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The Use and Miss Use of Wetlands In Kampala Emily Gumm Spring 2011

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Dedication

I would like to dedicate this paper to the people at home, both at my home in America and my new home in Uganda. Both families have supported me on this journey of learning and personal growth and I thank them for that.

Acknowledgments

This paper would not have been possible with out the help of some very wonderfula nd kind people. I would also like to thank the staff at the School for International Training: Charlotte Karungi Mafumbo, Miriam Lumonya, Martha Nalubega Wandera, Jennifer Wateta, Meddie Osundwa, and Paul Musungu. I would also like to thank Fredrick Kiwazi for acting as my practicum supervisor and guiding me in my research.

Abstract

This research examines the complex and inter related relationship between conservation and development of wetlands in Kampala. Development and conservation are two concepts that are often at odds with one another. However, in a natural resource rich country such as Uganda development is benefited by carefully considering the role of conservation. As a student of Sociology at Illinois Wesleyan University, the researcher is especially interested in the use and miss use of wetlands as well as the decision making process in building on wetlands.

This paper examines specifically Uganda's wetland policy and how it is currently being implemented, specifically in Kampala. Another objective of this paper is to learn about how Kampala has been affected by wetland policies, both environmentally, as well as financially. Finally, this paper seeks to find out what conservation plans are underway to save the remaining wetlands of Kampala.

During the practicum period of March 28th to May 6th research was conducted on development, conservation and policies regarding wetlands in Kampala. This case study makes use of qualitative research methods to examine the environmental and economic effects the wetland policy has had on Kampala City. This research was conducted through in-depth policy analysis and literature reviews as well as site visits to wetlands in Kampala and interviews with those working on policy and the ground.

The research found that although the protection of Kampala's wetlands is an important priority for many, lack of resources, accountability, and conflicting interests often leads to the miss use of the wetlands. The policy calls for a stop of draining of wetlands and cultivation but these activities have continued simply because there is no government or institution watching the wetlands and the activities that take place within them. The institutions and government organizations that are in charge of wetlands are accountable to no one, so they can choose to conserve as they see fit, leaving wetlands vulnerable to development. Finally, there are many conflicting interests in wetland protection, development of wetlands offers short term solutions to important social problems such as

unemployment but also creates long term problems such as flooding.

Due to these problems there are several recommendations that need to be made for the government to put a stop to corruption, increase political will to protect this resource and to change for how wetland protection institutions are run. Another key recommendation is to empower the stakeholders of the wetlands to live in union with their surroundings so that they can benefit from them in the present and also preserve them for future generations.

List of Acronyms

BTC: Belgium Development Agency

DDC: District Development Committee

EIA: Environmental Impact Assessment

KCC: Kampala City Council

LC: Local Councilor

NEMA: National Environmental Management Authority

NGO: Non Governmental Organization

PAR: Participatory Action Research

WID: Wetlands Inspection Department

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1.0 Introduction

Wetlands are complex areas of water and land that when used to their fullest potential can be an invaluable resource. However, their ecological complexity can make them difficult to manage in even the best of situations. With Uganda's rapidly expanding economy and booming population the choice between conservation of wetlands for future generations and development of businesses for current employment and income becomes a difficult one. As a result of this challenge, this paper seeks to understand the National Ugandan Wetland Policy and its environmental and economic effects on Kampala City.

This city was chosen as the area of focus because the tropical climate, proximity to Lake Victoria and hilly geography make it a hotspot for wetlands to naturally occur. Kampala also has a rapidly growing population that includes many citizens who already have land titles on wetlands or are in the process of developing them for other means. Understanding, the relationship between environment and society is key in making plans for a safe, clean and sustainable future in Kampala.

For the study itself, the researcher interviewed members of various wetland protection organizations. All of these were government run organizations, but often stem from different parts of the government. All the organization were located in Kampala City or near by suburbs. The interviews came specifically, from key members of NEMA, Kampala City Council and the Wetland Department are all critical in developing an accurate picture of Wetland Policy implementation and its effects on Kampala City.

Within Kampala City, the researcher also took advantage of the wealth of documentation available at NEMA library. This included access to key first sources such as the Wetland Policy and the National Environmental Act, as well as secondary sources such as newspaper articles and public awareness pamphlets. The research methods also drew on the fact that the focus was a case study of the wetland management in Kampala City.

Despite, the variety and depth of these resources, several obstacles were met during the research. Many documents were difficult acquire or unavailable, the same was true for several key interviews. Due to the sectoral approach to wetland management it was difficult to ascertain what activities each organization did to implement the policy and how. As a result of all these challenges the research took longer than initially expected and yielded less information.

Nonetheless, the paper covers gives background on wetlands, their location in Kampala, and their uses. The paper also discusses why a policy is needed, how it developed, current implementation, financial and environmental effects, plans for conservation and challenges to those plans. Finally, the paper makes recommendation for future policies, conservation plans and further research.

All of this information is pertinent not only to the decision makers of Uganda but the people who live here, work here and want to sustain wetland environments everywhere. Government officials benefit from considering how policy is being implemented as well as weighing both the environmental and financial effects in decision making for future. For the people of Uganda and all people who live and work in Kampala it is pivotal that they know what is happening to the wetlands and why. This will enable them to choose how they live with the wetlands and what demands they want to make of their leaders. Finally, Kampala City is just a case study, there are hundred of other cities and towns built on or near wetlands. This paper illustrates what happens when wetlands are developed as well as how they can be conserved. Thus serving as both a cautionary tale for development and conservation valuable lessons for any group who aims to maintain the environment while supporting a society.

The paper contains a background section that has several sub categories within it this is followed by objectives, justification and methodology. This is followed by the findings and discussion section, it contains sub categories such as why a policy is needed, how it developed, and its financial and environmental ramifications. All of this is followed by a conclusion, recommendations for future research, a bibliography and several appendices.

1.1 Background

1.1.1 Definition of Wetlands

The internationally recognized definition of wetland comes from the Ramsar Convention held in Ramsar, Iran in 1971 to establish standards for wetlands and promote their protection. The definition agreed upon is that "wetlands are areas of marsh, fern, peat-land, or water, whether natural or artificial, permanent or temporary, with water that is static, or flowing, fresh, brackish or salty, including areas of marine water that do not exceed 6 meters at low tide.¹" This definition is similar to the definition set forth by the National Wetlands management and Conservation Policy of 1994, "an area that stay wet long enough for only certain plants and animals to grow even when there is no rain.²" Both definitions will be usable and are applicable for this paper.

1.1.2 Use of Wetlands in Kampala

All wetland uses can be divided into four groups; provisional uses, functional services, cultural services and regulatory services. Functional services are the result of the wetland providing water storage and water distribution due to the shape, scope and size of the wetland. Regulatory services are some of the most expensive water services that a wetland provides for free³. These include filtering water by removing toxins and replacing minerals. Regulatory services also include the way the wetland ecosystem becomes a carbon sink absorbing greenhouses gases and other pollutants from the air.⁴

Cultural services are rarely utilized in Kampala district but are much more common in rural areas. These services include collecting papyrus for crafts and hunting, fishing, and hunting the monitor lizard for its skin for the ngalabi drum.⁵ Unlike Cultural services, Provisional uses are the most common in Kampala. These involve people taking water, wood, plants and animals from

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¹ Wise Use of Wetlands Handbook, Ramsar Convention Secretariat, Gland, Switzerland 2007

National Wetland Management and Conservation Policy 1994

Interview Fredrick Kiwazi March 14th 2011

⁴ The Wetland Status Report for Kampala District, Department of Environmental Protection 1996 page 2

⁵ The Wetland Status Report for Kampala District, Department of Environmental Protection 1996 page 11

wetlands. This happens a great deal to to the proximity of wetlands to homes and the poor population who is often subsisting on these items. If provisional services are taken in excess, the wetlands can be degraded and eventually completely destroyed.⁶

Currently, wetlands are used in multiple ways in Kampala, some allowed and some illegal. In Kampala City, heavy population density and an increase of immigrants to the area, has lead to construction on wetlands. Construction types include industrial development, residential development and cultivation of the land around the houses. Developers often feel that large construction projects are ideal for wetlands because wetlands remain among some of the few places that are still completely open and unused due to their past difficulty to build on. However, wetlands remain somewhat difficult to build on because they must be cleared and drained as a result the land is sold or leased for a relatively cheap amount.

The increase in population in Kampala has also created a need for more housing space and so poor people will build small homes on the wetlands, these settlements often grow into slums. The development of houses leads to an increase in cultivation of the wetlands for agricultural purposes.

Common products grown on wetlands include sugarcane and cassava. Unfortunately, these plants take a lot of water and do not return nutrients to the system as efficiently as papyrus creating an imbalance in the ecosystem.⁹

Roads and other development projects are also commonly being built through the wetlands.

They are extremely important for the people of Kampala to have access to markets, education and health care but they are not always built in a way that mitigates flooding. In fact they usually create a wall that blocks water from going where it normally would, the Northern By-Pass is an example of

⁶ The Wetland Status Report for Kampala District, Department of Environmental Protection 1996 page 12

⁷ The Future of Wetlands keynote address by Arymanya-Mugisha Henry PhD January 28th 2005

⁸ Interview Fredrick Kiwazi April 8th 2011

⁹ Interview Fredrick Kiwazi April 14th 2011

this. 10 Lastly, wetlands have also become dumping spaces for people who lack access to waste removal. 1.1.3 Location of Wetlands in Kampala

For the purposes of this research the focus falls on the three largest wetlands in Kampala; Kinawataka, Nakivubo and Lubigi. Kinawataka and Nakivubo are both part of a tributary system in which their waters flow south towards Lake Victoria. Lubigi is located on the north west side and is part of a system in which waters flow north towards Lake Kyoga.

Kinawataka is also referred to as Kinawataka-Kawoya it is 1.5 km2 and is located in Nakawa sub-county, 6.5 km east of city center. Nakivubo is is also located in the Nakawa sub-county and is 5.5 km south east of Kampala City Center, it lies between Bugolobi, Mpanga and Muyenga Hills, it can reached from the old port bell and Muyenga roads. Both these wetlands feed into Lake Victoria. It is one of the largest wetlands in Kampala and is curretnly 5.29 km2.

Lubigi wetland feeds into Lake Kyoga and is located on the North West side of Kampala. It is a tributary to Mayanja-Kato system in the north and receives water from Nsoba wetland system. Lubigi is found in Rubaga and Kawempe sub counties and is 7.5 km west of Kampala City Center. Masaka, Mitayana, Hoima, and Sentema roads all cross through this wetland. Lubigi is currently 2.85 km². 11 1.1.4 Current Status of Kampala's Wetlands

Wetlands in Kampala have decreased by 50 percent, in the ten years between 1995 and 2005¹², this degradation comes in several forms, cultivation, infilling, construction and pollution. Cultivation, results in wetlands being drained and new agricultural plants being introduced, this can lead to soil erosion and flooding. Infilling is when wetlands are filled with rocks, mud and other materials external

¹⁰ Interview

The Wetland Status Report for Kampala District published by the Department of Environment Protection 1996 page 27

¹² The Future of Wetlands keynote address by Arymanya-Mugisha Henry PhD January 28th 2005

to the wetland. This destroys the wetland and can also lead to flooding, and loss of biodiversity¹³.

Construction takes place on the wetland in residential and commercial form. Both types of construction permanently destroy the wetland as well as leads to major flooding of the area. ¹⁴ Finally, pollution comes in several forms. Factories produce waste that runs into the water and well as the air damaging the wetlands ecosystem. Solid wastes from both factories and individuals also clog the water ways in or around the wetland. ¹⁵

Currently, both Nakivubo and Kinawataka are heavily encroached upon for industrial development, settlement and cultivation. Kinawataka also is receiving pollution from an upstream industrial development ¹⁶. It has been surrounded by industrial buildings and businesses and as a result the wetland area has shrunk a great deal. This leaves little space for the waters that normally gather they to be distributed and absorbed, as a result severe flooding of the wetland and surrounding area can take place during the rainy season. This is particularly problematic because of global warming weather patterns have become more severe and during long periods of drought many people think the wetland is gone for good and begin cultivating the land. When the rains do return all this work is lost to the floods ¹⁷. Kinawataka also carries silt out of the wetland to other water systems, due to construction this water is beginning to be blocked creating a loss of nutrients and increase in pollution in other waterways. Nakivubo is heavily developed in the old industrial area, this development continues because the wetlands are still wide open and the land is relatively cheap. However, much of the development that took place on the wetland, including the construction of a Golf Course, took place before there was a wetland policy to protect this area. ¹⁸ As a result, there is nothing to be done about

¹³ Interview Kiwazi

¹⁴ The Future of Wetlands keynote address by Arymanya-Mugisha Henry PhD January 28th 2005

¹⁵ Interview Kamukama Dixon

The Wetland Status Report for Kampala District published by the Department of Environment Protection 1996 page 28

¹⁷ Interview Fredrick Kiwazi April 8th

¹⁸ Interview Kiwazi April 8th

the development that already exists.

To manage the flooding problems, that result from this development, channels have been built to drain the water away from the wetland but allow it to still travel on its natural path. Unfortunately, the water does not have a chance to be absorbed into the soil or plants because it moves to rapidly and so when it reaches Lake Victoria it is not cleaned, and thus adds pollution to the Lake.¹⁹

Unlike, Nakivubo and Kinawataka, Lubigi has actually been returned to a wetland in the past few years, although it does not cover as much area as it once did. It was being cultivated for sugar cane but the government has removed these farmers so that the land can be returned to wetland. It will now become part of a water cleaning project. A small portion of the wetland will have a factory where water can be gathered and stored, that has already been cleaned by the wetland. This use will mitigate the expense of cleaning water for the city, while simultaneously preventing flooding, and controlling greenhouse gases.²⁰

However, brick making on Lubigi remains a major economic activity as well as papyrus gathered for mats and roofs. As long as these practices remain regulated and implemented at a relatively low rate the wetland will remain undamaged. The Belgium government has partnered with Kampala City Council to relocated families who have built their homes on this wetland, with the intention of reducing these practices and keeping people safe from floods.²¹

1.1.5 Challenges to Conservation

There are several challenges to conservation of wetlands in Kampala. The first is the location of the city itself. Kampala is a hilly city, in a tropical climate and only a few kilometers form the shores of Lake Victoria. This makes every valley a prime place for water to gather and wetlands to grow. This environment makes it difficult to conserve wetlands because some must be developed for the city to

^{19 &}quot;The Future of Wetlands" a keynote address by Arymanya-Mugisha Henry PhD, Kampala, Uganda, 2005

²⁰ Interview Kiwazi April 14th

²¹ Interview Kamukama Dixon

exist. Unfortunately, if one wetland is developed who is to say that another cant be. This problem is confounded by Kampala's rapidly growing population, government discord, lack of political will and lack of financial resources.

1.2. Statement of Objectives

There are three main objectives of this research;

- 1. to learn about Uganda's wetland policy, how it developed, and how it has and it is currently been implemented, specifically in Kampala.
- 2. to learn about how Kampala has been affected by wetland policies, both environmentally, as well as financially in terms of revenue brought in by businesses built on wetlands.
- 3. What conservation plans are underway to save the remaining wetlands and what challenges are faced by those in charge of wetland conservation.

1.3 Justification

As Gilbert Rist explains in his book <u>The History of Development</u>, the very nature of development demands that major changes of infrastructure take place for a developing country to meet the living standards and material wealth of Western countries²². Businesses need safe, sturdy and clean environments from which to function and reach customers. The population must be able to move easily throughout the area to conduct businesses and keep the economy growing. However, the creation of roads and buildings should not take place without the consideration of the natural environment. The ecosystem and land must remain healthy and intact in order for future generations to be able to truly reap the benefits of the current development projects.

Uganda, in particular has a lot to gain from keeping wetland ecosystems intact. The wetlands provide safe water sources, support biodiversity and keep soil clean for agricultural uses. However,

²² The History of Development Gilbert Rist page 8

most development projects appear to focus on the short term gains of building new businesses on wetland areas. In recent years, wetlands that were meant to remain protected in Kampala have been drained and filled in to become homes to new businesses.

Long term conservation and short term development are not only both important issues in Kampala but also inextricably intertwined. As a result, an in depth study of the use and miss use of wetlands in Kampala is important for several reasons. The research serves as an assessment for the short term impact new businesses built on wetlands have had in Kampala. The research also assesses the effectiveness of policies regarding wetlands. Both these assessments will be important in moving forward as Kampala continues to develop and looks for more land on which to develop.

2.0 Methodology

The methodology for this research was composed of several different approaches. The first was that the research was all conducted as a case study, which works well for the particular issues being studied. The location and geography of Kampala make it uniquely suited for wetlands, while its booming population and growth creates a unique issue for conservation. This research also needed to be a case study because no other area in Uganda has both wetlands as well as the strain of intense population and industrial growth. Fortunately, the case study methodology does allow for the inclusion of more details, in depth research and the development of a relationship with those involved.

The research to support the case study relied heavily on qualitative methods. These sources included primary source documents, such as the wetlands policy and secondary source documents such as news paper articles. Interviews were also conducted with key members of the NEMA, the Wetland Protection Department and the Kampala City Council. There were 6 interviews in total, the research would not have been complete with out them as most of the information garnered from the is not in writing or available to the public. The interviews also provided personal insights into living in Kampala and watching wetland management take place on a daily basis.

2.1 Ethics Statement

In order to conduct this research in a ethical and moral manner all participants of interviews were informed of the intentions of the research and given a Informed Consent Form to sign. The researcher only conducted research and participated with programs that are beneficial to those whom she worked with as well as the society as a whole. The researcher worked to treat all those she came in contact with, with the utmost respect and heartfelt care. The researcher will not attempt to gain monetary value or other resources from the people or groups encountered or research conducted.

2.2 Challenges

Within the study there were multiple challenges that were met during the research, as well as several biases and errors that occurred. The most prominent of these was the limited time frame in which the study was conducted. The time taken to find contacts, organize interviews and conduct them almost filled the entire practicum period. As a result of this there was not time to return for follow up interviews in which more in depth questions could be answered or to have other issues clarified.

Another issue arose when answers where often short and interviewees appeared to be reticent about revealing certain information. This may be the result of sensitivity due to the current political situation and a fear of criticizing the government. Those interviewed may have felt they should give answers the interviewer (white, American, female) wanted to hear and not the exact facts. The interviewees may have also not been aware of the interviewers background knowledge of the topic and thus were unsure as to what details to include.

Measurement errors also undoubtedly occurred, exact numbers or even general information about the revenue and jobs created from development projects built on wetlands were often hard to come by or non-existent. It was not possible to obtain records that showed a period of more than the past year and so no conclusions could be made about how much money the city has gained from development on wetlands with the exception o the past year. Data regarding the effects of flooding,

rates of waterborne diseases and other problems associated with the loss of wetlands were also unavailable so again no certain conclusions could be made.

Certain organizations were simply unavailable. Despite repeated telephone calls, email's and visits no contact was made and the information could not retrieved. Unfortunately, this may have been remedied with more time or if other connections or networks could be made from which to work from.

A final challenge came when time and connections did allow for an opportunity to meet with stakeholders who live in and around the wetlands. This left a large gap in the research because there was no view of what it means to live in a wetland and deal with flooding. The lack of connection to stake holders also meant there was no way to get an opinion on the effectiveness of wise use conservation methods for wetlands as well as how development projects had changed their lives and relationship to the land.

3.0 Research Findings and Discussion

3.1 Why a Wetland Policy is Needed

As of 1995, Uganda had no wetland policy and one was desperately needed. Unlike, other African countries Uganda does not have a history of traditional wise use knowledge of wetlands. As a result much of the population viewed wetlands as wastelands and little was done to protect them.²³ A policy was needed to create awareness surrounding wetlands and their value²⁴.

Wetlands save the government money by cleaning water and preventing floods. This is needed for short term development. Flood mitigation remains the most persuasive factor in wetland protection, in Kampala. Citizens have experienced the flooding of their crops and homes first hand and clearly understand the devastation that loss of wetlands can create. Citizen also need access to clean and safe drinking water. If protected and used wisely, wetlands can provide clean water to those who do not

[&]quot;The Future of Wetlands" a keynote address by Arymanya-Mugisha Henry PhD, Kampala, Uganda, 2005 24 Development of Wetland Policy from WetNews issue 11Jan-March 1995 page 2

have piping or irrigation. By maintaining wetlands Kampala City could potentially save money in water filtration costs.²⁵

As a result, a policy needed to be developed that would address wetlands specifically as previous policies only addressed water or land. Previous policies were also inflexible and obsolete. A policy is also needed to address the fact that wetlands are a multi-sectoral resource that overlap with other resources and agencies. Furthermore, the policy needed to recognize the wetland as an ecosystem that is distinctly different from other ecosystems and yet closely related to them and the lives of the people who love around them. Finally, a policy was needed to protect the wetlands for both future generations as well as the current population.²⁶

Wetlands also provide important services for future generations. Kampala is a growing city and rapidly modernizing, as a result pollution control is a needed consideration. Wetlands are carbon sinks for air pollution, due to the level of thick vegetation and biodiversity wetlands naturally store Carbon Dioxide from the air.²⁷ This has the potential to remove pollution from Kampala's air, mitigating the affects of pollution on the population and the rest of the city's land.

3.2 How the Policy Developed

The wetland policy was developed over a three year period, it was created from inter-ministerial committee set up specifically for the policy development. The committee worked with communities through District Development Committees or DDC's which allowed for a public forum on the needs of the people who live with and around wetlands.²⁸

The major concepts and goals undermining the policy were taken from the Ramsar Convention on wetlands and adapted to meet Uganda's needs. This convention demands that all contracting parties

^{25 &}quot;The Future of Wetlands" a keynote address by Arymanya-Mugisha Henry PhD, Kampala, Uganda, 2005

²⁶ Wetland Policy adopted from WetNews issue 11Jan-March 1995 page 3

²⁷ Wetland Ecosystem Services 10-3-10 Ramsar Website http://www.ramsar.org/cda/en/ramsar-pubs-info-ecosystem-services/main/ramsar/1-30-103%5E24258 4000 0 accessed April 13th, 2011

²⁸ Wetland Policy Adopted page 1 From WetNews issue 11 Jan-March 1995

develop an adequate wetland policy that aims to conserve not only animals but the natural landscape of wetlands and the ecological processes that take place within them.²⁹

3.3 The Uganda Wetland Policy

The wetland policy in Uganda was published in 1995 it contains 8 strategies for the conservation and protection of wetlands. These strategies are listed as follows:

- 1. to put a stop to drainage of wetlands
- 2. promote environmentally sound management
- 3. sustainable use of wetlands
- 4. wetlands used as a water source must be protected
- 5. previously drained wetlands must be recovered
- 6. The policy also promotes conservation of wetlands via the establishment of "Protected Wetland Areas"
- 7. as well as other wetlands that will be set aside as research areas
- 8. the policy establishes the requirement that any proposed alterations to wetlands must first pass an Environmental Impact Assessment or EIA.

Furthermore, the policy states that all activities, economic or otherwise must be monitored. The policy also aims to equally distribute all wetland resources to the people of Uganda, and maintain optimum diversity of uses for the users of the wetland.³⁰

However, a policy is only a set of guiding principles in which institutions are meant to rely on when making decisions. As a result the implementation of the policy varies between institutions and individuals.

3.4 Current Implementation of the Policy in Kampala

Due to the large scope and size of the National Wetland Policy several organizations take part in its implementation. Certain activities overlap among organizations while others are unique to certain institutions. The first four goals; to put a stop to wetland drainage, to promote environmentally sound

²⁹ National Wetland Policy Handbook page 7

³⁰ Wetlands and the Law page 15 Legislation governing the ownership use and access to Wetlands and their Resources

management, to promote sustainable use of wetlands and to protect wetlands used as a water source are all implemented in part through public awareness programs. Both NEMA and the Wetland Management Department put together public awareness campaigns and visit communities built on or near Kampala's wetlands to teach stakeholders how best to manage the wetlands. However, education on the value of wetlands in not sufficient in changing views and lifestyles. Wetlands have continued to be illegally cultivated and polluted with domestic and industrial waste. As a result, NEMA has put together a police force of 30 to monitor all activities on wetlands in Kampala City.

The fifth goal of the policy has only taken place in one wetland in Kampala. Three years ago crops on Lubigi wetland were removed all, cultivation stopped and the wetland was allowed to refill.

The protection of the wetland continues but there are no current plans to reclaim any other wetlands in Kampala.

The sixth and seventh goals are being carried out by the Wetland Protection Department. Thus far 6 Ramsar sites have been designated throughout Uganda. These wetlands have been recognized for their ecological importance and have been set aside for their protection, as stated in the Ramsar Convention. In Kampala, Nakivubo channel has been designated a wetland reserve, it is the only one in Uganda and is meant to be left completely unused.

The 8th goal has been perhaps the most successfully implemented in Kampala. Under this provision nothing has been built on a wetland with out an Environmental Impact Assessment being first conducted. NEMA conducts the actual assessment but the Kampala City Council makes the request for the assessment before any development project is passed.^{30.1} Unfortunately, development projects often involve corruption and so EIA's are either overlooked or someone is paid to ignore the results or alter them.

3.5 Challenges to Implementation (go into more detail)

30.1 Namazzi, Gloria Interview 4-21-11

There are five major challenges to implementation of the policy:

- Lack of financial resources to both employ government officials in offices and people to monitor the wetlands
- 2. the growing population simply needs more room to live and grow crops
- 3. lack of political will as well as political interference
- 4. lack of knowledge about wetland and their value
- 5. the wetland policy remains too broad and does not have specific laws to protect it

There is also one pervasive underlying challenge to the policy that is not readily apparent. That is the fact that, before the 1986 government actually had a policy of distributing land titles on wetlands for homes and business to spur development. This makes it very difficult for the current government to take back wetlands which have already long been under private ownership. 30.2

3.6 Environmental Effects of the Wetland Policy in Kampala

There are several prominent effects the wetland policy has had on the environment in Kampala. Flooding is the most apparent and perhaps most dangerous problem that has resulted form wetland encroachment. Kampala now floods every time is rains as a result of wetlands being encroached upon so that waters that once ran down the hills of Kampala and into the wetlands now have no where to go. As a result streets, homes and businesses are flooded with water leading to serious property damage and disrupting work and business. Flooding also causes water to mix with feces from pit latrines and bacteria from other places causing an increase in Cholera, Dysentery, Diarrhea and Typhoid Fever.

Once the water has collected it often sits stagnant and thus becomes a breeding ground for mosquitoes and increased Malaria rates. The several property damage are several property damage.

Other environmental problems include the loss of green space which has been found to absorb

^{30.2} Barugahare, Vincent Interview 4-28-11

³¹ Barugahare, Vincent Interview 28-4-11

³² Misandi, Geraldine Interview 21-4-11

air pollution and greenhouse gases. Loss of biodiversity of plants, animal and fish species, which could potentially hurt the food chain and lead to problems of famine and disease. And perhaps most importantly, studies show that Lake Victoria, Africa's largest lake is dying. It's water tables are dropping, it is becoming increasingly polluted and its fish population is decreasing this is improbably due to a number of combined factors. However, the loss of wetlands has sent water from the hills of Kampala directly into the lake with no time to sort pollution or allow some to be absorb into the land. This process has also increased the silt in the lake.³³

3.7 Financial Effects of the Policy

There are two ways to examine the financial effects of the National Wetland Policy on Kampala. The first is not measurable due to lack of available data. However, many Ugandans have noticed how much destruction of personal property takes place due to floods. Cars and houses are often destroyed not to mention roads and city buildings. All of this destruction comes at a cost to the city government who must repair the roads. The citizens also lose a great deal not only in personal property but in time not spent working because they cannot travel through the floods or because they must attend to the destruction of the floods.³⁴

Another, slightly more measurable perspective would be to examine what the city has gained from disregarding the wetland policy and building on wetlands. A few businesses that have been built on wetlands include, The Golf Course Hotel, Nakumatt Oasis, Garden City all in Kololo Kampala. The golf Course hotel makes 10446000 billion USH and Nakumatt brings in 1963521000 USH. Kampala City Council takes 6 percent of these incomes in taxes or about 6266760 and 117811260 respectively.³⁵

Similarly, the Nakumatt Oasis employs roughly 120 people. Due to the job creation from this project these people are able to return their incomes to the economy and help further the development

³³ Lubega, George Interview 26-4-11

³⁴ Kamukama, Dixon Interview 20-4-11

³⁵ Kampala City Council Office of Revenue, Kamukama, Dixon Interview 20-4-11

of Kampala City. The Oasis as well as the Hotel and Garden City are all rather high end and attractive to tourists and upper class members of society. This means these areas remain well frequented year round and are not as severely affected by dips in the local economy.

3.8 Challenges to Policy Implementation

As stated briefly before there are several challenges to policy implementation, lack of political will and resources. The sectoral approach of the government creates chaos and coordination of projects. Various institutions and groups often are unaware of what other groups are doing or are at least unable to coordinate. This weakens the overall ability of all these institutions to implement their efforts. 3.9 *Current Conservation Plans*

The Wetland Management Department is in the process of demarcating boundaries for the wetlands in Kampala. The Department is also working in conjunction with stakeholders who live around Kyetinda, Lubigi, and Kinawataka to develop wetland management plans.³⁶

NEMA has put together a task force to patrol protected wetlands and monitor all activities taking place within said wetlands.³⁷

Conclusion

Wetland protection is a priority the government has lost sight of in the past few years, leading to the continued degradation of a valuable natural resource. The continued encroachment and degradation of Kampala's wetlands has taken place despite protective policies for several reasons. The lack of resources and political will have left them vulnerable to short term development interests. The national wetland policy remains too large and inflexible to apply at the local government level. Finally, in Kampala the growing population has put on added strain on the wetlands as the city continues to grow.

^{35.1} Sengendo, Hannington and Paul K. Musali Environmental Management in Uganda: A Critique in Environmental Planing, Policies and Politics in Eastern and Southern Africa St.

³⁶ Barugahare, Vincent Interview 28-4-11

³⁷ Lubega, George Interview 26-4-11

The development of wetlands has allowed for some short term economic growth but has also resulted in some environmental problems in Kampala. New developments bring in new jobs and in some cases make the city more accessible or attractive. However, many projects destroy valuable ecosystems, which process air pollutants and disrupt the natural flow of water leading to flooding.

Unfortunately, the short term destruction of wetlands has continued due in part to the policy short falls mentioned above. Corruption within government also plays a role as well as short sighted economic goals.

Recommendations

Government Organizations

Environmental Government organizations such as NEMA and the Wetland Management

Department need to make several changes in how policy is executed. First they need to work together
to implement policy in unison and make sure resources are not being overspent on one area but spread
evenly. Second, they need to refine policy and make sure it can be applied to the community level
instead of just the national level.

Communities and Stakeholders of Wetlands in Kampala

Stakeholders and those who live on or near wetlands need to become aware of how to properly and sustainably use a wetland. They need to be briefed on wise use methods of wetland protection so that they can live safely near wetlands and also feel empowered by their conservation.

Research for Future Student s

In the future the use and miss use of wetlands in Kampala would make a wonderful topic for other students. Time permitting the focus could go in many directions including these below:

- Research how much destruction floods actually cause in Kampala.
- Follow the rates of disease out breaks that take place in Kampala during the rainy season to see if water borne diseases and malaria increase when flooding increases

- measure water and air pollution
- estimate the cost of wetland water pollution and its related destruction of habitat of fisheries in Lake Victoria and the potential that has to hurt the Kampala economy
- wetland water pollutions affects of water pollution in Lake Victoria in general.
- The role of the wise use of wetlands concept for conservation in a developing country

 Students would also have a great deal to gain from participatory action research methods by

 working with stakeholders of the wetlands. Time did not permit for PAR methods during this research

 period but could potentially be used in the future to expand on the research and provide new insights.

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Appendices

Appendix A

List of Interviews

Date	Name	Position	Location
4-8-11, 4-14-11, 4-21-11	Fredrick Kiwazi	Wetland Coordinator	Seeta, Personal Office
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04/20/11	Dixon Kamumaka	Speaker for the City Council of Kampala	Kampala, City Council Office
04/26/11	George Lubega	Wetlands Policy Director for NEMA	Kampala, NEMA Office
5 11 23 1 1			
04/21/11	Geraldine Misandi	Counselor to Health and the Environment	Kampala, City Council Office
04/21/11	Gloria Namazzi	Natural Resource Manager for Kampala Central	Kampala, City Council Office
04/28/11	Vincent Barugahare	Senior Wetland Planning and Management Officer	Luzero, Wetland Department Office

Appendix B

Map of Kampala's Wetlands