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Author: Rwakakamba, Twesigye Morrison

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How Effective are Uganda's Environmental Policies?

A Case Study of Water Resources in 4 Districts, With Recommendations on How to Do Better

***Twesigye Morrison Rwakakamba*[1,2]**
rwakakamba@yahoo.co.uk
[1] *Resident Consultant and Manager for Policy Research and Advocacy, Uganda National Farmers Federation, PO Box 6213, Plot 27 Nakasero Road, Kampala, Uganda*
[2] *Research Associate Advocates Coalition for Development and Environment, PO Box 29836, Plot 96 Kanjokya Street, Kamwokya, Kampala, Uganda*

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The livelihoods of most Ugandans intimately depend on the environment, both as a source of subsistence and as a basis for production. Environmental degradation in the country—which includes wetland encroachment and contamination of water resources—is critical: based on estimates, degradation costs represent an environmental debt of about US$ 1–4 billion today. Although the country's water resources are rich, severe water scarcity is predicted for the near future, particularly in more populated areas and in the more fragile arid and semiarid pastoral areas. The Ugandan government has formulated a number of policies to regulate land use and impacts on the environment. However, the alarming rate at which natural resources are being depleted shows that these laws and policies are not enforced effectively. Using both qualitative and quantitative research methods, the study presented here focused on water resources, assessing their status in 4 mountainous districts of Uganda and evaluating the effectiveness of government policies with regard to restoration and conservation of water catchments. The study revealed a glaring gap between the existence of laws and policies on the one hand, and the reality of implementation on the ground on the other—there is rapid depletion of water resources, and water scarcity has already led to conflicts. The paper calls for effective implementation of existing policies and laws without fear or favor and for increased budgetary allocations from the current 25.6 billion shillings (2006–2007) to 34.45 billion or more, to accommodate funding for the execution of policies and laws. It also calls for meticulous review of the existing environmental policy regime with a view to tailoring, customizing, and localizing it for practical purposes.

Keywords: *Water resources; environmental policy implementation; environmental degradation; encroachment; water conflicts; Uganda.*

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Introduction

Land and natural resource degradation in Uganda account for over 80% of the annual costs of environmental degradation. By 1991, conservative estimates of the annual cost of environmental degradation were put at about US$ 157–480 million (Slade and Weitz 1991). Capitalized at the government's social opportunity cost of capital of 12% per annum, these environmental degradation costs represent an environmental debt of about US$ 1–4 billion today. Uganda can hardly afford to add this additional but hidden debt to its official indebtedness to external and domestic creditors.

The severity of this environmental problem is compounded by the fact that the livelihoods of many Ugandans intimately depend on the environment, both as a source of subsistence and as a basis for production. In 1999, the agricultural and environmental sectors together contributed over 90% of Uganda's exports and supplied more than 90% of Uganda's energy requirements in terms of firewood and charcoal (Moyini et al 2002). The environment and natural resource sectors contributed 55% of total gross domestic product (GDP)—a very substantial contribution to Uganda's economy (MoFPED 2000). This, therefore, means that encroachment on and depletion of resources such as wetlands, forests, pastures, fields, rivers, lakes, and swamps severely endanger human lives because of the resulting loss of water, food, and energy; but it also ultimately leads to reduced foreign exchange revenue and balancing of deficits.

Once described as the "Pearl of Africa" by Sir Winston Churchill, the environment in Uganda's pre-independence period was arguably the best in the whole of Africa. The country enjoyed an ideal weather pattern suitable for agricultural production that boosted the country's economy in the period immediately after independence. Agriculture thus was—and still is—the

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country's economic backbone. Land cover in Uganda today consists of 35% farmland, 21% grasslands, 20% forest/woodlands, 15% water bodies, 6% bushland, and 3% commercial farms/urban areas. Settlement patterns vary, and land ranges from densely populated to uninhabited areas; land degradation is worse in more populated areas and in the more fragile arid and semiarid pastoral areas. In such areas, soil erosion is increasing, soil fertility is decreasing, and agrochemical pollution and desertification are on the rise.

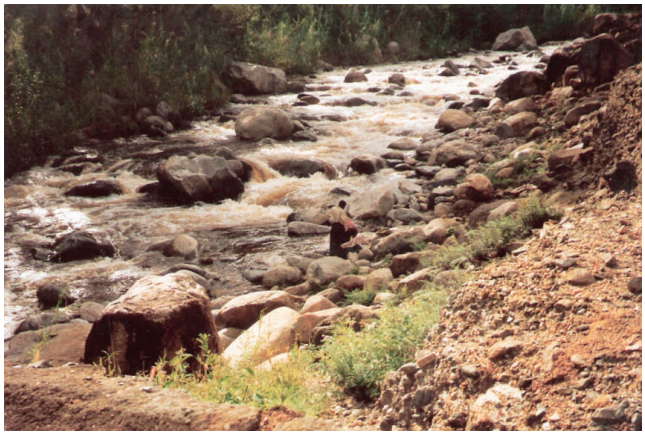
Uganda, however, is rich in water resources: annual rainfall of 600–2500 mm is the principal contributor to the surface water bodies that cover considerable areas in the country. An estimated 200,000 springs are found in the country (Syngellakis and Arudo 2006). Water withdrawal in aquifers was estimated to be below 1% of total renewable water resources.

However, estimates foresee water stress by the year 2025 (MWE–WMD 2004). One reason for this is the conversion of wetlands. These ecosystems occupy the ecotones between open water bodies and terrestrial ecosystems and perform important regulatory functions such as flood control and groundwater recharge. They are, however, under severe threat: conversion or modification takes place at very high rates for development purposes. This is considered a rightful and development-oriented activity even by policy-makers at all levels of government. For example, the hilly Jinja district has been noted as having one of the highest percentages of modified wetlands. The district has 10,325 ha of wetlands (14% of land area in the district), but almost 80% of this has been modified. As for the mountainous Kabale district, this figure is almost 74% (NEMA 2002). Between 1990 and 1992, 7.3% of the country's wetlands were converted into farmland (MWE–WMD 2004). In addition to that, population growth and increasing per capita usage have already made the demand for water a problem (Figure 1). The livestock population (4.5 million, 2002 estimate) has a freshwater demand of 81 million m^3 per year, and this demand level is projected to increase to 233 million m^3 by 2010 as livestock numbers increase (UNEP 2002).

To date, the Ugandan government has developed a number of policy regimes to regulate and influence land use and environmental impacts, for example, the Poverty Eradication Action Plan (PEAP, 2000), the Sector Wide Approach to Planning for Water and Sanitation Sector (2002), the National Wetlands Policies (1995), the Environmental Impact Assessment Resolutions (1998), the National Environment Management Policy (MLWE 1994), the National Environment Statute (MLWE 1995), the Constitution of the Republic of Uganda (GoU 1995), and the current draft of the National Land Policy and National Land Use Policy, among others.

However, as reflected by the alarming rate at which natural resources are being depleted, it is evident that these laws and policies are not enforced effectively. The aim of the study presented in this paper was to evaluate the effectiveness of government policies on restoration and conservation of watersheds. The following research questions were addressed in particular: (1) What is the state of water resources in 4 mountainous districts of Uganda? (2) What are the causes of water depletion, and what is the conflict potential of water scarcity? (3) How effective are existing policies in protecting and restoring water catchments? Based on the findings, policy recommendations are provided for the new land policy currently being formulated in Uganda.

FIGURE 1 Nearing extinction of water resources: the River Nyamwamba drying up in Kasese district, western Uganda. The bottom of the river is extremely exposed, and it is evident the river will have disappeared within a few years if nothing is done to protect forests in the Rwenzori mountains and adjacent forests and wetlands. According to eye witnesses (respondents), this river used to be full of water and a sanctuary for wildlife, especially hippopotamuses; it was not easy to cross. (Photo by Dan Muhumuza)



Methods

The study was carried out in 2006 in districts of Uganda: Mbarara, Ntungamo, Katakwi, and Kasese. They were chosen as a representative sample of districts found in the cattle corridor, where water crisis problems are rampant. The main areas of interest were water catchments (forests, wetlands, hills), water sources (rivers, lakes, streams), and water supply facilities (water gravity flow systems [GFS], boreholes, water pumping systems, protected water springs, shallow wells, and dams). In total, 16 rivers, 26 wetlands, 7 forests, 4 lakes, and 2 highlands were visited in the 4 districts.

The study focused on various interest groups and collected stakeholders' and communities' views and perceptions regarding the performance of land management systems and environmental policies. The study used both qualitative and quantitative approaches, relying on different research techniques such as purposive sampling, discussions with key stakeholders, questionnaires, direct observation, review of documents,

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and photographic documentation. During all fieldwork and data analysis stages, office-based meetings with the research team were held to validate the quality of the data. Data from interviews and questionnaires were disaggregated according to sex, educational level, land ownership, and major economic activities related to water catchment systems. In addition, information about water catchment systems, forests, and encroachment on catchment areas was analyzed per district. Among the main issues covered in the questionnaires were land use, conversion of land cover, legal and political matters, corruption, and lack of awareness.

In each district, 50% of the water catchments and no less than 10% of each category of existing water facilities were randomly selected. These samples were deemed representative for an on-the-spot comprehensive picture of water facilities. For each of the sites visited, 4 respondents were interviewed; 2 respondents were community people and the other 2 were key respondents. The key informants in the community included local council leaders, religious leaders, opinion leaders, teachers, and extension workers at subcounty level (community gatekeepers). At the district level, the District Water Officer, the District Environmental Officer, the District Fisheries Officer, the District Agricultural Officer, and the District Forestry Officer were purposively selected as key respondents.

Results and discussion

Status of water catchments

In the 4 districts visited, 11% of the wetlands, 5% of the forests, and 4% of the rivers and streams have been completely depleted. Moreover, 89% of the wetlands and 94% of the rivers and streams have been encroached upon, while only 10% of the lakes and 5% of the forests have remained intact (Rwakakamba 2008).

Reasons for encroachment ranged from a need for farmland for crop cultivation (Figure 2) to overgrazing, poor farming methods (eg bush-burning), and economic activities such as brick-making along wetlands. Weaknesses in implementing existing laws and policies were detected, reflecting political interference and corruption. A general lack of awareness regarding the importance of water catchments became evident. Of all these factors, weaknesses in law enforcement, corruption, political interference, and the impunity of those who acted against environmental and other laws were identified as most severe in 3 of the visited districts. Encroachment was particularly strong in Ntungamo and Mbarara, where people with good political connections have encroached on wetlands and water catchment systems with no reprimand from law enforcers.

Encroachment was found to be the main cause of decreasing water levels and dry-out in dry seasons. The

FIGURE 2 Encroachment: banana, yams, and eucalyptus trees planted along the Mpondwe River in Kasese district. (Photo by Dan Muhumuza)



Nyamwamba River in Kasese, the Mugwanjura Gravity Flow Scheme in Ntungamo, and the Rwizi River in Mbarara were found to be experiencing drastic water reduction. This water crisis is further aggravated by environmental degradation in the form of high soil erosion rates, and the reported decrease of the water table leading to nonfunctionality of public water works, as well as a change in local climatic conditions. For example, Mzee Karoli Kanyinondi (72) of Mbarara explained during an interview that the dry season—which used to occur in July–October in Ankole—can no longer be predicted and now occurs at any time. As a result, all districts visited reported seasonal shortages of food due to crop failures and unpredictable rains.

Assuming that this trend will continue, the studied districts will have no intact catchments and water sources in about 50 years. This will lead to human misery, hunger, famine, conflicts, wars, and massive poverty. The government therefore needs to focus on monitoring and implementing the already existing laws so that those who continue to encroach on the environment are subjected to legal sanctions as foreseen by national law.

Status of public water works in Uganda

Table 1 highlights that over all 4 districts, 52% of the visited shallow wells were nonfunctional. Around 40% of the boreholes and GFS taps were nonfunctional; a lesser number of protected springs (16%) and dams/rain tanks (12%) were nonfunctional. Nonfunctionality of water systems was a very serious problem: in certain situations, people and cattle were found queuing for water from the few functional boreholes in the area. The major causes of nonfunctionality included mechanical breakdown of the water facilities, poor design and workmanship, low water table as a result of depletion of natural catchments, and limited community participation in maintenance of public water works (Figure 3). The practice of *bulungi*

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TABLE 1 Percentage of nonfunctionality of water facilities visited in Ntungamo, Mbarara, Katakwi, and Kasese districts. The remaining percentage of water facilities was considered functional.

Facilities	Nonfunctional (%)
Boreholes	41.8
Shallow wells	52.0
GFS taps	40.2
Protected springs	15.5
Dams/rain tanks	11.8

bwansi, where community members engage in practical community self-help activities such as road maintenance, shallow-well construction, and others, was found to have declined in the last 2 decades as a result of a capitalist trend that has made people in communities more selfish and less community-oriented.

Water scarcity as a source of conflicts

Because of dwindling water resources, the majority of the communities visited are beginning to experience conflicts directly related to water. This was more particularly the case in Katakwi district, where the majority of people struggle to access the few available water facilities (Figure 4). Among the respondents, 21% said that there were water-related conflicts in their respective districts, while 79% were either not sure or said that conflicts did not exist; 51% mentioned that the main causes of the conflicts were misuse of natural or man-made water facilities, while 49% identified noncooperative members as the cause of conflicts.

FIGURE 3 Poor maintenance: the immediate surroundings of this protected spring are not maintained. This affects both water quality and yield. (Photo courtesy of Africare, Ntungamo, by Stephen Magume)



FIGURE 4 Competition for the few available water resources in Katakwi district (Usuk Village, Usuk subcounty). The research revealed that cattle keepers have been fighting with domestic users over the limited water resources. (Photo by Anthony Molimbwa)



Uganda's current policy responses geared at conserving the environment

As underlined by Sam Tindifa (2001) at the African Forum preceding the Rio +10 follow-up in Johannesburg, Uganda is among the few African countries that have set up a legal and policy framework for promoting environmental protection. This policy framework seeks to integrate "environmental concerns in the socioeconomic development planning of the country." It acknowledges the link between development and the environment as fundamental in achieving sustainable development (foreword to the national environmental management policy for Uganda, MoNR 1995). Tindifa pointed out that the policy framework also recognizes integrative environmental management as the most viable approach for "achieving the overall policy goal of sustainable socioeconomic development which maintains and enhances environmental quality and resource productivity, to meet the needs of present and future generations" (Tindifa 2001). Several policies and statutes have been developed, such as the National Environment Statute (MLWE 1995), the National Wetlands Policies (MoNR 1995), the Environmental Impact Assessment Resolutions (1998), the National Land Use Policy, and the National Land Policy. However, despite the existence of these policies and implementing organs, the research presented here shows that resources are continuously being encroached upon and are being depleted at an alarming rate. We therefore also reviewed the existing policy regime and examined how it is being applied in response to the problem of blatant encroachment and subsequent depletion of environmental resources.

The Constitution of the Republic of Uganda is the supreme law governing Uganda. It spells out issues of environment, good governance, social and economic

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development, rule of law, and fundamental freedoms of expression and worship, among others. According to Tindifa (2001), "in fulfilment of the objectives under the National Environmental Management Policy, Article 39 of the Constitution of Uganda provides for the right to a healthy and clean environment. The National Environmental Management Statute was also enacted, establishing the National Environmental Management Authority (NEMA) as well as providing for a broad range of issues pertaining to the functions of NEMA and measures for environmental protection. On the face of it, therefore, Uganda has moved a great distance towards providing a sound policy and legislative framework for environmental protection. The issue however, is whether these policy and legal claims are well integrated in Uganda's investment policy."

Article 245 states that Parliament shall, by law, provide for measures intended to:

(1) Protect and preserve the environment from abuse, pollution, and degradation;
(2) Manage the environment for sustainable development; and
(3) Promote environmental awareness.

The article therefore stipulates that the utilization of Uganda's natural resources shall be managed in such a way as to meet the development and environmental needs of present and future generations of Ugandans, and, in particular, the State shall take all possible measures to prevent or minimize damage and destruction to land, air, and water resources resulting from pollution or other causes.

It is however important to note that, in spite of these policy provisions, government commitment to environmental conservation is still questionable given the meager budget allocation to the environment sector in the Medium Term Expenditure Framework (MTEF) and corresponding annual budget allocations. MTEF ceilings for the 2006–2007 and 2007–2008 financial years, which originally stood at 34.45 billion and 32.38 billion shillings, were slashed to 25.6 billion shillings (2006–2007) and 24.47 billion shillings (2007–2008). Moreover, these figures are usually slashed further in the annual budget allocation process, and so finally, when money is released, the sums are often even less than allocated.

Interviews with the District Land and District Environment officers in Kasese, Ntungamo, and Mbarara revealed that scarcity of funding and low budgetary allocations from both the central government and the local government were major impediments to the effective implementation of environmental laws and policies. Obviously, the seriousness of and commitment to combating environmental degradation therefore cannot be judged by the mere existence of laws and provisions in the Constitution or law books. They depend on action relating to implementation, financing and budgeting, providing personnel and human resources to do the job, and a comprehensive and sustainable effort geared toward sensitizing the general public and convincing them to become custodians of their own environment.

The 2001 Forestry Policy empowers civil society organizations to be at the forefront in the management of the country's forest resources. However, no networks of civil societies at grassroots levels exist that fight for collaborative forest management issues. For example, in all the 4 districts visited, there are not enough civil society actors working on environmental issues compared to other similar critical issues such as health, gender, and education. The Uganda Forestry Working Group, Forestry Governance Learning Group, Mabira Forest Integrated Community Organization, and Nature Conservation and Promotion Association have only expressed interest in larger-scale policy issues rather than community issues.

Similarly, the desire for modernization and rapid economic growth emphasized in Uganda's development programs such as the Poverty Eradication Action Plan (PEAP; MoFPED 2007/2008) and the Plan for Modernisation of Agriculture (PMA; GoU 2000b) has seen degazetting of forest areas, wetlands, and other water catchment areas—previously recognized as gazetted reserves—leading to appropriation of reclaimed land for increased agricultural production with little public debate or prior consultations. Examples include Butamira and a central forest reserve on the Kalangala Islands. Sango Bay, Mabira, and other central forest reserves are at risk. This reveals a discrepancy between development aims and environmental conservation.

Article 237(2)(b) of the Constitution and section 44(1) of the Land Act Cap 227 provide that natural resources such as forest reserves are held in trust by the state government and local government to be reserved for ecological and tourist purposes for the common good of the people. This means that the government reserves the right to determine in what manner these resources are to be utilized. For example, in all the 4 districts visited, over 90% of land ownership with water catchment areas belong to the government. The fact that these resources are being openly encroached upon and depleted, with no reaction from the government, who is the rightful owner, therefore reveals critical problems in responsible ownership, commitment, and strictness in applying the law.

Section 5 of the National Forestry and Tree Planting Act 2003 in particular provides that the government or a local government shall hold in trust for the people and protect forest reserves for ecological, forestry, and tourism purposes for the common good of the citizens of Uganda. Section 38 of the National Forestry and Tree Planting Act 2003 and Section 19 combined with Schedule 3 of the National Environment Act, Cap 153 (GoU 2000a) require an environmental impact assessment to be carried out where the intended activity or project is likely to have a significant impact on a forest. However,

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this study has revealed several cases in Mbarara, Ntungamo, and Kasese where farms and other developmental projects were established without carrying out environmental impact assessments.

Policy recommendations and proposed action

Considering the high number of forests and wetlands that have been depleted in the recent past, the government of Uganda should come up with a policy specifically focusing on restoring these forests and wetlands. In addition, the following actions would help make implementation of existing policies and laws more effective:

- Sensitizing farmers: they constitute the majority of potential environmental degraders while also bearing the hope of being environmental protectors (role in conserving wetlands and restoring depleted ones). Awareness will ensure harmonious coexistence of farmers and the environment. The Uganda National Farmers' Federation should be provided resources to underpin action campaigns in the whole of Uganda. This will be the first step in saving Uganda's rivers and water catchments.
- The study in the 4 districts here has shown that there is an acute shortage of human and financial resources at the district and community levels. For example, the districts in this study had only 1 environment officer, for whom it was not possible to tend to environmental issues in the entire district. Therefore, the government should employ more environment personnel at the district, county, and subcounty levels, and these should be empowered to foster efficient implementation policies.
- The majority of respondents pointed to corruption as the most outstanding problem affecting proper environmental conservation generally, and protection of water catchment systems in particular. Therefore, there is an urgent need to curb corruption by instituting proper reporting mechanisms where the parties involved in corruption are reported and dealt with accordingly.
- Those who encroach on the environment and water catchment systems by virtue of their political influence or connections should be exposed and legal action taken against them. This will help serve as an example to the rest of the community members, especially those harboring similar ambitions.
- The government should introduce incentives for communities and local governments that excel in enacting, implementing, and monitoring bylaws, as a motivation for the other communities.
- From the study, some districts (eg Katakwi) did not have readily available environmental information: there was a lack of water and other data in the District State of Environment Report. Therefore, priority must be given to information gathering at local government level to enable proper policy implementation, which is based on realistic assessments.
- It is essential that adequate funding for the sanitation subsector is ensured through allocation of funds within the 3 relevant ministries (Health, Water and Environment, and Education and Sports). Although sanitation investment through the District Water and Sanitation Coordinational Grant (DWSCG) has increased to 5%, many districts still fail to prioritize this area. The water and sanitation sector grant schedules (guidelines) should continue to encourage expenditure on improved hygiene and sanitation.
- The study observed that 40% of available public water works were nonfunctional. This is a very high percentage. Therefore, the government should introduce incentives through local councils to reward communities that excel in the maintenance and preservation of public water works. This will help revitalize the practice of *bulungi bwansi*.
- Related to the previous point, this study also observed that the majority of people in the study districts entirely depend on agriculture for their livelihoods. This therefore means that such people are always in direct and consistent iteration with the environment for survival. Therefore the government must come up with alternative initiatives to ensure sustainable use of available natural resources.
- The government under the PMA and forthcoming land policy should increasingly promote intensive farming methods as opposed to extensive strategies. This will ensure adequate and maximum utilization of resources, especially of land and water.
- This study has observed that most laws and policies are conservationist in nature. It is therefore recommended to include restoration policies in all environmental policy regimes so that the already depleted environmental resources are restored.

Conclusion

This study shows that, despite the fact that Uganda has a number of laws and policies geared toward conserving the environment, natural resources—in particular water catchments—continue to be encroached upon. The rate at which water catchment areas are being depleted is growing at an exceedingly high speed, and, as a result, the majority of rivers, swamps, wetlands, and other catchment areas have either already been depleted or encroached upon. Despite the fact that the government owns over 80% of water catchments in the districts selected for this study, it is not acting upon encroachments. For Uganda, environmental conservation is no longer just a matter of scenic beauty but a question of economic survival for both households and nation.

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