MANAGING WETLANDS WITH CHANGING TIMES-UGANDA'S EXPERIENCE

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Abstract
Wetlands cover 30,105km^2 of Uganda's total land area of 241,500km^2. With the coverage of 13% of the total land area, they represent one of the most vital ecological and economic resources the country is endowed with. Unfortunately their importance is associated only with the direct consumptive use value like crop cultivation, human settlement, and extraction of useful materials. The essential life support processes for example stabilization of hydrological cycle and microclimates, protection of riverbanks, nutrient and toxin retention and, sewage treatment are the least recognised. Destruction of these ecosystems is a serious environmental problem the country is currently faced with. The problem has reached alarming levels in Eastern Uganda where about 20% of wetlands have been destroyed. The underlying cause of this destruction is the insatiable desire of the poverty stricken population to derive livelihood from the wetlands. Some evident impacts of wetland destruction include adverse local climate modification, which has contributed to 2-meter drop in River Nile and Lake Victoria water levels. The other impacts are seasonal flooding and destruction of biodiversity and associated ecological processes. In attempt to address the problem, fairly comprehensive wetland legislation comprising the National Wetlands Policy 1995, the National Environment Statute 1995, the National Guidelines for Wetland Resource Developers 1995, and the National Environment Regulations 2000 (wetlands, River Banks and lake Shore Management) have been put in place. The government has also established a national wetland inspection division to specifically deal with wetland management. Internationally Uganda ratified the Ramsar Convention and has designated two internationally recognised wetlands as Ramsar Sites and in November 2005 Uganda hosted the 9th Ramsar Conference on wetlands. However, implementation of these measures is still at infant stages and is faced with many challenges like inadequate funding, political interference and limited awareness of the population on the existing wetland legislation and multivariate value of wetlands especially the ecological ones. The sustainable management of wetlands requires strengthening approaches that are current champion direct community involvement in planning and implementation of required actions. Such community participation is already being achieved through formation of Community Based Wetlands Management Plans (CBWMP). Sensitization and educational programs to empower local communities with knowledge and awareness particularly on the ecological roles of wetlands need to be scaled up to influence a positive shift of attitude and practices towards these ecosystems. Environmental Impact Assessment must be popularised and rigorously enforced for all proposed activities on wetlands. In addition, Uganda's commitment to wetland management, new and innovative approaches that effectively integrate various aspects of wetland management be adopted to curtail current environmental problems like desertification, degradation of catchment areas and ecological imbalance.

INTRODUCTION

Uganda covers a total land area of about 241,500 Km^2, of which 30,105Km^2 (13%) is Wetlands (NEMA 2000). The Ramsar Convention 1971, defines wetlands as "areas of marsh, fen, peat land or water whether natural or artificial, permanent or seasonal with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 meters". The National Environment Statute 1995, defines Wetlands (or swamps) as areas, which are permanently or seasonally flooded by water, and where plants and animals have become adapted. In general, a wetland can be defined as a shallow water body with teaming life of complex fauna and flora.

Wetlands represent one of the vital natural resources Uganda is endowed with. They provide ecological services (climate modification, water purification, waste water treatment, flood control and water storage and distribution in space and time); direct uses such as source of water for domestic purposes, livestock watering, source of fish, medicinal plants and animals, and various materials. They also have vital attributes such as biological diversity, gene pool research material, cultural values and aesthetic values. The overall economic value of wetlands in Uganda has not yet been quantified. Emerton et al, (1999), estimates the purification function of the 5km^2 Nakivubo wetland in Kampala at US$1.3 million per year. Papyrus harvesting and mat making in rural wetlands in Eastern Uganda contribute US$ 200 per year per family's income (IUCN 2005).

Unfortunately the importance of wetlands is largely associated with the direct consumptive use value. The essential life support processes (ecological) are the least recognized. By 2000, an estimated 2,376.4km^2 of wetland area had been reclaimed for agricultural, industrial and related activities. By the late 1990s, almost 8% of the wetland had been reclaimed (NEMA 2000). In 2006, with the exception of the two Ramsar sites, about twenty sex community wetlands managed under community based management plans and pockets of wetlands in various protected areas, a large portion of the wetlands still face degradation.

The underlying cause of wetlands destruction is the insatiable desire of both the rich and the poor to derive livelihood from the wetlands. This is exacerbated by the high annual population growth rate of 3.3% (UBOS, 2002), and pressure from industrial construction. The communities that access these wetlands use them for agriculture and extraction of various raw materials, and fishing. The per capita income of a Ugandan is about US$ 300 per year (NEMA, 2000).

Some evident impacts of wetland destruction include frequent flooding, destruction of biodiversity habitats and associated ecological processes. Adverse local climate modification characterised by prolonged droughts. This has largely contributed to 2-meter drop in River Nile and Lake Victoria water levels.

The government has pioneered several interventions to counter wetland degradation. These range from knowledge base building, policy, legal and institutional establishments and community based approaches.

This paper presents Uganda's experience in wetland management. The paper is structured into three sections. The first explains how wetlands were managed during colonial and immediate post colonial eras. The second traces landmarks in the legal, policy and institutional developments from 1986 to 2006. And the third presents community management approaches that have been pursued in the country. .

WETLANDS MANAGEMENT DURING COLONIAL AND IMMEDIATE POST-COLONIAL ERAS (BEFORE 1986)

In the colonial period (before 1962), the wetlands like other natural resource, were designated as reserves. Much as the wetlands legally belonged to the central government, the traditional institutions through monarchial systems played a big role in their protection. These were almost exclusively based on traditional beliefs and spiritual attachment. With political changes since independence, the powers of traditional institutions were reduced. As a result, they lost direct control over these resources. The communities also lost the sense of attachment to such resources. Consequently it became difficult to understand the definite tenure and property arrangements pertaining to wetlands.

Negative Government Policy

The government encouraged the drainage of swamps, by way of reclaiming them for agricultural expansion and other activities. By 1964, an estimated 16.2km^2 of swamp areas had been reclaimed through drainage (Kamugisha, 1993). In the Western Ugandan district of Kabale, wetlands were leased to dairy farmers who drained them and replaced the natural vegetation with pasture (MISR, 1998). There were no regulations provided to guide wetland drainage. This led to massive drainage especially in densely populated districts such as Kabale, Bushenyi and Iganga.

This also increased drainage of wetlands in urban areas due to industrialization particularly in the industrial districts of Kampala and Jinja in 1970s and early 1980s. Wetlands were the soft target for infrastructure development due to their low acquisition cost.

Limited awareness and poor knowledge base

Though wetlands were used for several socio-economic activities, there was limited awareness on their multivariate use especially the ecological functions. There was no national inventory of wetlands to guide management in addition to general lack of research data on wetlands. For example, the association of wetlands with diseases likes malaria and *Schistosomiasis* contributed to deliberate destruction of wetlands. Many swamps in urban areas were drained in the 1950s at least in part as a malaria-eradication measure (MISR, 1998).

LEGAL AND POLICY AND INSTITUTIONAL DEVELOPMENTS

In 1986, the Ministry of Environment Protection was established and it banned further wetland conversion until a National Wetlands Policy would be developed.

In 1988, the government of Uganda ratified the Ramsar Convention of 1971 on wetlands of international importance. Uganda is one of the parties with the largest surface of wetlands covering almost 30,000km^2 (IUCN 2005). In response to the requirements of the Ramsar convention Uganda has designated Lakes George and Nabugabo as Ramsar sites. Seven other wetland sites are in the final stages of listing as Ramsar sites. A biocentric approach of ecosystems management is emphasized in the two Ramsar sites. Each of these sites has a management plan to combat wetland and biodiversity loss, while ensuring that benefits accrue to adjacent communities. Uganda also hosted the 9th Ramsar Conference on wetlands in November 2005.

In 1989, the government established the National Wetland Programme (NWP) under the Ministry of Environment Protection to develop a national wetlands policy to guide the wise use of wetland resources in the country. From then, the (NWP) has also been carrying out sensitisation and awareness campaign and consultation to enlighten the public on values and functions of wetlands and the need for their conservation and sustainable use. The NWP has

also put in place a national wetlands inventory. However, the inventory is not comprehensive enough. For example it does not indicate which wetlands are managed sustainably.

In 1995, the Constitution of the Republic of Uganda 1995, guaranteed a place for the environment among the fundamental rights and freedoms of all people by providing every Ugandan citizen a right to a clean and healthy environment. The Constitution mandates the state to protect important natural resources, including land, water, wetlands, oil, minerals, fauna and flora on behalf of the of the people of Uganda (Chapter XIII of the Constitution 1995). The Constitution also encourages involvement of the public in the formulation and implementation of development plans and programs that affect them. Public participation is also required in enactment of laws to promote environmental awareness and preserve the environment from abuse, pollution and degradation.

In 1995, the government adopted the National Wetlands Policy, 1995. The overall objective of the Wetlands Policy is to enhance equitable distribution of wetlands benefits to all stakeholders. This policy describes in broad terms how the government intends to deal with Uganda's wetlands. However there was no enabling law for its implementation. As a result in subsequent years, this led to enactment of laws such as the National Environment Statute (NES) 1995, the Local Governments Act 1997, the Land Act 1998, the Water Statute 1995 and The National Environmental (Wetlands, River Banks and Lake Shores Management) 2000. These reinforce and give further details of specific aspects of wetland management.

In 1995, wetlands were incorporated in the National Environment Statute, 1995. The National Environment Statute (NES) addresses all aspects of biological diversity conservation and brings together all sectoral environmental agencies involved in the management of the environment under one forum to take collective decisions on environmental matters. The NES also provides various environmental legal requirements that are relevant to the sustainable management of wetlands. Some of these include:

- The application of Environmental Impact Assessment (EIA) started in 1997 after its adoption by the National Environment Management Authority (NEMA). Since then, proposed developments in the wetlands have been subjected to an EIA process to determine progress of such developments in addition to identification of the required environmental mitigation measures. This however, currently targets large-scale activities. Small-scale activities Which as well have potential cumulative negative impacts over time are not subjected to EIA.
- Environmental Audits are subjected to on going projects to determine the extent of their impacts on the environment and whether the degraded wetland can be restored.
- In July 2004 NEMA issued environmental restoration orders to wetland encroachers and in January 2005 it demolished a house that had been built in a wetland. This was an important event that demonstrated that wetland abuses would not be tolerated even from politicians. Requests for advice among project developers on how to utilize wetlands and whether to buy land or not have increased tremendously as a result of that sanction.
- Use of Environmental Easements is meant to facilitate the conservation and enhancement of burdened environment through imposition of some obligations. This has not yet been practically applied.

In 1997, wetlands were included in the Local Governments Act, 1997. This Act devolved wetlands management to district authorities for effective management purposes. They cannot however sell, lease or alienate wetlands under their jurisdiction. Districts manage wetlands according to all other relevant laws and legislation including the Constitution 1995, the National Environment Statute1995, Wetland Policy 1995. Technical officers mandated to implement wetland management activities have been appointed by the districts as provided for in the Local

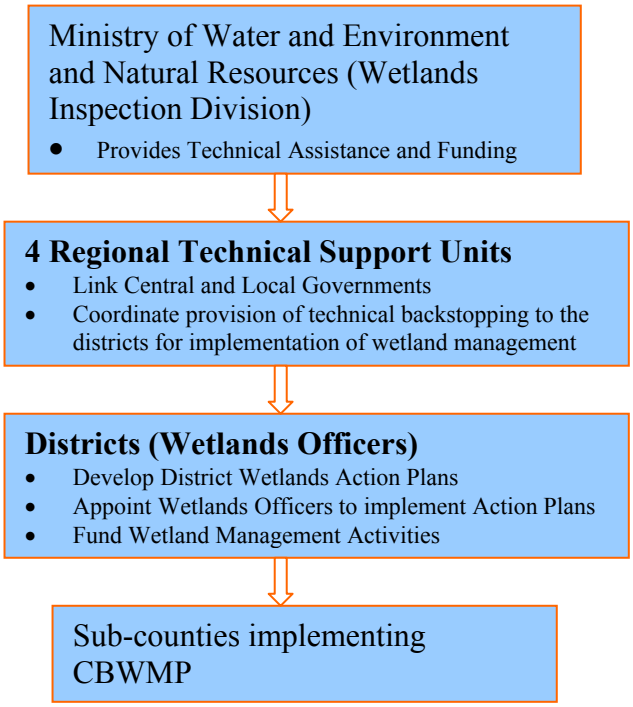
Governments Act, 1997. However, their capacity to effectively deliver is constrained by inadequate funds and political interference.

The Land Act 1998, deals with issues of land ownership. According to this Act Wetlands in Uganda are 'held in trust' by Government and local Governments for the good of all the citizens of Uganda in accordance with the Constitution 1995. Just like the Local Governments Act 1997, the Land Act 1998, also devolved responsibility of wetland management to the district authorities. There is however limited awareness about its provisions and therefore local communities still lay claim on wetland areas.

In 2000, the National Environmental (Wetlands, River Banks And Lake Shores Management) Regulations, 2000 were developed and enforced. These Regulations recognize the ecological relationship among wetlands, rivers and the lakes. This provides integrated approach in the management of these ecosystems. These Regulations prohibit central government or local governments from leasing out or otherwise alienate any wetland. This has however been abused. For example, the Ex-Army Officers (Veterans) in 2006 established a market in a wetland located in Wandegeya – a Kampala city suburb without carrying out Environmental Impact Assessment. . This was a politically sensitive issue, which seems to have deterred intervention from the institutions implementing the wetland legislation.

The country is currently implementing the National Wetland Sector Strategic Plan 2001- 2010. The vision of the Strategic Plan emphasises wise use to allow wetlands to provide sustainable benefits to the population of Uganda as a whole, mankind in general and the environment in the long-term.

Institutional Framework (WID, Regional Technical Support Units, Districts)



The effectiveness of these institutions is constrained by under staffing, inadequate funding and limited coordination among the different sectors involved in the management process.

Uganda's process in the enactment of environmental related laws has a strong foundation guaranteed in the Constitution 1995. This has enabled enactment of subsequent specific wetlands related laws to address wetland degradation reaching alarming level of 20% in Eastern Uganda. Implementation of some of these laws has made landmarks in the management of wetlands. For instance the legal requirement for environmental impact assessment and the

issue of environmental restoration orders to wetland encroachers in 2004 guide development projects activities in the wetlands. However, effective implementation of these laws is faced with a number of limitations and challenges. The major limitation being political interference which undermines enforcement of laws. While the major challenges are a result of various laws scattered in the various national laws and general lack of awareness by the general population of these laws. This accounts for continued assumed individual ownership of wetlands which contravenes the Constitutional requirement for the state to own and manage wetlands for good of all its citizens.

EVOLUTION OF COMMUNITY INVOLVEMENT APPROACHES IN WETLAND MANAGEMENT

Up to mid 1990s, wetlands and general resource management had been viewed as the responsibility of the central government. There was too much reliance on command and control regulatory approach. Community involvement in natural resource management was not encouraged and as a result compliance was poor. This prompted the National Wetlands Programme to adopt community participatory approach in wetland management. This is basically interactive participation where communities are involved in joint analysis, action planning and the formation of new local groups or the strengthening of existing ones. This has been reflected in the wide consultation nationally in the development of some recent laws particularly the Constitution of 1995 and the National Environment Statute 1995. The involvement of the public has been beneficial in identifying natural resource problems and in developing sustainable and acceptable solutions.

The National Wetlands Programme has changed its management approach over the past fifteen years. It started to work with wetland community approach, then moved to resource user approach and currently works with the ecosystem approach. These approaches and the reasons for this progression is covered below:

The Wetland Community Approach

This approach was based on the assumption that there was a coherent 'wetland Community'. The objective was to develop and extend practical methodologies for wetland resource management by local communities. The approach targeted communities living in or near wetlands. In consultation with the district officials, demonstration sites were selected. The demonstration sites were selected based on the following criteria: The wetland had to have clear problems of past misuse; the wetland was well known as an important resource; the community was supportive of conservation measures; markets were available for the products from the wetlands. Communities received funding and support for community-based wetland initiatives in selected districts. This approach was designed to define strategies to enhance, broaden and maintain the diversity, benefit and activities in wetlands. Other interests were to mobilize community support for wetland conservation, end the rampant misuse, inequitable access and unsustainable use of wetlands.

In order to ensure a smooth running of demonstration project activities, districts, sub-counties and communities were identified as key stakeholders. These were helped to understand, appreciate, and take up replication of activities to other interested groups. In addition the need for these stakeholders to integrate wetland issues into their development plans as well as district and sub-county budgets was considered very important.

However, an evaluation of the demonstration project approach in 1997 showed that the assumption of the approach, that there was a coherent 'wetland Community' was false. The wetland and catchment interaction and therefore impact on off site communities was not considered. Furthermore, the households in the demonstration projects depended largely on agriculture whilst wetlands provided water and limited opportunistic extra income. This made it

difficult to demonstrate benefits of sustainable wetland management to these communities. For these reasons, the NWMP decided to focus more on the different wetland resources that communities use in an approach called the 'resource user approach'.

The Resource User Approach
This approach targeted the management of specific wetland resources and involved those community members with a direct stake in the wetland. The approach considered the communities bound by similar interests in use, abuse, or conservation of a wetland resource. For instance papyrus users, Pottery groups, Rattan cane users, Phoenix users, paddy rice growers and fishers. The projects did deliver more sustainable management practices on the ground, and translated these in to a series of guidelines and for specific resource use.

However, the National Wetland Programmed (NWP) realized that the approach was inappropriate considering the multiple uses of wetlands and the fragile nature of the resource. The approach is anthropocentric based. It focuses more on the satisfaction of human needs than sustainable management of biological diversity. A more holistic approach that encompasses the entire ecosystem and its communities was necessary. This led to a move to the ecosystem management approach.

The Ecosystem Approach
Communities are involved under the umbrella of ecosystem approach through Community Based Wetland Management Plans (CBWMP). Currently, there are about twenty six community management plans in the country. The development of such a plan is initiated by the Wetlands Inspection Division (WID) and districts based on the wetlands inventory. Non Governmental Organisations, Community Based Organizations and the local communities can also initiate CBWMP when they are confronted with wetland degradation or increasing conflicts over resources. A CBWMP is developed by taking various steps which include identification of stakeholders, performing a resource analysis, selection of representatives, identification of issues and opportunities, developing a management plan, seeking feedback and approval and finally implementation of the management plan.

The ecosystem approach allows all stakeholders of a wetland to arrive at an agreed management plan. The plan spells out the roles and responsibilities of all stakeholders in the management process and the resources needed for implementation. The plan also identifies needs and priorities, approaches and procedures for implementation and monitoring wetland management.

The ecosystem approach involves five steps namely: determining the stakeholders and the ecosystem area; determining ecosystem structure, functions and management need; understanding economic issues and resource use; involving the stakeholders in the management of the wetland and use of adaptive management to allow for changes in the management regime.

The progression through the three community involvement approaches demonstrates a real potential for Uganda to achieve sustainable management of wetlands by championing communities participation in the overall management process. These approaches have provided great practical experiences that are important for the success of any community involvement approach. The ecosystem approach for example is making success in the following areas:

- The wetland management plans have integrated and facilitated on-going activities and added value to some projects already underway by providing a broader context and clearer definition of different roles and responsibilities of stakeholders.
- There has been restoration of some degraded wetlands. In Kumi district in Eastern Uganda, for example, a wetland that was cleared for rice cultivation has been restored. This has resulted into the return of springs that provide clean water, fish and the papyrus to the

communities. The wetland is clearly demarcated by a fence and the community actively follows and monitors the provisions of the management plan.

- Awareness on benefits of wetlands has broadened. Evaluation of knowledge, Attitudes and Practices in 2000 showed that 81.4% of the respondents believed that wetlands provided more benefits, mainly water provision, than problems, for instance malaria (IUCN 2005).

However, the sustainability of this approach overtime is threatened by lack of models that build on poverty-environment linkage to sustain community enthusiasm. This management approach is also time demanding and is currently beyond their capacity. Lack of economic valuation of wetlands limits appreciation of the realist value of these ecosystem to justify their conservation.

GENERAL CHALLENGES AND LIMITATIONS

The existing legislation is fragmented in the different laws. Access to these pieces to the general public is therefore constrained. The problem is further amplified by the high illiteracy rate estimated at 38% of the population aged 10 years and above.

Political interference in the allocation of wetlands to people for settlement, industrialisation and crop cultivation through patronage and as political rewards is a big challenge. This deters enforcement mechanisms in place.

Under staffing puts tremendous pressure on the limited number of staff especially at national level. The Wetland Inspection Division which is the umbrella institution, for instance has only five staff. There is no formal mechanism to coordinate between different sectors and align wetland management with other related natural resources management.

Funding is inadequate and much of it comes from donors. This poses uncertainty in the absence of donors.

The failure to put in place practical ways that allow sustainable use of wetlands to contribute to poverty reduction threatens the sustainability of CBWMP over time.

The communities are still not aware that wetlands are legally owned by government for the good of all Ugandan citizens. There is still assumed ownership of these ecosystems, leading to continued encroachment. The problem is further compounded by lack of statutory regulations defining the identification or demarcation of wetland boundaries.

There is still serious lack of knowledge about wetlands. The existing wetland inventory does not provide comprehensive data required for management purposes. The inventory for example does not provide adequate quantitative data on the status of wetlands. Even available research data is not accessible to especially the communities.

The country lacks a land use policy to guide general land use in entire catchment areas.

The scope of projects subjected to EIA is still narrow. Small-scale activities that collectively can have significant impact on the environment are not currently covered.

Economic valuation of wetlands is needed in order to use realistic economic benefits of wetlands when dealing with the communities. This is vital in justifying the rational for the sustainable management of these ecosystems.

WAYFORWARD

A specific wetland law and general sensitisation of the general public is required to focus attention of the general public to wetland management.

More capacity building is required at district and lower levels to enable communities to increasingly take up the responsibilities of wetland management under the decentralised system of governance. This can address the funding constraints and inadequate staffing.

There is need for the various sectors involved in wetland management to put place a memorandum of understanding to avoid poor coordinate and institutional over laps.

The scope of projects subjected to EIA should be widened to cover small-scale activities, which collectively have significant negative impact on the environment.

Knowledge base building through research should be encouraged, and with effective dissemination in place the general population can be educated on wetland management issues.

CONCLUSION

Uganda's experience in wetland management has been interesting. Since 1986, a number of landmarks have been made in legal and institutional development in response to serious wetlands destruction. The Constitution and the subsequent laws are quite realistic and impermeable. The requirement for Environmental Impact Assessments for example has been used as a decision making tool in the use of some wetlands. However, a number of limitations and challenges such as political interference, and general lack of awareness among the public on the multivariate values of wetland and the existing legislation still need serious attention. The under staffing in institutions, inadequate funding and limited coordination among the different sectors involved in the management process should also be addressed.

The lessons and experience gained from the three community involvement approaches demonstrate a real potential for Uganda to achieve sustainable management of wetlands by championing community involvement in the general management process. These approaches have provided great practical experiences that are important for the success of community involvement approach in wetlands management. The current efforts are good and should be enhanced by addressing challenges and limitations covered in this paper.

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