

Traditional wetland practices in rural communities in Uganda

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Abstract

One of the major ways to develop policies and guidelines for sustainable use of wetlands is through a better understanding of their traditional uses. This is because traditional management systems are based on indigenous knowledge and practices passed on from generation to generation. These ideas are the ones that need to be promoted and applied during wetland management planning, as there is consequently a need to test a variety of potential use options for wetlands.

Studies conducted in Busia and Rakai districts, revealed that in the 1940s cultivation in wetlands, sand mining and use of papyrus, ranked lowest (1 score), while the traditional use of wetlands for water, hunting, grazing and fishing ranked highest (5 scores). This suggests that these traditional uses were sustainable under low population densities and had regulatory systems, a situation which changed in the 1990s with cultivation, papyrus use and sand mining ranking highest, while hunting steadily declined. There are some changes in climate as a result of wetland use and conversion due to increased population.

The study suggests that indigenous knowledge provides the best management options to the continued use of wetlands especially those that provide at least one known essential good, service, or attribute where alternatives are not practically or economically viable. Strategies for proper management planning for wetlands intended for use have been discussed.

Key words: Wetlands management, planning, sustainable, benefits, beneficiaries, vital, endangered

Introduction

Traditional wetland practices are those regulated activities in a wetland, based on indigenous knowledge and practices. They are a basis for the development of viable pilot projects and the wetland management planning in Uganda. Indigenous knowledge and practices are those practices akin to a specific tribe or group, and in a specific area, aimed at regulating and controlling use and abuse. They have for a long time been applied in activities like fishing, harvesting plant resources, hunting, and grazing.

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. They contain characteristic fauna and flora specially adapted to these water logged conditions. For many years wetland use was limited to activities that did not adversely affect the ecosystem and its productivity. However pressure on wetlands has increased as people turn to them to provide agricultural and industrial land, domestic and industrial water or ground for dumping waste. Elsewhere some wetland resources are slowly being depleted or degraded through over-harvesting. This may result in reduced long-term production for human needs, lower water tables, changes in microclimates and loss of biological diversity.

Altogether therefore the goods, services and attributes, constitute a considerable ecological social and economic value, which may be lost when wetlands are converted or altered. Overtime, particularly with the noticeable changes in weather,

the values of wetlands have slowly been appreciated, as indicated by the increasing number of people dependant on them for their livelihood. Thus, wetlands are definitely not wastelands, but contribute to the gross national product both, tangible and intangible benefits.

A part from rice cultivation and some reclamation, active wetland management is a new concept in Uganda, and little is known about which activities are possible and desirable in wetlands. Data so far collected suggest that “ traditional uses” (grazing, fishing, papyrus harvesting) could be sustainable, and the National Wetlands Policy allows such uses to continue. However, this view has been challenged on the basis that these practices were sustainable not by their nature but by the fact that they were carried out under low population densities. Increasing intensity of such practices without regulatory measures will eventually render them unsustainable. Consequently, there is a definite need to test a variety of potential sustainable–use options, including the traditional ones, in order to establish their ecological and socio-economic feasibility. It is also necessary to assess the effect of the rising populations on the wetland resources. The vast size and ownership status of wetlands remain a challenge to the application of these strategies and interventions.

The objective of this study was to assess the traditional resource use systems of wetlands, and derive from the existing resource regimes, basic information to guide the process of developing appropriate interventions/resource management strategies, through testing and development of a variety of user options.

Methods and materials

The study was conducted in the districts of Busia and Rakai. Busia District lies between co-ordinates 605 000 and 625 000E, latitude °010 750 and °065 900N in the southeastern region of Uganda. It is west of the Republic of Kenya, north of Lake Victoria, east of Bugiri District and south of Tororo District. The total area of the district is 743km² while the area covered by wetlands is approximately 171km². The drainage system is mature with wide valleys that occur in the low-lying flat areas in the north, central and south of the district. The valley floors are mostly occupied by wetlands of impeded drainage or are drained by sluggish streams forming part of the Macdonald /Berkeley Bay catchment for Lake Victoria.

Rakai District on the other hand has a total area of 4898 km² of which 1278 km² is occupied by both permanent and seasonal wetlands, while that of converted wetland area is 44 km². The district is divided into four main topographical zones namely, the Lake Victoria shore, the northern eastern hills, the western hills and the north western plain. Wetlands in the district lie at altitudes of between 1300 and 1700m above sea level. Rakai District is drained by a number of streams and two rivers, Kibale-Bukora and Jemakunyo all found in the Lake Victoria catchment of Sango Bay.

Three sub-counties each were sampled, using stratified cluster sampling method and Participatory Rural Appraisal method (PRA), termed Participatory Wetland Appraisal method (PWA) for purposes of the sector (wetlands being dealt with). PRA/PWA is a term used to describe new approaches and methods in which rural people themselves do much more of the investigation, presentation, analysis, planning and dissemination, than has been the case in the past. Therefore data were collected using resource

transects, profiles, matrices, brainstorming, cause-effect analysis and documentation reviews and card-system. To reduce on the error margins, a questionnaire was used to assess the level of knowledge, attitudes and practices (KAP) in wetlands.

Results

The traditional practices mainly emphasized sustainable utilization, such as aesthetic value and revolved around various controls to ensure sustainability and existence of various resources. They were based on acceptable, though not documented regulations and rules.

Table. 1. Traditional practices of wetlands as obtained from communities of Busia and Rakai Districts, during surveys carried out between 1999 and 2000.

Resource	Methods used
1. Papyrus	Selective harvesting of only culms for use in a particular activity e.g. craft making, thatching etc.
2. Grasses namely; Miscanthus, Typha and Cyperus spp	Clear cutting in blocks, through a rotational system, to allow for regeneration.
3. Livestock stock grazing	Wetland edge grazing and agriculture during the dry season
4. Palms	Harvesting was only before the new moon, this controlled incidences of over harvesting.
5. Shrubs	Whole plants were not cut, instead mature and drying twigs were collected
6. Herbs	Quantities to last for specific periods was collected and preserved. Only herbalists collected the herbs, which also controlled over harvesting.
7. Wild animals like the Sitatunga (enjobe) edible rats, wild pigs etc.	Pregnant animals were not hunted
8. Wild foods e.g. vegetable, fruit, mushrooms, white ants.	Mostly harvested during droughts, ensuring their availability during all seasons.
9. Water for domestic use and livestock watering	Done at particular points
10. Cultural groove and aesthetic beauty	Entry was restricted for people, except during various ceremonies, habitats were thus conserved as a result

People are more familiar and appreciate tangible benefits and while most understand that wetlands provide the following services, they believe these are infinite and do not directly relate to the uses they make of the wetlands. It should also be noted here that traditional practices, ensured controlled use, but were also only sustainable under low populations. This is not the case today, hence a threat to the services provided by wetlands in the study areas.

Uses and users of various wetland products have changed with time. Existence of alternative tastes and skills for a given area may be responsible e.g. the use of grass for thatching is reducing as corrugated iron sheets are becoming more available; but grass is an important mulching material due to the reducing soil productivity. However, grass registered low score in the 1980s (Table 2) compared to earlier periods when it was very important. There is increased use/dependence on particular wetland resources, due to changes in marketability of cash crops and the need for money, seen in the high priority attached to these resources overtime. They have thus moved from resources used for domestic purposes, to cash resources. Examples

include papyrus, grass, sand, clay, firewood etc (Table 3). Such commercial activities, lead to uncontrolled exploitation of these resources.

Table 2. Scores showing trends for the various traditional uses of wetlands as recorded in Busia and Rakai Districts in Uganda from 1940 to present.

PERIOD	AGRICULTURE	WATER	GRASS	SAND & CLAY USE	PAPYRUS	MEDICINAL HERBS	FIRE WOOD	FISH	HUNTING	FRUITS
1940-1959	1	4	4	4	4	2	1	1	3	1
1960-1979	1	4	4	2	4	2	3	1	2	1
1980-todate	3	3	2	4	4	1	3	1	1	1

SCORES

1 = negligible
 2= not important
 3= important
 4= very important

There is also a shift from one wetland to another within the wetlands e.g. people have shifted from the use of *phoenix reclinata* poles for building pit latrines and bridges to using clay bricks and concrete materials respectively.

Table 3. Current ranking of resource use

	AGRIC	WATER	GRASS	SAND & CLAY	PAPYRUS	HERBS	FIRE WOOD	FISHIN	HUNTIN	FRUITS
X/30	28	27	27	16	13	12	8	2	0	0
RANKING	1 ST	2 ND	2 nd	4 th	5 th	6 th	7 th	8 th	9 th	0

The use of wetland for agriculture continues to increase, while traditional practices like collection of medicinal herbs and hunting are continually becoming negligible activities.

Papyrus use since 1940 continues to rise, while the use of sand and clay dropped between 1960 –1979, and picked up again in the 1980 to date, mainly for use in building. Water for domestic use and watering animals remains important, and did not register much drop in use. However, it is now substituted by water from boreholes and taps.

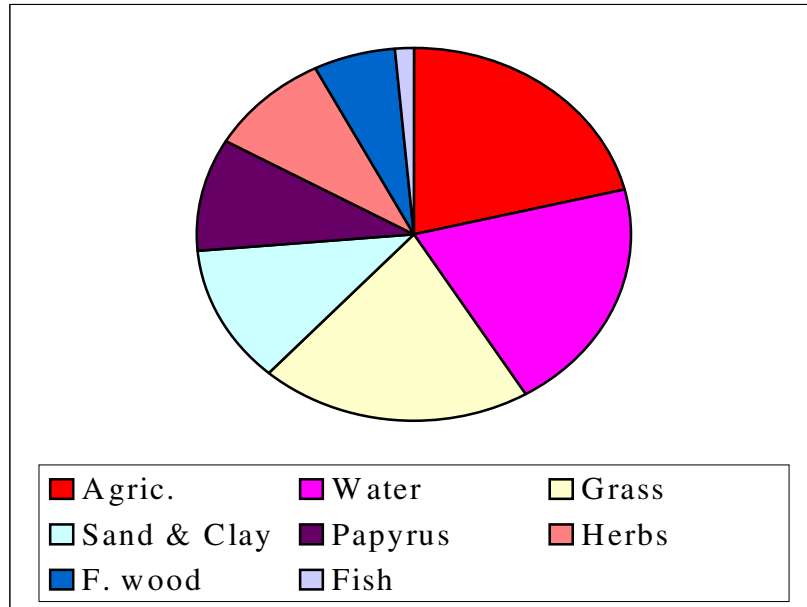


Figure. 1. Current resource use

Agriculture in wetlands is increasing and is attributed to the reducing soil fertility in the catchment. In addition to this, changing climates and the increase in population numbers has led to the move to wetlands because of the longer dry spells now being experienced and yet the land is also not enough to cater for the increasing numbers. Water collection for domestic use and watering of animals remains important, especially during the dry season. Grass use also ranks high. While papyrus use continues to be important, it was ranked 5th, due to the fact that alternatives are available, but it remains very important and cheap because one does not have to pay for its use. Herbs, fuel wood and fishing in wetlands, are slowly dying out as alternatives.

From 1940s to 1960s, no major wetland threats were recorded other than the weather events of drought and floods that affect both wetlands and catchment areas. From the 1970s to 1980, wetland encroachment through unsustainable practices such as plant resource over harvesting (e.g. papyrus, fuel wood) and non-traditional fishing practices began with consequences such as a deceptive assumption that wetland resources were inexhaustible, being noticed. Traditional management practices were thus slowly being eroded.

Furthermore a number of wetland resources have been over-exploited overtime, reducing in importance, as people turn to alternatives. An example is that indigenous fishing is slowly dying out as lake fisheries take over and also as indigenous fishing skills are not passed on to new generations. Between 1980 to date, conversion of wetland through reclamation and unsustainable practices, like harvesting, total conversion for agriculture became worse as a result of drought, famine, and floods.

Table 4. Incidents and impacts on wetlands over time

1940s – 1959	
Prolonged drought (famine)	Famine drove people into the wetlands
1960s –1979	
A lot of rainfall – floods	Caused floods which destroyed food crops, but also led to the expansion of the Wetland, and therefore increase of some resources like papyrus A lot of fishing took place
1980- to date	
Floods	No cultivation in wetlands due to the high water levels
Drought/famine	Low level of water in wetlands encouraged edge gardening and was the beginning of large scale encroachment, through conversion of agriculture more so with increased number of people. Loss of soil moisture and fertility/less rainfall in the catchment
Large scale deforestation in The catchment registered	Sustainable fuel wood harvesting in the wetlands, slowly phased out as it became survival for the fittest and selling of fuel wood began as well.
Wetland burning	A negative trend registers explained by increased number of users (hunters versus resource harvesters), traditional systems no longer active.

Before the 1970s, wetlands were regarded as community property resource enhancing the traditional management systems. Wetland ownership is still unclear and none of the areas has explored the possibility of getting legally backed use and access rights of wetlands, as opposed to that recognized culturally.

Discussion

Community regulations for the use of permanent wetlands and grazing area stipulated free access and user rights for community members, because all community members knew that these areas were for the benefit of the community. Methods of accessing/using resources were clearly understood by all users and whenever these were contravened traditional structures to handle such matters took over. It is interesting to note that the rules and regulations were not written but were known and understood by all. For example, everybody knew that grazing and gardening on the wetland edge was done during the dry season or extended drought periods.

Some sections of the wetland were reserved for their aesthetic beauty and also to serve as cultural grooves. In addition, specific plant resources had harvesting restrictions e.g. *erithrina* was used as a traditional disposal place, Phoenix reclinata was never harvested during the full moon, because you would not get good quality leaves. However, a scientific explanation has been given for this, that is, it is during this time when trees are infested with moths(Kakuru, unpublished)

On hunting, restrictions were also made on which animals to hunt e.g. animals representing totems for particular clans, such as lungfish. In addition, hunters were banned from killing pregnant animals, fishermen from trapping immature fish. All this was ensured through the type of harvesting method used. Selective harvesting of plant resources such as papyrus, grass, fuel wood and others ensured sustainable harvesting and use of plant resources.

While the traditional management systems ensured the ecological stability of the wetland ecosystem and the socio economic benefits to communities, present practices have increased pressure on the wetland resources mostly due to population increase that has led to land degradation, thus destabilizing the ecological systems of the wetland and reducing the socio-economic benefits to the community.

The new practices have led to a shift from traditionally used wetland resources to more commercial resources from wetlands, such as clay and sand. This has resulted into massive degradation of entire wetlands.

Impacts on wetlands by the various socio-economic and climatic events

The various historical events/incidences have impacted on the traditional management systems in that some of the sustainable practices were dropped due to abundance of resources, for instance fish and papyrus that increased after flooding in 1961 and 1997 that led to over harvesting of resources. Floods further led to expansion of some wetlands, thus affecting the efficiency of the traditional management systems because of the unexpected changes in the normal weather cycles and size of wetlands.

On the other hand extended droughts led to degradation of the wetland catchment areas forcing many communities to encroach on the limited remaining wetlands that are then extensively utilized.

Ownership of wetlands

At community level, many wetlands were common property areas, set aside for edge cultivation, flood plain cultivation, fishing, grazing, and harvesting of natural products. Community regulations for use of permanent wetlands and the grazing areas also stipulated free access and user rights for all community members. However increasing intensity of such activities and practices were possible under low population densities, which is not the case today. Population increases continue to be registered adding pressure to the already threatened wetland resources. This is made worse by the deteriorating soil fertility in the catchment.

Trends in wetlands ownership has shifted from communal property resources before the 1990s to private property ownership through the Government policy of 1972 and then recently reverting back to communal property through the Wetlands Policy (1995), National Environment Statute (1995) and Constitution (1995). This is a positive development as far as the need for wetland management planning is concerned considering that today population has increased, tastes have changed, ecosystem resilience has reduced and there is use of and therefore increased pressure on wetland resources.

However, the current legal provisions on wetland ownership are not enough to ensure their sustainable utilization. Efforts should be made to engage the various stakeholders in the planning processes as well as introducing access and user rights in a bid to engage resource users in monitoring and evaluating the utilization of wetlands. This calls for the integration of the traditional management strategies and new user options, and should be accompanied by enforcement of laws at all levels.

The ownership status of wetlands, as provided for in the National Environment State, the National Constitution of Uganda and the Local Government Act “wetlands are

public resources, but held in trust of the people". People particularly in rural areas do not yet understand what this means. The issue therefore is how to relate this status with the traditional systems and the improved management options.

Wetland ownership is still unclear and none of the areas has explored the possibility of getting legally backed use and access rights of wetlands, as opposed to that recognized culturally and worse still there has been limited popularization of the legal provisions of wetlands conservation seen in weak enforcement and intensified encroachment (as opposed to the need to survive).

Conclusion

Wetland management is a new discipline hardly 10 years old and there is lack of tested wetland use options. This creates pressure to find alternatives, which is not matched by the continued encroachment on wetlands as demands for survival overwhelm the need for conservation. Furthermore, the continued loss of cultural values, and/or adoption of new, but unsustainable practices, due to migrations and limited technical expertise to a handful of people, and yet management is devolved to local governments, clearly affects the implementation of the interventions and therefore the implementation of the wetland policy.

Therefore, there is increasing need for the integration of traditional management strategies and new user options, accompanied by enforcement of laws at all levels. In addition, critical wetlands (vital and threatened, vital, threatened) for management planning and/or possible gazettement must be identified especially if sustainable utilization is to be ensured.

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