

**ECOFINDER KENYA NATURE CLUBS PATRONS TRAINING REPORT FOR YALA  
WETLAND 2007-2009**

**Project Title**

Community Based Biodiversity Monitoring and Conservation for Yala Wetland, Kenya

**Submitted to**



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## **1.0 INTRODUCTION.**

Yala swamp complex has three main components: the Yala swamp, satellite lake of Kanyaboli, Sare and Namboyo. The predominant vegetation is papyrus *Cyperus papyrus*, with *Phragmites mauritianus* in shallower areas and swamp grasses around the periphery. The Yala swamp complex is by far the largest papyrus swamp in the Kenyan sector of Lake Victoria making up for more than 90% of the total area of papyrus (Nasirwa & Njoroge,1997).

The problems facing Yala swamp require grassroots community mobilization and partnerships to tackle it. This project aims to do so through establishment of grassroots structures and empowerment. The portfolio approach of monitoring to avail information for informed and timely conservation action and evaluation of impact of conservation interventions, capacity building and conservation education for attitude and behavior of wetland community towards sustainable wetland utilization and alternative livelihoods to showcase conservation linkages of community livelihoods provides greater chance for success and sustainability. This will ensure that human threats such as agriculture, over harvesting of papyrus, poaching are reduced and finally eliminated by targeting different segments of addressable group; farmers, papyrus harvesters and weavers, fisherpersons, poachers and households in general.

**Project Aim:** To facilitate grassroots-based detailed monitoring and conservation of Yala wetland.

### **1.1 Specific Objectives:**

- a. To undertake basic diagnostic habitat survey for Yala wetland ecosystem status under the prevailing human threats.
- b. To establish sustainable community based detailed monitoring scheme for Yala wetland.
- c. To undertake training, conservation education and public awareness for attitudinal and behavior change towards wetland conservation among Yala wetland community.
- d. To showcase sustainable alternative livelihoods for community households adoption to eliminate human pressure on the wetland.

## **2. PRIMARY SCHOOL PATRON'S TRAINING.**

### **2.1 Welcome Speech-Deputy Head Teacher-Hawinga Primary school.**

The deputy head teacher (Hawinga primary) welcomed all the participants and was very thankful for hosting different Nature club patrons from schools within the region who had come. He also gave an assurance that his school will continue working hard in promoting environmental conservation around the swamp.

#### **2.1.1 Schools represented:**

1. Rasugu Primary School.
2. Uwasi Primary School

3. Uhembo Primary School
4. Nyandheho Primary School
5. Hawinga Primary School.
6. Mahero Primary School
7. Gangu Primary School
8. Nyakado Primary School
9. Diburo Primary School
10. Misori Primary School

### **2.1.2 Participants Expectations:**

Learn:

- i. How to be environmentally conscious.
- ii. More information about wetland and environment.
- iii. How to care for the wetland and general environment.
- iv. Learn on sustainable ways of living.
- v. Get equipped with knowledge and skills on environmental management.
- vi. How to improve the environment within the schools.
- vii. Learn how to co-exist with the environment and protect it.
- viii. Learn more about the ecological sanitation toilet (Ecosan toilet).
- ix. How to develop proposals so as to start up environmental activities within school.
- x. Understand the concept of eco-school.
- xi. Get to know one another and learn from them.

### **2.2 Self Sufficiency in Schools.**

This is a new concept that is being promoted by Teach A Man To Fish, United Kingdom, who has collaborated with Ecofinder Kenya. It was developed because of the need for schools to find ways of managing their basic needs without necessarily putting a pressure on the parents or waiting for the limited government funds. It involves minimal dependence on outside sources to sustain the school. Moreover provides avenue for teachers and pupils to learn and showcase wetlands friendly enterprises for wider village adoption and propagation.

The participants identified the following potential enterprises. However, brick making was earmarked as environmental unfriendly and should be discouraged or sound mitigation measures put in place.

1. Farming
2. Brick making.
3. Tree planting
4. Apiary
5. Mat-making
6. Weaving
7. Craft industry
8. Production of magazines.
9. Theater/Drama

## 10. Organic farming.

### **2.2.1 Agricultural education**

Kenyan wetlands have been disappearing majorly because of the unsustainable agricultural practices around the swamps. It is therefore necessary to introduce more proactive curricula within the primary schools so as to integrate sustainable agricultural education.

Primary school agriculture is thought, generally to be an interesting and relevant area of study, but it is not seen as a priority area due to many constraints which obstruct the effective delivery of agricultural training in primary schools. It is therefore necessary for teachers and parents to encourage students and pupils on the same. Active involvement from the Parents Teachers Association in adopting agroforestry technologies will result in motivating the students who will become good change agents in the future. The teachers unanimously accepted to promote sustainable agriculture friendly to wetlands in their schools.

### **2.2.2 Education for sustainability**

This is an emerging but dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating a sustainable future.

The teachers suggested the following ways to involve their pupils and students to enable education for sustainability.

- a) By involving students in nature clubs: this enables the students to exercise some of the ideas learnt in class and get to be exposed.
- b) By organizing field trips for example to Agricultural shows held around the province.
- c) Creativity in the curricula so as to include action-based activities.
- d) Starting up activities that promote environmental conservation for example greening of the school through afforestation activities.

### **2.2.3 Eco-Schools Programme**

This concept is used to promote coordinated stakeholder participation in environmental management through environmental education and public awareness.

The aim is to achieve sustainable environmental management at local level through schools. The stakeholders that would be involved include;

- a) NEMA(Siaya district)
- b) Lake Victoria Environmental Management Programme(LVEMP)
- c) Municipal Education Office(M.E.O)
- d) Friends of Yala Swamp
- e) Primary Schools.

The Eco-schools programme offer a flexible way of supporting environmental education through integrated outdoor experiences with classroom studies and providing guidelines

to the day to day running of the school. The patrons agreed to initiate the process of transforming their schools into eco-schools.

#### **2.2.4 Outcomes of the Eco-Schools Programme.**

- a) Improving the agricultural and natural resource management knowledge, skills and attitudes of children and youths.
- b) Empowering young people by enhancing the effectiveness of formal and non-formal education through active experimental and contextualized learning.
- c) Promoting the integration of sustainable natural resource management into basic education, contributing to the improvement of rural livelihoods, land use management and environmental conservation around Yala swamp.
- d) Bringing direct benefits to all learners and their families and strengthening linkages between schools, homes and communities around Yala swamp.
- e) Encouraging local and regional collaboration and networking through flexible multi-stakeholder approaches.

#### **2.2.5 Guidelines for starting up school projects.**

1. Identifying viable projects within the school.
2. Formation of a nature club to spearhead the implementation of the project.
3. Getting interested and dedicated members (pupils and students).
4. Setting up a work plan on how to implement the project.
5. Sourcing for resources to start up the initiative.

## **2.3 ENVIRONMENTAL EDUCATION.**

### **2.3.1 Environment**

The concept of environment was introduced to teachers under this module. *What is it? What makes it up? For whom? Who cares?*

Environment means, the land, water and atmosphere of the earth. Environment also implies the surroundings, development and existence of living beings.

It encompasses the following:

- a) Physical/Natural world.
- b) Political environment
- c) Economic environment
- d) Cultural environment
- e) Technological environment
- f) Social environment
- g) Aesthetic environment.

### **2.3.2 Environmental Awareness.**

The process of equipping people with knowledge and skills which makes them informed and interested in the environment.

Knowledge includes knowing how different entities and systems operate within a particular setting together with their impact. Such knowledge makes one informed for purposes of facilitation in making rational decisions and actions on the environment. An environmentally knowledgeable and well-informed individual is likely to have keen interest towards what happens to the environment.

### **2.3.3 Environmental Education:**

Is a process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the relationship of man to his culture and biophysical surroundings. It is a life long and forward looking process, thus preparing people for their lives as members of the biosphere. It is learning to understand, appreciate, work with and sustain environmental systems in their totality.

### **2.3.4 Environmental Issues.**

Any environmental event or process that has potential to be hazardous or cause danger to life is called an environmental issue. The following Environmental issues exist within the region:

- a) Population growth or pressures.
- b) Loss of biodiversity
- c) Changes in agricultural practices.
- d) Introduction of alien species e.g. Nile perch.
- e) Rapid urbanization.

### **2.3.5 Environmental Problems.**

Environmental problems are hazards or dangers that are difficult to deal with or solve. They cause direct harm and threaten survival of mankind and all other living things that share resources of the planet earth. Present and future environmental risks are concerns of world.

### **2.3.6 Environmental Protection.**

Damage or deterioration of the environment automatically affects human life. As the damage or deterioration of the environment caused by various agents increase, the question of protecting the environment has become a global concern. It is the responsibility of all people as managers of the environment to protect it together with the resources therein from being wasted, damaged, exhausted and polluted.

While we generally advocate environmental protection in as far as environment is concerned, endangered species (flora and fauna) and resources should be protected from being extinct or being damaged. The ultimate goal of protecting the environment is to maintain biodiversity and the ecosystem so that all users can meet their present needs without compromising those of future generations.

### **2.3.7 Environmental Conservation.**

Is a process in which resources are used sustainably, it involves rational use of resources to ensure that they exist longer. Basically conservation embraces preservation,

rehabilitation, rational use, maintenance, restoration and enhancement of the natural environment.

Conservation can be achieved through;

- a) Limiting human impact on the world.
- b) Maintaining biological wealth/diversity.
- c) Using non-renewable resources at a rate that does not exceed the creation of renewable substitution or alternatives.
- d) Promoting technologies that increase benefits from the given stock of resources.
- e) Using policies that help to maintain natural wealth.
- f) Promoting cultural values and practices that can help to achieve sustainability.
- g) Provision of environmental education.

Environmental conservation is thus the management of human use of the biosphere so that it may yield the greatest sustainable benefit while maintaining its potential to meet the needs of the future generations.

### **2.3.8 Sustainable Development and the Environment.**

Development is planned change with a focus on socio-economic goals. Indicators of development include:

- a) Increased income
- b) Improved health and nutrition.
- c) Equity.
- d) Accessibility to resources and liberty.

Sustainable development advocates the maintenance and improvement of development indices over time, with emphasis on conservation and enhancement of the earth's natural resources. These include ecological processes, life supporting systems and genetic diversity.

*Aspects of sustainable Development.*

- a) Biological aspect-this involves ecosystems and species diversity.
- b) Economic aspect- Reduced poverty and increased usable goods and services.
- c) Social aspect- Cultural diversity, institutional sustainability, social justice and participation.

*Qualities of sustainable development include:*

- a) Discourages careless disposal of hazardous wastes.
- b) Emphasizes living within carrying capacity of the biosphere.
- c) Seek better understanding of human needs and re-oriented of social and economic behavior of world's riches. Sustainable development is geared towards desirable change for human kind to attain economic and ecological equilibrium.
- d) Discourages use of ozone depleting substances.
- e) Searches for the balance between population and resources, and reduction of current millions of people who suffer from hunger.

*Strategies for attaining sustainable development;*

- a) Increased use of renewable energy sources like bio-gas, solar energy and minimal use of the non renewable resources.
- b) Reduction of the pollution of scarce water resources.
- c) Promotion of more environmentally friendly activities such as recycling.
- d) Encourage active participation of people in all environmental conservation programmes for purposes of promoting ownership.
- e) Provision of education as a key to sustainable development.

### **2.3.9 The Goals of Environmental Education.**

- a) To foster awareness of, and concern about, economic, social, political, ecological and inter-dependence in urban and rural areas.
- b) To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect the environment.
- c) To create new patterns of behavior to be internalized by individuals, groups, and society as a whole towards appreciating the beauty of the environment.

### **2.3.10 Objectives of Environmental Education.**

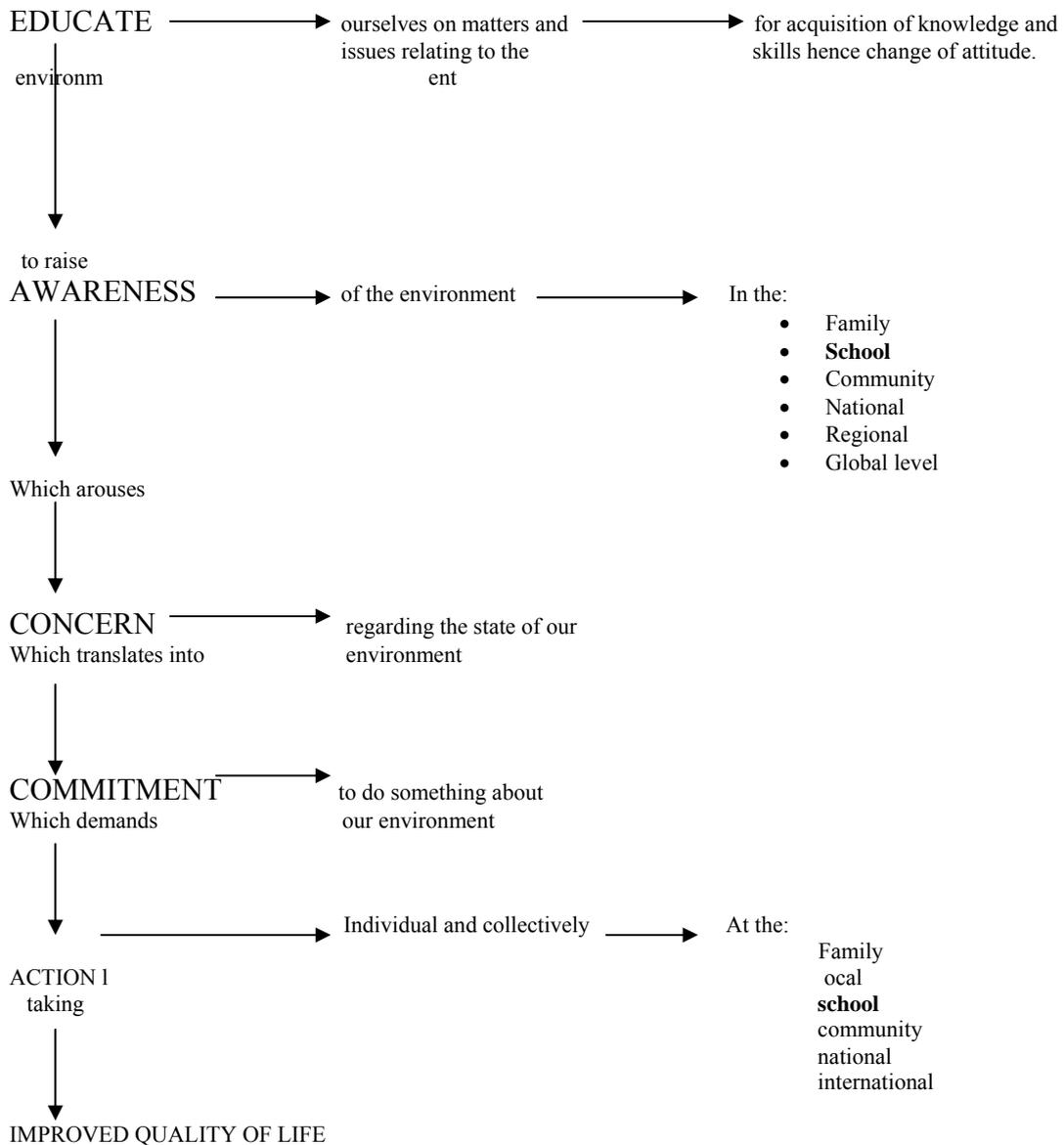
*Awareness:* To help individuals and social groups acquire awareness of, and sensitivity towards the environment and its allied problems.

*Attitude:* to help individuals and social groups acquire a set of values and feelings of concern for the environment and thus be motivated for active participation in environmental improvement and protection.

*Skills:* to help individuals and social groups acquire the skills for identifying and solving environmental problems.

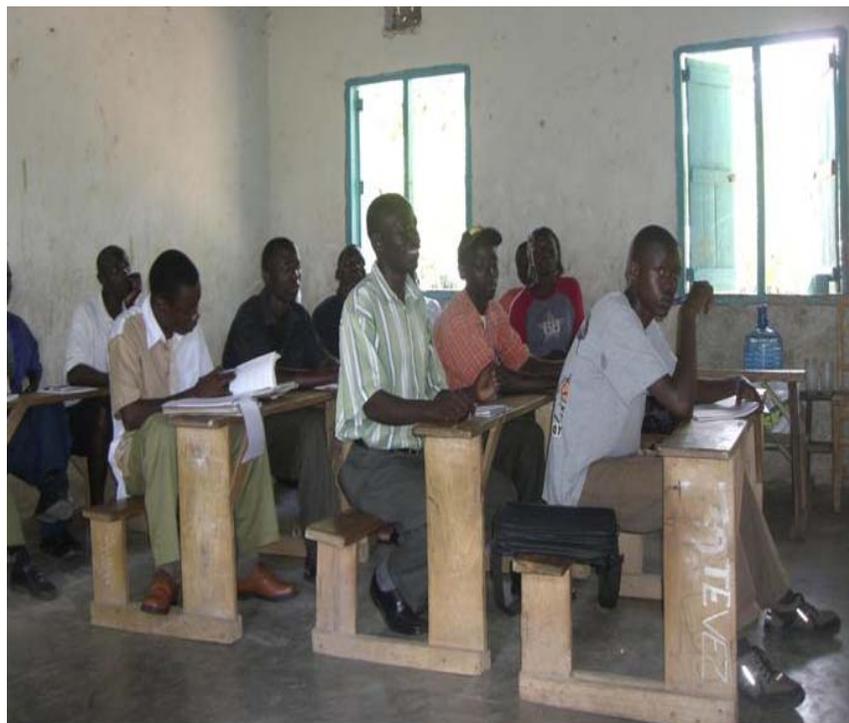
*Participation:* to provide individuals and social groups with an opportunity to be actively involved at all levels in working towards resolution of environmental problems, individually and in groups.

## Summary of the objectives of Environmental Education:



### 2.3.11 The Guiding principles.

- a) Environmental Education is to be treated as a continuous life long process.
- b) Make environmental education be interdisciplinary in its approach, that is, holistic in nature.
- c) Focus on current and potential environmental situations in a historical perspective.
- d) To explicitly consider environmental aspects in plans for development and growth.
- e) Enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences.
- f) Relate environmental knowledge and skills with values clarification.
- g) Help learners to discover indicators of environmental problems.
- h) Develop critical thinking and problem-solving skills on environmental aspects.
- i) Utilize diverse learning environments and a broad array of educational approaches to teaching/learning processes with emphasis on practical activities and first-hand experiences on environment.



*Nature club school patrons at the training workshop*

## 2.4 ECOLOGICAL SANITATION.

This module was to promote the concept of ecological sanitation to enable mitigation of human waste finding their ways to the wetland waters, generation of night soil (human faeces) and urine as source of manure and nitrogen for organic farming. The technology promoted was Ecosan toilet.

*What is an Ecosan toilet?*

It is also called ecological sanitation toilet which is a system that:

- i) Prevents disease and promotes health
- ii) Protects the environment and conserves water
- iii) Recovers and recycles nutrients and organic matter.

An ecosan toilet is a modern alternative to traditional sanitation methods. Ecosan toilet: Separates urine from faeces so that these can be used separately to increase soil fertility.

*Why Ecosan toilet.*

- Processes human waste to recover nutrients that would otherwise be discarded.
- Offer economically and ecologically sustainable and culturally acceptable systems that aim to close the nutrient and water cycle.

*Advantages of Ecosan toilet*

1. Prevents pollution of water by human waste-pathogens.
2. Safe, hygienic recovery and use of nutrients. When properly used, the Ecosan toilet is very hygienic unlike the pit latrines.
3. Preservation of soil fertility
4. Environmentally friendly-mineral fertilizer. The manure ensures a cyclic addition of organic material in the soil without any worries on the ration to be added.
5. High agricultural productivity -food security. The Ecosan manure is very cost-effective and therefore ensures that the farmers have high yields.
6. Material flow cycle instead of disposal of valuable resources. The toilet ensures complete recycling of the waste and therefore a complete material flow.

*Use of Ecosan Manure*

1. Treatment of faecal material using wood ash: The wood ash ensures the “dehydration” of the faecal material therefore preventing aerobic decomposition that would lead to foul smell.
2. Faecal material ready to use after 6 months.
3. Urine mixed with water on a 3:1 ratio respectively and used on a 24 hour basis.

*Precautions on using the Ecosan Toilet.*

- Ensure that urine does not mix with faeces.

- Cover the faeces with wood ash to avoid foul smell.
- For green vegetables use it pre-emergently only.

The patrons were impressed by the concept of ecological sanitation and by extension ecosan toilet and were eager to introduce the same in their respective schools.

### 3.0 ACTION PLAN

The school patrons developed an action plan that was summarized in the table below.

School	Activity	Source of Funds	Cost of Implementing	Persons involved	Duration/Time Frame	Sustainability
Misori	Tree Planting	1.Registration 2.Donation from teachers	Pu	pils and teachers	2 months	Motivation of Pupils
Rasugu	Poultry keeping	1.Well wishers. 2.Donors 3.Registration	Sc	hool patron,	1.	Savings 2.Project expansion. 3.Motivation 4.
Mahero Org	anic farming	1.Mini financing 2.Registration 3.Well wishers	Ksh. 2360	Teachers, pupils and resource persons	3 months	1.Pupils will be motivated out of the profits.  2.Diversification
Dibuoro Org	anic farming	1.Club registration. 2.Support from school administration	Ksh. 1600	Teachers and pupils	2 months	1. Ensure proper security and market for the products. 2. Providing incentives to students.
Hawinga	Poultry Farming, Organic farming	Registration		Teachers and pupils	6 months  3 months	Incentives and club diversification
Uwasi Poultr	y Keeping	Registration, Pupils	Ksh. 1000	Pupils and teachers	6 months	Motivation and diversification of projects
Uhembo T	ree Planting	Registration, Labor from students.	Pu	pils and teachers	3 months	Incentives and motivation to students
Gangu Org	anic farming	Club registration, pupils and teachers, school	Pu	pils and teachers	Ens	uring continuity by involving the administration.

		administration				
Nyandhe ho	Tree Nursery	Registration, Teachers and pupild providing labour	Pu	pils and teachers	2 months	Motivation and diversification.