Nile Basin Initiative-
Transboundary Environmental Action Project
Wetlands and Biodiversity Component

Baseline Meeting of Experts Report

12-14th, November 2007
Golf Hotel-Kakamega, Kenya

INTRODUCTION

The Nile Basin Initiative, Transboundary Environmental Action Project, Wetland and Biodiversity Conservation Component aims at enhancing the understanding of wetlands function in sustainable development and to demonstrate an improved management at selected Transboundary wetlands sites. The Component builds on nationally focused wetland conservation and management initiatives within the Nile basin, and uses the network of existing centers of knowledge and experience to provide a transboundary overlay of set perspectives to complement national wetlands conservation programs.

To fulfill part of this mandate, a two day meeting was held in Kakamega Kenya. It brought together professionals in various specialty areas in wetlands and Biodiversity with a view to find out what information and knowledge gaps exist. The meeting shared information available in various specialty areas in wetlands and biodiversity within the basin, identified gaps and proposed a way forward that would guide the Nile Basin Initiative interventions. The outcome will also be shared at regional level in all the nine countries of the Nile Basin Initiative with a view to design regional activities.

The meeting was attended by 25 participants drawn from leading institutions in wetland and biodiversity in the country. Specific objectives addressed during the meeting were:

1. To introduce the WB component of NTEAP to wider stakeholder group
2. To Listen to 8 research papers in various issues of wetland and biodiversity in the country
3. To compile a baseline on the WB situation in the basin

Methodology

Technical papers were presented and discussed in plenary sessions. Based on this a way forward was proposed.

BRIEF OF PRESENTATIONS

The NTEAP Wetlands Component

The NPC made a presentation on the background of NBI and NTEAP, focusing on the specific mandate of the wetlands and Biodiversity component. The NPC then clarified the objective of the meeting and invited participants to participate actively and provide direction she would need to design country level activities in the component.

Opening Remarks – Dr. Henry Busulwa – LS WB

The Lead Specialist represented by Mr. John Omwenga LSWQ, thanked participants for attending and agreeing to share information. He reiterriated the importance of the information and discussions that would be the outcome of the meeting and shared ideas from other areas in the Nile Basin to which the outcome of the meeting would contribute.

Paper 1: Classification and Distribution of Wetlands – Mr. Stanley Ambasa, NEMA

LVEMP-Wetlands Management component collaborated with lead agencies in the basin to collect data for wetlands management. Studies carried out include, rapid assessment of wetlands, buffering processes, mapping using remote sensing and GIS, traditional wetlands production and market surveys, and lesson learnt assessment. Mr. Ambasa gave information on the types of wetlands and key plant and animal species in the basin as well as results from the various studies. Based on this he presented the following as gaps in the area of classification and distribution of wetlands: (1) Monitoring and management (2) Inadequate base maps (3) Lack of

wetland policy (4) Poor networking among institution and researchers (5) Inadequate database (6) Inadequate Community awareness and participation (7) Capacity in manpower and equipments

He proposed that: (1) Complete wetlands database and integrate with satellite imagery and GIS; (2) Acquire high resolution Satellite imagery for mapping small wetlands in the Lake Victoria basin; (3) Continue with monitoring the pilot sites and basin wide wetlands; (4) Immediate action should be taken to control invasive wetlands plant species; (5) Strengthen community to develop wetland management plans; (6) Develop and implement wetlands strategies for the basin; (7) Improve insttutional and community capacity to manage wetlands; (8) Community education programs should be undertaken to ensure that stakeholders are fully aware of the ecological services that are provided by wetlands.

Paper 2: SocioEconomic and Cultural Diversity of Wetlands – Dr. Manyala, Moi University

The paper covered limnology, flora, fauna, fish and fisheries, rivers and associated wetlands as the resources from wetlands. It discussed human impact, utilization, function values, and threats to wetlands in the Basin. Dr. Manyala said the main problem to wetlands has been caused by population pressure on resource base like land, wetlands, forest, fisheries, water etc. and proposed that efforts should be made to reduce encroachment on wetlands, reduce deforestation, water pollution, air pollution, reduce poor waste management by applying pressure – state response reports in various environmental aspects. Areas, which are hot spots, should be gazetted for protection and sustainable use. Gaps identified included: (1) Incomplete Mapping of wetlands; (2) No Complete valuation done; (3) No Management plans; (4) lack of a National Wetland Policy

Dr. Manyala proposed that (1) management plans need to be done for wetlands in Kenya; (2) Improved institutional structures to avoid duplication of roles in the management of wetlands; (3) the establishment of a lead Agency with a clear mandate in the support to wetlands management; (4) Policy harmonization to provide proper guidance to management and use of wetlands.

Paper 3: Aquatic Invertebrates and Anthropods – Dr. Richard Bagine and Dr. Celicia Gichuki, National Museums of Kenya

The aquatic invertebrates constitute an important component of wetland biodiversity in Lake Victoria basin. They play an integral role in the production dynamics of wetlands, aquatic food web, bio control agents, bio-indicators and as vectors. Unfortunately, the knowledge of aquatic invertebrate especially in Kenya and East Africa in general is scanty. Few studies carried out on important aquatic invertebrate have focused on economically important species, control of vectors, production ecology and biosystematics.

Detailed research studies targeting specific aquatic invertebrate group (taxa) in Lake Victoria basin are limited. Dr. Bagine proposed that there is need to investigate what kinds of aquatic invertebrate species are there, their distribution and composition; carry out biodiversity surveys and inventories in L. Victoria basin wetlands.

He recommended that:- (1) Regional collaborations need to be strengthened to focus on research, monitoring and conservation; (2) there is need to develop an effective water-quality monitoring system involving key indicators and intolerant invertebrate species; (3) that an attempt be made to establish a detailed data base for all the information available on aquatic invertebrates of Nile River basin; (4) there is need to focus on aquatic invertebrate research themes that target specific groups and species of economic importance e.g. Invasive alien species, Vectors, bio-agents etc; (5) National and perhaps regional wetland policies should be concluded to secure the wetlands ecosystems and their valuable resources. (6) there is need for the development of the culture

to freely exchange information, ideas and findings with stakeholders nationally and regionally is worthy establishing including modalities of transmitting such information to end users.

Paper 4: Wetlands Micro-organisms – Dr. John Gichuki, KEMFRI

Microorganisms found everywhere in our watershed are important in the wetland ecosystems because of their role in the assimilation, transformations and recycling of the chemical constituents present in the wetland ecosystems. Dr. Gichuki gave the classification and characteristics of the microorganisms found in the basin. He proposed that: There is need to bring wetland conversion processes under control by making informed decisions where and when not to convert as well as to improve on the already converted areas to protect vital functions, make uses beneficial sustainable and equitable. In addition the principle of wise use should be applied which states inter alia "The Wise Use of wetlands is their sustainable utilization for the benefit of mankind in a way compatible with the maintenance of the natural properties of the ecosystem". There is need to review sectoral policies that are conflicting eg the agricultural policy and environmental policy and there is need to gazette the wetland policy so the state can feel obligated to protect the wetlands.

Paper 5: Wetland birds - Henry Ndithia, National Museums of Kenya

A total of 82 different wetland bird species have been recorded in the 14 different sites surveyed. The conservations of wetland birds and their habitats in Kenya require pragmatic and multi-disciplinary approach and political will for the formulation of effective policies and their sound enforcement at local and national level. Dr. Ndithia proposed that (1) There is need for the formulation of a national wetland policy that would also address the issue of community participation; (2) Buffer zone should be set a around each site, especially at areas historically comprising papyrus; (3) there is need to strengthen Government, civil society and private institutions collaboration in addressing challenges faced by wetlands and their biodiversity to prevent duplication of activities (4) Enforce the law on wise use, disposal of industrial effluent and sewage by relevant authorities; (5) Gazette the swamps around Lake Victoria (Yala, Kanyaboli, Koguta, Sio Port etc) and islands in the lake as legally protected areas. The legal protection will limit human activities which are currently encroaching into these sites and increasing their degradation.

He proposed the following conservation interventions: (1) Waterbird surveys in all swamps around Lake Victoria and the islands in it as well as the riparian habitat of the permanent rivers which drain into the lake; (2) Detailed ecological studies targeting particular waterbird species in relation to their habitat requirements are required (eg Papyrus endemics, Papyrus dependent etc); (3) Strengthening the capacity of the members of CBOs, local people and other institutions to get involved in the annual waterbird monitoring scheme currently being conducted in few sites around Lake Victoria, and to participate in general applied research on birds and their habitats.

Paper 6: species diversity: a glance at the once speciose fish assemblage of the Nile basin in Kenya – Dr. W. Oweke Ojwang and Ojuok, J. E, Kenya Marine and Fisheries Research Institute

The fishes of Nile Basin in Kenya were four decades ago considered by many as one of the most speciose assemblages in the tropics. The fish species of the Nile basin in Kenya were predominantly composed of haplochromine cichlids and over 38 non-cichlid species. Taken together, there were over 14 different fish families The decline and the near disappearance of some fish species is attributable to multiple introduction of exotic species (*Lates niloticus*, *Oreochromis niloticus*, O. *leucostictus*, *Tilapia zillii* and *T. rendallii*) and several anthropogenic activities, including wrong fishing methods which together have impacted negatively on the system and negated any efforts towards sustainable exploitation and conservation of the fishery and fish species of the Nile Basin in Kenya respectively.

Dr. Ojwang identified the research gaps as; (1) Inadequate taxonomy of the fish species especially the haplochromines and cyprinids; (2) Inadequate population genetics studies e.g. hybridization between the native and introduced tilapiines species and the genetic status of the surviving indigenous fish species; (3) Lack of a centralized database for all the works done in the basin; (4) Poor state of data on the major rivers in the region; (5) Lack of Catch Assessment data for satellite lakes; (6) Inadequate involvement of relevant stakeholders in the conservation of fishery resources especially on the small waterbodies and floodplains; (7) General lack of environmental awareness in the lake basin; (8) Potential impact of upstream migration of the piscivorous introduced Nile perch is unknown.

Paper 7: Wetland amphibians and reptiles – Mr. Malonza, National Musuems of Kenya

There are about 39amphibian and 100 reptile species with low endemism. The existing gaps (e.g. sampling in majority of the unexplored areas) that can aid in conservation of species and their ecosystem are identified. I recommend more studies to establish species conservation status and biogeographical affinity in majority of the poorly explored areas in this region. Future conservation efforts should encourage all local activities that are likely to preserve village wetlands and forests in the Kenyan Nile basin. Finally, all remaining indigenous forests and wetlands should be given highest conservation priority.

Paper 8: Wetlands mammals - Bernard R Agwanda, Mammal Section, National Museums of Kenya

The paper gave a description of the various mammals found in wetlands in the Nile basin and concluded that Wetlands are far more important than just being a home to aquatic mammals. They are *refugia* to many species during droughts besides daily water service. Unfortunately wetlands are target to many conservation unfriendly activities. Activities such agricultural expansions and settlement are primary causes of destruction and fragmentation of wetland habitats and inhabitant biodiversity. Fragmented inhabitant mammals populations then become either unviable and or prone to stochastic events. Conservation of wetlands is therefore critical for both socio-economic developments per se, but also for biodiversity management. In the absence of knowledge on aquatic mammals in wetlands of Nile basin, both conservation motivations and management decisions remain void. The paper suggested that as a first step towards ensuring effective and sustainable management of wetlands in Nile the basin, Kenya, this paper gives a brief on existence, habitat of and threats to some aquatic mammals within Nile Basin. Primary to this course, information gaps are highlighted to aid prioritizing future efforts.

ISSUES RAISED DURING DISCUSSIONS

1. The status of the National wetlands policy

The national wetlands policy formulation process, though not complete, has undergone very important and critical consultative and consensus building stages among the various stakeholders and interest groups. This process began in 1997 and in the intervening period, several drafts have been produced, discussed, revised and up dated to conform to realities and expectations of the various stakeholders. The draft national wetlands policy was developed by the National Wetlands Standing Committee (NWSC). The NEC recommended that the document should be revised to reflect the spirit of the Water Act 2002 and the Water Policy, and water quality regulations. A taskforce was formed and has been working on harmonizing the wetlands policy with these policies and is also developing regulations for wetlands as mandated by section 42 of EMCA.Once the policy is finalised and approved, the implementation process will be coordinated by a multisectoral committee that includes government sectors, researchers, planners, developers, NGOs and local communities. It is hoped that the task force will complete its work and submit to the NEC by 31 December 2007.

2. Water hyacinth control

Water hyacinth is a major problem in Lake Victoria and is responsible for rendering the port inoperable for periods f time severely limitinf fishing and blocking the municipal water intake. Mechanical control has mostly been unsuccessful since the weed grows faster than mechanical clearance can cope. Various herbicides are also effective but have significant risks for other wetland biodiversity. However, both methods have been successfully used in Uganda and Tanzania. The Kenya Agricultural Research Institute (KARI) introduced more than 200,000 weevils into the lake to feed on the weed which succeeded in reducing its spread, but the residents as well as a visit to the lake confirm that little has been achieved. Kenya plans to learn lessons from Uganda and may even hire their machines to mechanically remove the weed.

3. Biodiversity Indicators for National Use (BINU) project.

Concern was raised that information collected by this project would be lost. Participants were informed that BINU had created linkages with Kenya Wildlife Service which will be the custodian of the second phase of another programme which intends to scale up the Biodiversity Indicators for National Use (BINU) project.

4. Ensuring a balance between ecological and economic exploitation

After a lengthy discussion where Yala Swamp exploitation was sited as an example with participants sharing their dissatisfaction with the utilization of the swamp; participants proposed the development of a management plan for all or part of the Yala Swamp.

5. Formulation of LVEMP II

Participants agreed that it is important to understand the objectives of LVEMP II and to analyze the impact that the proposed activities may have on wetlands in the region. The focus of LVEMP II on investments may result into unprecedented environmental degraded that should be checked before the project starts

6. Wetland Valuation Studies

After deliberation participants agreed that it is important to undertake wetland valuation studies and package the information for policy makers; Economic valuation is a powerful tool to aid and improve wise use and management of wetland resources by providing a means for measuring and comparing the various benefits of wetlands.

5. Water quality management

The water quality management portfolio is still abstract and needs to be demystified for other users of the information such as policy makers to understand and use it.

6. Access and Benefit Sharing

Kenya participated in the negotiations that led to the ratification of the Convention of Biological Diversity (CBD) in 1992. The Convention has three main objectives namely; to conserve biodiversity, to sustainably use the components of the biological diversity and to have fair and equitable sharing of benefits arising from the use of genetic resources. The Convention recognizes that a country has sovereignty rights over its genetic resources. The need for capacity building to enable the Convention to be implemented has been recognized especially by the Conference of Parties to the CBD and also by the Subsidiary Body on Scientific Technical and Technological Advice (SBSTTA). Kenya is keenly interested in the implementation of the Convention, particularly with regard to fair and equitable sharing of genetic resources, through well-structured bioprospecting procedures and management. Kenya's genetic resources are not managed within the system providing for a fair and equitable way of sharing their benefits as par the CBD requirements. Some of these problems are attributed to insufficient capacity to exploit the resources and poor coordination in the implementation of some sectoral policies and laws, leaving a chance for biopiracy to take place. Efforts to address these issues have been made by institutions such

as the National Environmental Management Authority (NEMA), National Council for Science and Technology (NCST) and National Museums of Kenya (NMK), which have convened workshops and meetings on this subject.

7. Conservation Goals

The conservation goals are articulated in the various laws of Kenya such as the Wildlife Conservation and Management Act Cap 376, Forest Act of 2005, Environmental Management and Coordination Act of 1999, Agricultural Act Cap 318, Water Act of 2002, and the Science and Technology Act Cap 250. The Government has endeavoured to establish an in-situ protection area system which is currently standing at 8% of the national land, while the recommended international target by the year 2010 is 12%. Kenya is a party to CITES and MIKE and is actively involved in conservation activities. Among the plants and animals receiving serious conservation attention are Aloe species, black rhino and elephant. The recently published forest policy proposes a number of measures including increasing the forest area. However, there are no targets regarding the access to genetic resources and the fair and equitable sharing of the resources arising from their utilization.

Issues of access and benefit sharing should be discussed to ensure that local communities are not short changed by researchers and investors. In this regard, KIPI should be part of the wetlands/biodiversity network;

8. Public Awareness

For an effective ABS at the grassroot level it is quite crucial that those communities who have the indigenous knowledge for exploitation of the genetic resources should be well organized so that there can be communal benefits from any bioprospecting activity. Another area requiring attention is to avail information on policies, and principles on ABS as stipulated in the EMCA, CBD and the Bonn Guidelines. Through this creation of awareness, and training on negotiation skills, the communities will be in a position to negotiate for fair and equitable sharing of the benefits.

Education, public awareness and training are very critical for promoting sustainable development and improving the capacity of people to address development issues. Most of the people are not aware of the consequences of their interaction with the natural resources and the consequent environmental problems. Deliberate efforts are being made to incorporate messages on environment and development at all levels of learning including formal, non-formal and informal education.

9. Indigenous Knowledge and Biodiversity Management

Indigenous peoples are entitled to the recognition of the full ownership, control and protection of their cultural and intellectual property. They need special measures to control, develop and protect their sciences, technologies and cultural manifestations, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral tradition, literatures, designs and visual and performing arts. However, most information is given freely and the communities are hampered by lack of information regarding the value of the genetic resources in their areas. Furthermore most local communities are not aware about IPR issues neither do they know how to negotiate for fair and equitable benefits from their genetic resources.

Such benefits will also act as an incentive and reduce the communities' negative attitude towards conservation which is a big challenge facing all conservationists.

10. Section 53 of EMCA

The EMCA mandates the National Environment Management Authority (NEMA) to issue guidelines and to prescribe measures for the sustainable management and utilization of the Genetic Resource. Section 53 (2) states that any guidelines issued shall specify:

- Appropriate arrangements for access to genetic resources of Kenya including the issue of licensing and fees to be paid for the access;
- Measures for regulating the import or export of germplasm;
- The sharing of benefits derived from genetic resources of Kenya;
- Biosafety measures necessary to regulate biotechnology;
- Measures necessary to regulate development access to and transfer of biotechnology;
- Any other matter that the Authority considers necessary for the better management of the genetic resources of Kenya

The Act (EMCA) provides the way forward by suggesting the type of measures and guidelines to address the issue of ABS in the country.

11. Information exchange

Information exchange among scientists, researchers and policy makers needs to be sorted out. It was seen as a major limiting factor.

Natural resources are now threatened by unsustainable human activities, spurred by technological innovations, economic development and population growth. One response to these problems is development of conservation strategies, action plans implementation and drawing up appropriate policies. There are already diverse groups, organizations and institutions who possess this information but due to fear of misuse of information, the flow is inadequate. Properly instituted information systems overcome the fear by building trust and confidence between information producers and users and such information will have far reaching effectiveness in addressing the present and future problems. Environmental Information is a very important tool in the environment's management hence it's generation, packaging and disseminating it in a more effective and efficient way.

Multi stakeholder Information Systems are used to address the problem of the use of information and data in influencing policies and legislations and in the management of our resources. Information generated by respected, diverse groups has greater potential to support-decision making. Collaboration among several actors and a guiding framework is necessary to facilitate coherent and cost-effective cooperation.

12. Data reliability

Data reliability was also raised as an issue. In the past researchers have been using expert opinion. There is therefore need to collect actual data and verify it in order to develop a strong and reliable baseline. Decision-making process requires provision of data and information that is timely, accurate, reliable, relevant, high quality and up to- date. Kenya has limited capacity to address data collection, assessment and transformations. This limits data availability, accessibility, quality and standardization thus impairing data exchange and dissemination. Consequently, the decision making process is constrained.

13. Ramsar classification of wetlands

KWS is in the process of generating data to enable certain sites including the Yala Swamp to be proposed for protection at both national and international levels. The codes are based upon the Ramsar Classification System for Wetland Type as approved by Recommendation 4.7 and amended by Resolution VI.5 of the Conference of the Contracting Parties. The meeting of experts pushed for national protection of wetlands in the Nile Basin that are viewed as being critically degraded. It was agreed that this issue form part of the action plan that would come out of the meeting.

14. Human/birds conflict/Awareness creation on reptiles especially snakes

As human populations expand and natural habitats shrink, people and animals are increasingly coming into conflict over living space and food. The impacts are often huge. People lose their crops, livestock, property, and

sometimes their lives. The animals, many of which are already threatened or endangered, are often killed in retaliation or to 'prevent' future conflicts. The local communities are socialized to destroy snakes on sight. It will therefore require a lot of capacity building to shift from this social paradigm to one that advocates for the conservation of snakes and birds.

Human-wildlife conflict is one of the main threats to the continued survival of many species, in many parts of the region, and is also a significant threat to many local human populatons. And, if solutions to conflicts are not adequate, local support for conservation also declines. The solutions are often specific to the species or area concerned, and are often creative and simple. An important aspect of the work is that it benefits both the animals and local human communities, and actively involves these communities. This is about finding solutions that lead to mutually beneficial co-existence.

In most cases, the work has often led to people being more enthusiastic and supportive of conservation, and has demonstrated that people can live alongside wildlife.

15. Important Birds Areas concept

Birds have been shown to be effective indicators of biodiversity in other plant and animal groups. Thus, although defined by its bird fauna, the conservation of the IBA network ensures the survival of a correspondingly large number of other taxa. Sites are selected using scientifically defensible, quantitative criteria, but the IBA concept is pragmatic.

CLOSING SESSION

The National Project Coordinator presided over the closing ceremony. She asked participants to introduce themselves stating their institutions and their work. The guest of honor was the Provincial Commisoner, Western Province, Mr. Abul K. Mwasserah accompanied by the Provincial Director of Environment Western Province, Mr. Baraza Wangwe.

Remarks – Provincial Director of Environment Western Province – Barasa Wangwe

Districts and provinces are implementers and interpreters of the information generated by scientists and researchers.Many crucial environmental issues are at stake in the country. As we determine solutions for mitigating against each of them, we need to recognize synergies among them. It is also crucial to address the synergies of environment related issues among trade, economics, climate and biodiversity. We require deeper analyses of the technical and scientific aspects of these synergies.

Our most critical decisions should include clear indications of the means of implementation of sustainable wetlands management.

The high economic growth rate and coupled with rapid urbanization projected in Vision 2030 will exert immense pressure on the country's natural resources and on the fragile environment. In order to sustain the economic growth while mitigating the impacts of rapid industrialization, it will be necessary for the country to adopt a sound policy on the environment. The full implementation of agreed actions is the main challenge now ahead of us

Closing Remarks: Mr. Abdul Mwasserah – Provincial Commissioner, Western Province

Wetlands conservation has been indentified as among the highest priorities by the NBI analysis and other research. Wetlands have long been important to the people in the Lake Victoria region for fishing and agriculture.

However, under the changing circumstances of recent decades, resource use has changed, becoming more intensive and less discerning, to a degree that seriously threatens native biodiversity.

It is my belief that opinion and experiences shared here will go a long way in helping us develop sound strategies which will assist in integration of protected area management with local social and economic development plans as well as sound wetland conservation and management. we need to appreciate that problems in the basin are intertwined and require a common approach.

It is my hope that we have exhaustively identified the link crucial in transforming our growing knowledge of the basin into tangible plans and priorities necessary to address the challenges leading to sustainable development and conservation of the unique environment.

Let us address these challenges using all available resources and stakeholders, which I believe this project is trying to do to ensure sustainability of the plan and preservation of the livelihood of our people.