advantage.

13. Remuneration

Remuneration will be based on UNDP national consultant rates. Transport and living expenses will be reimbursed on an approved work plan basis.

APPENDIX B

Information Gathering Process;
The study was done through a participatory process involving a number of key EE stakeholders, practitioners, and policy makers. Also a desk top study of documents and materials relating to EE in Kenya and the region was done. The table below lists some of the persons consulted.

#	Sample group	No. and names of people interviewed	Comments
	Government desk officers assigned to environmental education, participation or outreach programs specifically the Ministries of Environment, Education and Water Resources (at national, regional, or community –level	4 people: Dr. Muasya of NEMA Mr. Mbarire of NEMA Mr. Rono of NEMA Mr. Dinda, Deputy Director of Education, MOEST, Mr. Otwori, Senior Assistant Director of Education, MOEST Mr. Oanda, Senior Quality Assuarance & Standards Officer, MOEST	Very supportive.
	Institutional/project managers, supervisors and administrators of projects that are working or intending to work on environmental outreach , school modules within the basin	Mr. Mwendwa of WCK Western Region Mr. P. Kirui of WCK Western Region	Very supportive
	Influential leaders or opinion makers from the private sector, NGO community, CBOs, and religious organizations	Ms. Susan Matindi of WWF	Very supportive
	School instructors, teachers, extensionists working with school clubs; Farmers and low-skilled workers	Mrs. R. Mboguah of Highridge T College Mrs. Agnes of Highridge T College Mr. Makanga of Kajiado Academy Mr. M Omar of Egerton University, Dr. Ochola of Egerton University, Prof. Ogula of CUEA, Dr. Kawasonga of CUEA Dr. Andrew Oduor, Maseno Univ. Mary Atinga, Maseno Univ. Christine Obiero, Maseno Univ.	Very supportive
	Representatives of environmental journalist at the national, regional , or local mass media (print, radio, and TV as appropriate);	None	

	Community members, students, or well defined groups like women groups, youth groups, scout movements, etc	Some elders from Leita & Nyagitha villages along the lake representing farming and fishing groups	Very supportive
	Institutional /project beneficiaries, recipients, or constituents;		
	Environmental, humanitarian and development NGOs within the basin	None	
	Bilateral and Multilateral donors working or planning EE&A activities including UNDP, WFP, CIDA, GTZ, SIDA	None	
	International NGOs agencies like IUCN, WWF, AWF, etc	Susan Matindi of WWF, Mary Shule of WWF Tanzania	

APPENDIX C

EE PRODUCTS BY ACTORS AND PRACTITIONEERS

Materials:

- The Meteorological Society of Kenya together with Meteorology department have developed a magazine, THE WEATHERMAN. Due to funding problems this magazine has only reached a dismal number of selected schools in Kenya.
- The KOMBA magazine produced by the Wildlife Club of Kenya (WCK) Headquarters is distributed free to wildlife club members.
- National Environment Secretariat produced several posters, depicting varied environmental issues and possible solutions. Due to non-sustainability this programmed came to a halt.
- KENGO produced several posters, magazines, pamphlets on trees and energy saving devices. Distribution of these materials to schools have been minimal due to lack of adequate funds to do so.
- Cooking to conserve. Energy conservation lessons for upper primary schools home science classes has been produced by the Bellerive Foundation. These materials have been distributed to only few primary schools in the country.
- Pied Crow Magazine provided to over 14000 primary schools in Kenya. Provided by CARE International in Kenya.

Specific projects:

- The Mobile Education Unit of WCK. This takes EE & A films, slides, talks to schools in remote rural areas
- The Field based Ecology Programme of WCK. This uses Nairobi National Park as a learning resource and is developed using the curriculum
- Soil conservation programme of the Ministry of Agricultural and SIDA for communities and schools

All the above actors use various methods to deliver their EE programmes to the Kenyan public. Some of the methods used include: posters, slides, films, magazines & newsletters, extension services, etc.