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DEPARTMENT OF DEVELOPMENT STUDIES

RESEARCH TOPIC

**ASSESSING THE CONTRIBUTION OF THE ENVIRONMENTAL MANAGEMENT
AGENCY (EMA) TOWARDS SOUND WETLAND MANAGEMENT IN HARARE
URBAN**

BY

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**DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS
OF THE BACHELOR OF ARTS IN DEVELOPMENT STUDIES HONOURS DEGREE.**

YEAR 2017

DECLARATION FORM

I declare that the work of this dissertation was carried out in accordance with regulations of Midlands State University in partial fulfilment of Bachelor of Arts in Development Studies.

The work presents the author’s views and has never been presented at any other university.

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The undersigned certify that they have read and recommended for Midlands State University acceptance a dissertation entitled: Assessing the contribution of the Environmental Management Agency(EMA) towards sound wetland management in Harare Urban by Trish Tsveta (R137316N) in partial fulfilment of Bachelor of Arts in Development Studies Honours Degree

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DEDICATION

I dedicate this work to my loving mother and in memory of my late father Mr C Tsveta.

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I would like to thank God for his guidance throughout the period. I would also like to extend my sincere gratitude to my mum , my sister and family for having hope in me . My heartfelt gratitude goes to my supervisor Mr. Sillah for his endless support and continuously imparted mentorship he gave me throughout this project. Special thanks goes to all my lecturers who have groomed me to be where I am today. I would also like to thank all the EMA, HCC staff and residents of Harare for their assistance during the research period. Last but not least, to my friends and colleague's Dzidzai C Gunguwo , Tirzah Tevera ,Joylene Chirisa , Ellen Gota and Clever Kadandara for their support. May God grant you all your wishes meet you at your point of need always

God bless you all.

ABSTRACT

The main objective of the study was to assess the contribution of EMA towards sound wetland management in Harare Urban. Wetlands have been threatened by a number of factors in Harare . It has been established that in the presence of various laws in the management of wetlands in Zimbabwe, wetlands continue to be under threat .Environmental laws have not been adequate in efforts to manage wetlands in Harare Urban. The study targeted the EMA and residents. The researcher has analysed the successes and weaknesses of strategies by EMA aimed towards saving wetlands in Harare Urban. The research recommended that policies which have been put in place to manage wetlands should be harmonised and reviewed to make them effective to avoid wetlands from being threatened by various activities. The laws that manage wetlands in Harare Urban should be enforced by EMA in efforts to contribute to sound wetland management.

ACRONYMS

EIA	Environmental Impact Assessment
EMA	Environmental Management Agency
EMA of 2002	Environmental Management Act of 2002
HCC	Harare City Council
MoECW	Ministry of Environment Water and Climate
SI 7 of 2007	Statutory Instrument 7 of 2007

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INTRODUCTION

Wetlands are often affected by various activities in Harare Urban. The Environmental Management Agency (EMA) is a government group and its job is to guarantee sustainable use of the environment in Zimbabwe. EMA towards the sound wetlands management in Harare Urban makes use of environmental impact assessments and ecosystems protection regulations (SI) 7 of 2007 which provides for the protection of wetlands. EMA makes use of Environmental Management Act of 2002 and the Ramsar Convention on Wetlands of 1971 and has domesticated the provisions for the protection and management of wetlands. In urban areas wetlands have a role of recharging ground water and reduce flooding. A number of strategies on wetland use and management are being developed and implemented at various scales in response to wetland degradation and loss. EMA has an oversight of environmental resources such as wetlands and spearheads development of appropriate policies and laws at the local, district and national levels towards management. The Environmental Management Agency operates under the Ministry of Environmental Water and Climate (MoEWC). This research scrutinized the management of wetlands so far by the Agency for sustainable environment management.

BACKGROUND TO THE STUDY

The availability of freshwater and a habitat for various species has proved the importance of the management of wetlands within the environment. The Environmental Management Act (Cap 20: 27) goes further to define wetlands as areas of marsh, fen, peat-land or water whether natural or artificial, permanent or temporary with water that is static or flowing, fresh, brackish or salt including riparian land adjacent to the wetland. Wetlands are considered one of the most productive ecosystems in the world and provide numerous beneficial ecosystem services to humans and wildlife within their catchment areas according to Whitlow (1983). EMA focuses

on developing an understanding of the processes in the wetland ecosystems and on formulating management options for the conservation and utilization of wetlands on a sustainable basis

The most significant step towards wetland management dates back to the signing of the Convention on Wetlands in Ramsar, Iran, in 1971, by the representatives of 18 nations (Ramsar Convention Secretariat, 2006). The convention is mainly based on three pillars on wetlands conservation with one of which states that country parties should include wetland conservation strategies in their national land use planning, sustainable land use and effective wetland conservation. The Convention broadened its emphasis to include all wetlands whether in urban or rural areas. Zimbabwe has seven (7) wetlands on the list of which Harare has two (2). In 2011 Zimbabwe became signatory of the Ramsar Convention in efforts to protect wetlands. Thus environmental boards such as EMA make use of the Ramsar Convention in their policies of wetland protection and management. According to the Environmental Management Act of 2002, the Environmental Management Agency is a statutory body which was established in terms of the Environmental Management Act [Chapter 20:27] of 2002. There is need to assess the contribution of EMA towards sound wetlands management in Harare urban as the continued damage to wetlands in Harare could as well be a result of inadequate policy measures being put in place or the non-enforcement of such policies if they are there and in the absence of regulations.

The Environment Management Act (Chapter 20:27) through section 113 provides for the protection of the wetlands. In 2007, the government strengthened the Act by coming up with a Statutory Instrument (SI) in 2007, which regulate the implementation of the EMA Act. Part VI of the SI. 7 of 2007 is clear on the 'protection of wetlands, public streams and other certain lands'. Wetland management is regulated by the Environmental Management Act

(Chapter 20:27) that states that “no person shall, except in accordance with the Board and the Minister responsible for water resources, disturb any wetland by drilling or tunneling in a manner that has or is likely to have an adverse impact on any wetland or adversely affect any animal or plant therein or introduce any exotic animal or plant species into the wetland”. EMA is the key stakeholder in influencing policy direction on wetland management and conservation

The destruction of wetlands in Harare is as a result of inadequate policy measures being put in place or the non-enforcement of such policies. Urban agriculture is common in Harare urban and much of it takes place on the wetlands. There is an increase in construction taking place on the wetlands in Harare which has been a major concern. However, despite this known importance research indicates that, due to human activity, wetlands are under threat in Harare and other urban setups, in Zimbabwe and generally across the world. Wetlands destruction in urban areas occurs primarily through infrastructural development and establishment. Although the EMA has set up various pieces of legislation for wetland management there is need to assess their effectiveness towards sound wetland management in Harare Urban.

STATEMENT OF THE PROBLEM

Wetlands are among the Earth's most productive ecosystems, providing a diverse array of important ecological functions and services. Wetlands as natural resources have lost attention and their existence has been threatened greatly in Harare Urban and therefore there is need to focus on wetland management strategies. In a bid to respond the Environmental Management Agency has put in place policies such as the Statutory Instrument .7 of 2007

which is clear on the management of wetlands and therefore there is need to assess whether the policies have been successful in this regard or not.

RESEARCH AIMS AND OBJECTIVES

AIMS

To assess the effectiveness of EMA's contribution to wetland management in Harare Urban

OBJECTIVES

The research will specifically seek to:

1. To evaluate the existing policy provisions of EMA in the management of wetlands in Harare Urban.
2. To describe the threats to wetlands management in Harare Urban.
3. To develop strategies that can be applied by EMA for sound wetland management in Harare Urban

RESEARCH QUESTIONS

The following questions must be answered by this research in assessing the contribution of EMA towards sound wetlands management in Harare Urban.

1. How EMA's existing environmental policy provisions assisted in wetlands management?
2. How wetlands have been threatened in Harare Urban?

3. What strategies can be put in place by EMA to ensure sound wetland management in Harare Urban?

THEORETICAL FRAMEWORK

Systems theory is the best theory that was used to assess the contribution of EMA towards sound wetlands management in Harare Urban. Systems theory is an interdisciplinary theory about the complex systems in nature, society, and science and is a framework by which one can investigate or describe any group of products that work together to produce some result. According to Annette Voigt the emergence of systems theory in ecology particularly during the 1950's and 1960's was accompanied by the hope that ecology might turn into the exact science with prognostic potential and a set of uniform theoretical foundations.

The systems theory best explains the management of wetlands by both the residents residing near wetlands and EMA as they are a group that has to work together to produce favourable results in the protection of wetlands. Richard Thompson commented that resources are easily accessible according to the systems theory. Wetlands provide water for various species within the ecosystem and therefore there should be reserved in any environment for sustainable use. Government using environmental management ministries should put in place policies to manage resources this saw the implementation of the EMA Act of 2002. Hence this research is of use to assess the contribution of EMA which is a government group in its contribution to sound wetland management in Harare Urban.

The Ramsar Convention adopted the 'Wise Use' concept as a wetland management technique. The 'Wise Use' concept applies to all wetlands in member states including wetlands of international importance otherwise known as 'Ramsar Sites'. This concept was adopted in 1987

at the 3rd meeting of the Ramsar member states in Regina, Canada. The Wise Use of wetlands is defined as “the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development” (Ramsar Information Paper no.7, www.ramsar.org). The guidelines were meant to guide Member states to fully manage and conserve wetlands. The guidelines adopted for member states are: first, to adopt national wetland policies. Secondly, to develop programs for wetland inventory, monitoring, research, training, education and public awareness. Finally, members must take action in wetland sites to develop integrated management plans covering every aspect of the wetlands and their relationships with their catchments (Ramsar Information Paper no.7, www.ramsar.org).

The Ramsar grants access to expert advice on national and site related problems of wetland conservation and management through the Ramsar Advisory Mission. According to the Ramsar Convention Manual, the Ramsar Convention embodies commitments by member states to maintain the ecological character of wetlands and to plan for the wise use or sustainable use of all of the wetlands in their territories. The major objectives of the Ramsar Convention are to prevent the loss of wetlands and to ensure their conservation. These have proved to be of importance to the researcher in efforts to assess the contribution of EMA to sound wetlands management.

CONCEPTUAL FRAMEWORK

The Environmental Management Agency is a board that was established to ensure sustainable utilization and protection of Zimbabwe’s environment. Wetlands management generally involves activities that can be conducted in and around wetlands, both natural and man-made, to protect, restore and manipulate or provide for their functions and values. There are indicators of wetland management that are used in assessing wetlands condition. The criteria used for the

designation of Wetlands of International Importance can be used as indicators of wetlands management. According to the Ramsar Convention Secretariat (2013) there are two groups of criteria which comprise of Group A which make up sites containing representative, rare or unique wetland type and Group B which make up sites of international importance for conserving biodiversity.

The Ramsar Convention Secretariat (2013) goes on to note that

Group A

- A wetland should be considered internationally important if it contains a representative, rare or unique example of a natural or near-natural type found within the appropriate biogeographic region.

Group B

- A wetland should be considered internationally important if it supports vulnerable, endangered, or critically engaged species or threatened ecological communities.
- A wetland should be considered internationally important if it supports populations of plant and/ or animal species important for maintaining the biological diversity of a particular biogeographic region.
- A wetland should be considered internationally important if it supports plant and / or animal species at a critical stage in their life cycles or provides refuge during adverse conditions.
- A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

- A wetland should be considered internationally important if it supports a significant proportion of indigenous fish species , species or families , life history stages , species interaction and / or populations that are representative of wetlands benefits and /or values and thereby contributes to global biological diversity.
- A wetland should be considered of internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.
- A wetland should be considered of internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of wetland dependent non-avian animal species.

LITERATURE REVIEW

Wetlands provide many important services to human society, but at the same time are ecologically sensitive and adaptive systems Turner *et al* (2000). Scholars have come up with different point of views on the issue of wetlands globally. This research is set to focus on the management of wetlands by the Environmental Management Agency in Harare Urban. To start off there is need to point out the importance of wetlands, wetlands management in Zimbabwe and how they are being destructed so as to assess how they are managed.

IMPORTANCE OF WETLANDS

Mulamotti *et al* (1996) states that the value of wetlands varies from community to community. Wetlands provide ecosystem values such as flood mitigation, storm abatement as they act as buffers, aquifer recharge, improves water quality and various species within the ecosystem. Groundwater recharge is an important wetland function provided by

wetlands within the environment. For instance, the Hadejia- Nguru wetlands in northern part of Nigeria play a major role in recharging aquifers, which provide domestic water supplies to approximately one million people as well as supplying water for agriculture states. In Harare urban, wetlands act as catchment areas for rivers that supply drinking water to the Harare city council. Dugan (1990) argued that wetlands are valued for their functions, products and attributes. Wetlands are effective at improving water quality through processes of sedimentation, filtration, physical and chemical immobilization, microbial interactions and uptake by vegetation according to Kadlec and Knight (1996). Scholars are not forthcoming on the economic and social uses of wetlands thereby creating some challenges in the effective management of wetlands.

THREATS TO WETLANDS

Various policies on wetlands are formulated but however wetlands continue to be under threat from a number of human activities. According to Barbier (1993), more than half of the world's wetlands have disappeared since 1900. Wetlands have been threatened due to a number of factors that include infrastructure development, land conversion, water withdrawal, pollution, overharvesting and overexploitation, and the introduction of invasive alien species. Wetlands continue to be threatened by different human activities and little or no efforts have been made to come up with ways to manage wetlands in Harare Urban. According to Turner *et al* (2000) some of the damages are caused by

- i. The public nature of many wetlands products and services;
- ii. User externalities imposed on other stakeholders; and,

iii. Policy intervention failures that are due to a lack of consistency among government policies in different areas (economics, environment, nature protection, physical planning, etc.)

THE ENVIRONMENTAL MANAGEMENT ACT (CHAPTER 20:27)

The Environmental Management Act focuses on the sustainable management of natural resources and protection of the environment; the prevention of pollution and environmental degradation, the preparation of a National Environmental Plan and other plans for the management and protection of the environment. It provides for the establishment of an Environmental Management Agency and an Environment Fund.

This Act repealed the Natural Resources Act (Chapter 20:13), the Atmospheric Pollution Prevention Act [*Chapter 20:03*], the Hazardous Substances and Articles Act (*Chapter 15:05*) and the Noxious Weeds Act (*Chapter 19:07*). The Environment Management Act (Chapter 20:27) section 113(2) says, no person shall, except in accordance with the express written authorization of the Agency, given in consultation with the Board and the Minister responsible for water resources;

- a) Reclaim or drain any wetland;
- b) Disturb any wetland by drilling or tunneling in a manner that has or is likely to have an adverse impact on any wetland or adversely affect any animal or plant life therein;
- c) Introduce any exotic animal or plant species into wetland.

Matamanda et al (2014) have studied the perceptions and levels of awareness of various stakeholders about wetlands ecosystem services in Harare. Since the introduction of the Environmental Management Act in 2003, no research has been focused on understanding whether this new legal paradigm shift has assisted to shape institutional structure which can improve wetlands management Marambanyika and Beckedahl (2017) The research comes at a time when there is need to assess the contribution on various policies which have been implemented by EMA have been successful in sound wetland management in Harare Urban.

The land-use planning process in Zimbabwe is guided by development plans prepared by local authorities , as stipulated by the Urban Councils Act (UCA) and the Regional Town and Country Planning Act (RTCP Act) according to Chirisa et al(2016).The afore mentioned plans are silent on the specific land-uses designated for wetlands ,resulting in wetlands being converted to other uses ,that are detrimental to their conservation according to Mutembedza (2014).This clearly shows that EMA has been posing a blind eye towards wetland management in Harare Urban. This research therefore seeks to reiterate on the importance of wetlands and various policies on wetlands which have been created by EMA so as to address areas that have not been covered up by development plans for land-use processes.

A number of researchs have neglected wetlands management in Harare with most research focusing on the mapping of wetlands. Various scholars such as Mhlanga et al (2014) have presented data on wetlands characteristics, ecological state and spatial extends for institutions on wetland policies to be able to make informed decisions on the sustainable management of wetlands. The researcher on this study seeks to explore on how these policies have led to

wetland management in Harare pointing the successes made and the failures made by these policies.

Most scholars have focused on the effort that the Ramsar Convention has made in efforts to protect wetlands. Various Ramsar reports have been published in efforts to point out how the Ramsar has been successful in wetlands management issues. This can be seen with the recent declaration of some wetlands in Zimbabwe as Ramsar sites in a bid to manage wetlands. No or little efforts has been made to assess the Environmental Management Act of 2002's efforts to manage wetlands and other policies which have been created by EMA have not been researched on. Therefore, this research comes at a time when wetlands are being threatened in Harare Urban and has led to depletion of most wetlands throughout the city.

One of the dominant factors underlying wetland loss is population growth, which imposes great pressure on water resources and undeveloped land areas for settlements, higher agriculture and industrial production and infrastructure expansion according McInnes (2010). Wetlands research has often blamed a number of factors on wetlands loss. The researcher seeks to find out the efforts of the Environment Management Agency in sound wetland management in Harare Urban. There is need to explore if various policies which have been created by EMA for environmental protection and management have contributed in wetlands management in Harare Urban.

Issues on wetland management are often being left out by various scholars in a number of researches that are being done in Zimbabwe. Most researches are focusing on the threats human activities have threatened wetlands areas in Harare Urban .Chirisa (2010) the low income

earners who are mostly informal traders, often occupy space that is cheap resulting in the informal settlement. Research has turned a blind eye on the implementation of policies on wetland management by EMA in Harare Urban. Therefore, this research comes to assess how EMA as an environmental board has failed to implement its policies leading to the destruction of the wetlands in Harare.

The Millennium Ecosystem Assessment at global level found that around 2005 wetlands ecosystems were being lost at a faster rate than any other resources within the ecosystem. The drivers towards wetland loss include population growth, dumping of waste in wetlands areas, over harvesting and over exploitation of wetlands. This research is vital to respond to how these factors have threatened wetlands in Harare. There is need to identify how wetlands such as the Belvedere North and Msasa wetlands have been threatened in order to be able to assess how EMA has responded to ensure wetland management in Harare Urban.

JUSTIFICATION OF THE STUDY

This study on wetlands is very topical and is being undertaken at a time when there is heightened interest in wetlands management by the Environmental Management Agency and by the country at large. This research stems from a variety of issues which acknowledge that wetlands are being mismanaged in Harare Urban. There are a number of changes in the environment which have affected the wetland ecosystem. Attempts are being made by EMA to ensure protection of wetlands but there are various human activities that threaten the future of the wetlands which is quite common in Harare. Effective wetland management if achieved is important to the livelihoods of the residence of Harare on the availability of clean water.

According to Turner (1991) wetlands are lost inadvertently because of policy interventions which are being badly coordinated or poorly designed.

The research is very important to the livelihoods of Harare residents as through effective wetland management residents can benefit from clean water from wetlands, wetlands provide a habitat for various species within the ecosystem as well. Resuscitating wetlands assists in bringing back various species of flora and fauna that may be extinct in other parts of the country. Policy makers, inclusive of EMA and other players in the wetlands management will make use of the research findings to establish policy strategies to contribute to sound wetlands management in Harare Urban. Construction and industrial activities on wetlands are giving a rise to pollution of underground water. Harare is targeted for construction which has posed a threat to wetlands as they are being built on. More than half of Harare is situated on wetlands but urban development, urban agriculture and pollution threatens their very existence.

Wetlands management has been delegated to various institutions Hence EMA as a board which dwells on environmental issues should not be exempted from the study as it has a major contribution to wetlands management through the Environmental Management Act. A number of policies have been created under EMA so as to ensure the management of wetlands in Harare Urban as there are of importance in the ecosystem.

RESEARCH METHODOLOGY

The researcher used a qualitative approach to fully explore the contribution of EMA towards sound wetland management in Harare Urban. Qualitative research methods provide high reliability of data, openness and flexibility in data collection. Nueman (2000) states that

qualitative research is aimed at gaining a deep understanding of a specific organization or event ,rather than surface description of a large population.

Research Design

Research design guided the researcher in analyzing, collecting and observations interpretation during the course of the research. A research design provides a glue that holds the research project together states Russel (2000). A research design is very important as it turns research questions to a tested project. In this study the researcher used evaluative research design in efforts to assess the research. Evaluative research is development orientated it seeks to assess the successes and failures of different programs. The researcher assessed how various policies which have been created by EMA have contributed towards sound wetlands management in Harare using evaluative research design.

TARGET POPULATION

In this study the targeted population were EMA officials, residents residing near wetlands and land developers who are responsible for the allocation of land on wetland areas in Harare. The researcher started off the study with a targeted group, officials from EMA were interviewed, residents residing in areas surrounding wetlands being interviewed and council officials. These helped the researcher assess the contribution of EMA towards sound wetlands management in Harare Urban. From the population it helped the researcher select a suitable sampling technique that can be used throughout the research.

SAMPLING

For this qualitative research purposive sampling was used to obtain data on the contribution of EMA towards sound wetland management in Harare Urban. According to Tashakkorri and Teddlie (2003) purposive sampling techniques involve selecting certain units or cases based on a specific purpose rather than randomly. The researcher selected five officials from EMA who assisted the researcher with various policies which have been implemented by the organisation in efforts to manage wetlands in Harare Urban. Five residents residing near wetlands areas were interviewed by the researcher and two land developers who have developed on wetlands. The research focused on 10 wetlands as a sample size for this research, in Harare there are 26 wetlands and the researcher could not visit them all.

Data Collection Methods

The research is largely qualitative in nature, the researcher used interviews, observation and desktop analysis to come up with data on wetlands management by EMA in Harare Urban.

For the purpose of this study, the researcher interacted with five officials from EMA to collect data and get in-depth interviews on various policies that have been created by EMA for the management of wetlands in Harare Urban. Interviews were useful in the research as the researcher was able to interact with at least six people residing on areas surrounding Mukuvisi wetlands and the Belvedere wetland. Interviews provided a deeper meaning and understanding of wetland management policies in Harare Urban. Through the interviews that were carried in, the researcher got access to first-hand information as information from EMA in regards to wetland management.

In this research, the researcher applied both participatory and non-participatory observation techniques in order to collect quality data to assess the contribution of EMA towards sound wetland management in Harare Urban. Kadwell and Atwal (2012) notes that observation is a

highly valued and effective research method. The researcher visited the wetlands areas and observed what is taking place within the wetlands ecosystems. In the course of visits that were made to wetland area the researcher made use of in-depth informal discussions with people living in the areas surrounding wetlands.

The researcher made use of desktop research through the use of the EMA websites and other online sources that have been able to provide information on the wetlands in Harare. Journals published by EMA and the Government of Zimbabwe through its MoEWC on wetlands which clearly explain various policies for the management of wetlands ecosystem have proved to be helpful in assessing wetlands management in Harare Urban. The researcher also used the traditional sources for desktop researches, from the use of textbooks, dissertations and newspaper prints obtained from the Midlands State University library, the researcher has been able access information to help assess the contribution of EMA policies in wetland management.

ETHICAL CONSIDERATIONS

Research ethics should consider human rights, dignity, and values of the participants involved in the research according to Flodman (2004). The researcher took into account the right to confidentiality, anonymity and privacy in this study. The researcher used pseudo names to protect identities of residents and EMA officials who assisted the researcher on the threats to wetlands in Harare Urban and various policies which have been put in place to manage wetlands. The researcher pre-informed the purpose of the research to the participants and this made the participants give full and conscious consent for the researcher to partake the research. The researcher also considered the right to participate which has been enunciated by the 1948 Nuremburg Code for the protection of participants in assessing the contribution of EMA

towards sound wetland management in Harare Urban. The researcher ensured that the risk associated with the research would be far outweighed by the benefits as supported by Brink (1999).

The project is structured as follows

CHAPTER 1

Chapter one consists of threats to wetlands management in Harare Urban. The Chapter consists of a number of human activities that have posed a threat to wetlands

CHAPTER 2

Chapter two consists of the environmental policies that have been put in place by EMA in efforts to manage wetlands ecosystems in Harare ,which is the Environmental Management Act of 2002 and the Statutory Instrument 7 of 2007 .In Chapter two the researcher also came up with successes and weaknesses of strategies by EMA towards saving wetlands in Harare Urban. This involved the use of information gathered from various stakeholders and interviews, observations and desktop research

CHAPTER 3

The Chapter consists of strengthening efforts aimed at saving wetlands in Harare Urban. The researcher came up with a number of recommendations which can be used by EMA and various stakeholders involved in the creation of policies aimed at saving wetlands in Harare Urba

CHAPTER ONE

THREATS TO WETLANDS IN HARARE

INTRODUCTION

More than half of the world's wetlands have disappeared since 1990 state Barbier (1993) Globally wetlands have been threatened by a number of factors in Urban areas. Harare's major water source originates from the vlies and green spaces around the city, many of which now are being destroyed by development, pollution and informal urban agriculture. From the research it can be noted that a number of wetlands in Harare Urban have disappeared and some deteriorated. Housing and commercial construction in Zimbabwe have been the major threats to wetlands. In this chapter the researcher seeks to give an overview of how wetlands have been threatened in Harare Urban.

1.1 Urbanisation

Urbanisation is the major cause of impairment on wetlands states USEPA (1994). Over the past decade population growth in Zimbabwe has inevitably increased the demand of land. Construction on wetlands in Harare remains one of the major threats to water provision and biodiversity. According to Mhofu (2015) Harare's population has more than doubled in the past 10 years and is now estimated more than 2 million. Houses and upscale shopping malls have covered swampy areas. In Harare areas such as Kuwadzana, Glen Norah, Waterfalls, Belvedere, Borrowdale and Malbereign have housing developments on marshlands. Rural-urban migration puts pressure on Zimbabwe's urban land posing a threat to wetlands as people build on wetlands. The housing and planning department under City of Harare is blind on the wetland issues thus it continues to peg residential and commercial stands on wetlands.

The wetland is home to various plants, birds and small animals like squirrels, rabbits and even snakes that thrive in that ecosystem. Wetlands also store water and slow the rising waters of a flood. Constructors have disturbed wetlands by creating concrete jungles resulting in water that runs off giving people who have built on these spongy areas a nightmare. The construction of houses on wetlands in Harare Urban has coupled with a sharp increase in the use of borehole water. However, construction projects taking place on wetlands in and around Harare continue unabated with conservationists saying water woes will in future bedevil Harare as a result of destruction of these natural reservoirs. The major pollutants associated with urbanization are sediment nutrients, oxygen demanding nutrients, road salts, heavy metals, hydro carbons, hydrocarbons bacteria and viruses notes USEPA (1994). These pollutants enter wetlands through urban runoff.

The wetlands in Harare are under threat from infrastructural development such as churches, malls and houses. A number of wetlands in Harare Urban have been allocated for developmental purposes ignoring the importance of wetlands within the ecosystem. Long Cheng was constructed on the Marimba wetland, contrary to the recommendations of EMA and City of Harare. Other construction projects have been undertaken on other wetlands including the one behind Dandaro Village in Borrowdale and the wetland on which Warren Hills golf course is located states Matembedza (2014). These developments have posed a threat to wetlands in Harare Urban. Land developers have ignored the existence of such wetlands in Harare Urban and allocating land for infrastructural development.

The Belvedere wetland in 2013 saw the clearing of most of the tall trees to facilitate the construction of the China Mall constructed in 2014 by the Chinese company. 42% of the Belvedere North wetlands has been disturbed by residential dwellings on the wetland. Newlands

residents raised concerns over development on the Mandara Vlei on the area sandwiched by Harare Drive and Beeston Drive. This is a clear indicator of how wetlands have been threatened by urbanisation in Harare Urban. Increasing urbanisation, with the associated land use and land management changes has resulted in the alteration of the hydrology and water chemistry of wetland areas according Mhlanga et.al. (2014).

1.2 Industrialisation

Industrial effluent has been discharged into wetlands affecting the wetlands water purification mechanisms which is of benefit to various species within the ecosystems. Mukherjee (2012) noted that industrialisation has resulted in the pollution of the environment. Domestic and industrial waste are deposited into wetlands due to lack of proper disposals in Harare Urban posing a threat to wetlands. Pollution of wetlands due to industrial activities in the world continue to pose a threat to various wetlands. Industrial accidents on wetlands continue to occur threatening a number of species within wetlands ecosystems.

The Cleveland and Mukuvisi wetland has been threatened by industrial effluent from ZIMPHOS, a fertilizer manufacturing industry. The Mukuvisi river now carries a greyish-green color and a perpetual acidic choking smell because of the manner of pollution that the wetlands near Msasa has been subjected to due to industrial effluent. The Mukuvisi wetland which supplies water to the Mukuvisi woodland nature reserve appears to have shrunk in size between 1989 and 2009 states Mhlanga et .al .(2014) Industrial activities on wetlands have given a rise to pollution to underground water. Wetlands store and purify water within the ecosystem and gradually release into lakes and rivers these have affected wetlands surrounding the Msasa area which are being polluted by industries. The city of Harare has also been held responsible of dumping raw sewage in the wetlands whose tributaries lead to Lake Chivero threatening the wetlands ability to

produce safe water due to lack of self-purification mechanism which have been affected by the disposal of waste.

1.3 Urban agriculture

It is estimated that 10% of land in Harare is used for Urban agriculture. Much of this land is wetland-stream margins and seasonally swamped areas. Urban agriculture is being done to augment income and the expense of the environment. Urban agriculture that has been practised in Harare Urban has had negative impacts on wetlands such as land conversion, habitat loss and wasteful water consumption. Urban farmers have preferred to plant on wetlands where there is no need to worry about weather conditions as wetlands store abundant water in them. In urban areas people have cleared grass, plants and water on wetlands for urban agriculture affecting various species within the wetland ecosystem.

In most wetlands in Harare urban maize agriculture has proved to be very common. The increased shortages of water in Harare has seen most residents planting vegetables on wetlands. Urban agriculture on vleis has been observed to act as a hindrance to the function of wetlands, thereby threatening the cities water sources according to Masara (2013). The use of fertilisers, pesticides and inappropriate tillage methods has largely polluted wetlands in Harare. These have also threatened ecosystem services of water purification, soil protection and hydrological management that wetlands provide.

Urban agriculture is carried out all year round depending on the availability of water on the wetland according to Mutisi and Nhamo. Notifications and campaigns with regards to agricultural threat on wetlands in Harare Urban have not been done by the Environmental Management Agency. In Harare urban agriculture is rampant on wetlands regardless of the

prohibition by EMA through various policies which have been created to manage wetlands as a sensitive resource in the ecosystem. Wetlands in Mabvuku and Monavale vlie decreased 64% and 36% respectively due to agricultural activities. Urban agriculture has affected the level of wetness and ecological status of wetlands in Harare Urban

Many people have taken to dumping of waste uncollected by the council in the wetlands while others have turned them into agricultural fields owing to their ever-wet natural state according to Masara (2012). This has greatly affected wetlands surrounding Harare Urban The Belvedere North wetlands has been cleared in Harare to facilitate urban agriculture on the wetlands. The Monavale Vlei has also been subjected to illegal farming affecting its rich biodiversity. Wetland ecosystems in Harare Urban have been under threat from agriculture affecting water quality and water supply.

1.4 Lack of law enforcement

In Harare, laws that criminalise the abuse of wetland that include the Environmental Management Act of 2002 continue to be ignored by various stakeholders. The Environmental Management Agency has been held responsible for enforcing wetlands related issues. The wetland policies in Zimbabwe are fragmented. The policies of EMA that govern wetlands management in Harare have proved to be different from those of the City of Harare which is responsible for land allocation. The Harare City council has had instances where it had ignored the wetlands policies by EMA. This has seen the council facing charges on the uncontrolled commercial and residential stands development, cultivation and sand abstraction on wetlands which are fragile, sensitive ecosystems notes Wallace (2017). This clearly shows lad of policy

coordination between EMA and the council who are supposed to be working hand in hand to manage wetlands in Harare Urban.

There are poor institutional frameworks in wetlands management governance in Harare Urban. Some wetlands related issues are difficult for EMA to enforce environmental management policies as some wetlands areas in Harare Urban were politically negotiated for development. To establish a sound policy, previous by-laws and policy instruments have to be revised according to Mutisi and Nhamo (2015). Introduction of chemicals and harvesting of forest resources in the surrounding Msasa wetlands in Harare Urban has also led to the depletion of wetlands. Industries such as ZIMPHOS who have been accused of posing threats to wetlands in Harare Urban, MA has not enforced any measure to deal with such issues in order to protect wetlands.

Developing countries continue to have weaker laws governing environmental management, few resources to enforce the policies or merely a powerful political will to ensure development at the expense of wetlands ecosystem destruction in Zimbabwe. This case can be used to explain the development of the China Mall on the Belvedere North wetland in Harare Urban. The political will overrides EMA this makes EMA unable to enforce some of its environmental policies on wetland management in Harare Urban.

1.5 Dumping of waste

The undesignated portion of the Belvedere North wetland is being used for illegal dumping of waste in Harare Urban. Residents residing near wetland areas dispose waste in the wetland area and the refuse remains uncollected for days. Council is failing to collect refuse in residential areas notes Goredema and Sithole (2013). Wood components, plastic, metallic components, paper and leaves falling from trees are the type of waste materials which has been dumped on

wetland areas by residents in the Belvedere North Wetlands. The refuse has been left to pile over time disturbing the aesthetic value of the wetlands in Harare Urban.

The dumping of waste in the Monavale Vlei wetland continue to pose threat in the wetland areas. Residents living in the area near Monavale vlei have dumped different types of litter in the wetland disturbing various species within the wetland ecosystem. Waste disposal as well as erosion of the wetland areas was evident due to the demand for commercial and residential space noted Masara (2012). The Cleveland Dam threatened by the disposal of waste by a number of residents who have visited the resort wetland. The disposal of waste in the wetland has affected various species within the ecosystem and affected the biological make up of the wetland area.

1.6 Climate change

Wetlands are one of the precious ecosystems within any environment and provide various valuable functions that can be compromised by climate change. Climate change has often resulted in changes in precipitation, evaporation, flooding dynamics that have caused changes in water levels in Harare Urban, habitat structure and water residence times in wetlands. Wetlands often act as a sponge that absorb water and protect the environment from flooding. In Harare Urban, the Borrowdale wetlands due to increased levels of rainfall in 2016 as a result of global warming have experienced flooding. Some wetlands which have been classified for a water residence of 3 months ,6 months and a year have been affected with climate change. With increases in temperatures such as the heat wave which was experienced during the 2015 heat wave period, it led to the depletion of some wetlands in Harare Urban. Other wetlands in Harare Urban have dried up with little or no human interference as alluded to by some residents residing near the Marimba wetlands.

1.7 Conflicts between wetlands management agencies

There has been conflicts between the Environmental Management Agency and urban authorities over the allocation of residential and commercial stands according to Mhlanga et al (2014). Lack of data relating to wetlands by wetland management agencies has been a source of conflict, making it difficult for sustainable management of wetlands , environmental impacts assessments and informed decision on wetlands in Harare Urban. Environmental Management Agency and various institutions of wetlands management have different objectives on wetlands management and this has undermined their concern over wetland management. Institutions have often confused people in efforts to manage wetlands in Harare Urban as they have different measures to manage wetlands. In such instances, residents are forced not to adhere to any laws that manage wetlands in Harare Urban. Conflicts have often made the management of wetland resource difficult as law enforcement agencies on wetlands fail to create proper grounds for prosecution. The Monavale Vlei wetland in Harare Urban have voiced conflicts between different institutions in its management

CONCLUSION

Wetlands have continued to be threatened by a number of factors in Harare Urban. This Chapter has clearly indicated what is putting wetlands existence and conservation in danger. The importance of wetlands in Harare Urban has been ignored by a number of people that are supposed to be benefiting from the presence of wetlands ecosystem as a natural resource in any environment. Using these threats therefore there is need to assess the successes and failure of strategies which have been implemented by EMA towards saving wetlands in Harare Urbans will be discussed in the next Chapter.

CHAPTER TWO

SUCSESSES AND WEAKNESSES OF STRATEGIES BY EMA TOWARD SAVING WETLANDS IN HARARE URBAN.

INTRODUCTION

The researcher in this chapter examined how the Environmental Management Agency of Zimbabwe's has succeeded and failed in its strategies aimed at saving wetlands in Harare Urban using information gathered from respondents. To start the researcher looked at various policies that have been implemented by the board in efforts to protect wetlands in Harare Urban. The researcher looked at the environmental act of 2002 and the various statutory instruments which have been created in efforts to protect wetlands. The Environmental Management Agency is a government board mandated to ensure the management of environment resources in Zimbabwe. Most studies have revealed that successful use and management of wetlands ecosystems can be achieved if environmental policy makers understand the relationship between wetlands, people and existing environmental policies on wetlands management.

2.1 THE ENVIROMENTAL MANAGEMENT ACT OF 2002

Zimbabwe in its effort to protect the environment and to support of the Ramsar Convention has domesticated the provisions for the management of the wetlands under the Environmental Management Act. This act therefore gives leverage for wise use of wetlands by communities EMA (2003). EMA through the Environmental Management Act regulates, monitor and promote the protection and sustainable management of the environment with stakeholder participation. The act governs the utilisation of wetlands in Zimbabwe. According to EMA the Environmental Management Act (Chapter 20:27) section 113 gives the Minister responsible for Environment and Climate Change the powers to”

- declare any wetland to be an ecologically sensitive area and may impose limitations on development in or around such an area."
- prohibit the reclamation or drainage, disturbance by drilling or tunnelling in a manner that has or is likely to have an adverse impact on any wetland or adversely affect any animal or plant life therein.
- prohibit the introduction of exotic animal and plant species into a wetland.

Failure to abide by the law on conducting activities on wetlands is a crime that attracts a fine not exceeding level eight or imprisonment not exceeding two years or both such fine and such imprisonment according to EMA. The Environment Minister has had the right to serve a written order to desist any development on any wetland. The Environmental Management Act provides for the development of an efficient and effective administrative and legal framework to aid the management of natural resources in Zimbabwe. The Environmental Management Act of 2002 was endorsed for the management of natural resources to prevent pollution and environmental degradation. This is the main environmental act in Zimbabwe that deals with wetlands management and EMA has a coordinating role over various policies that have been made for wetlands management. According to EMA wetlands are ecologically sensitive areas and development in and around such areas requires permission in terms of 113 of Environmental Management Act (Cap 20:27). The Environmental Management Agency has set out principles of environmental management under section 4(2) (i) which have specified that complex, vulnerable and exceedingly dynamic ecosystems require attention in management and planning procedures.

The Environmental Management Act created a framework for environmental management, made provision for the formulation of environmental management quality standards. The Act has produced guidelines for the creation of the Standards and Enforcement Committee to ensure

management of the environment. The Environmental Management Act of 2002 offers general environmental principles that should be followed in environmental management and through section 113 sub-section 1-3 limitations on development may be imposed by the minister. This Act provides leverage for wise use and management of wetlands by the surrounding residents. The concept of the Integrated Environmental Approach is managed through the EMA of 2002. The law requires land developers to obtain an Environmental Impact Assessment Certificate from EMA which manages the environment before they are given a permit to carry on with a project on wetlands in Zimbabwe.

2.2 STATUTORY INSTRUMENTS

The statutory instrument 7 of 2007 is the one of the instruments that have placed more focus on the management of wetlands in Zimbabwe. According to EMA the statutory instrument provides for the prevention of veld fires, protection of wetlands and public streams. The Statutory 7 of 2007 comprise of the Environmental Impact Assessment and the Ecosystems Protection Regulations. The statutory instrument provides licences to wetlands users with a clear wetland management plan according to Marambanyika (2015). The Environmental Management Agency through the Statutory 230 of 2003 allows the equitable and effective participation of all interested and affected parties in environmental management including wetlands.

Chiesura (2009) notes that the Statutory Instrument 6 of 2007 regulate the disposal of effluent and solid waste , prohibiting any person from, disposing waste into public streams and ground water. This also ensures the protection of the precious wetlands ecosystems in Harare Urban. According to EMA, any person who contravenes the statutory instrument shall be guilty of an offence and liable to fine not exceeding six months or both such fine and imprisonment.

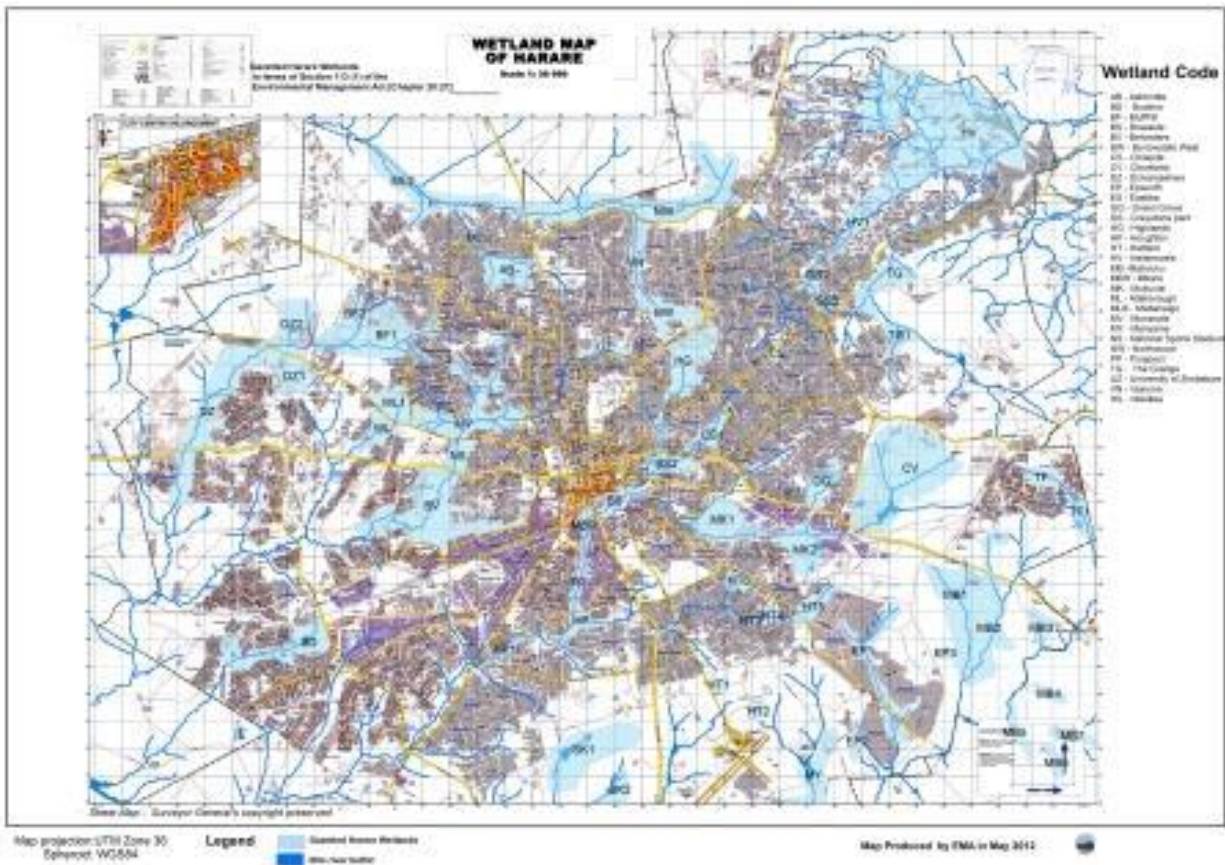
2.3 SUCCESSES OF STRATEGIES BY EMA TOWARDS SAVING WETLANDS IN HARARE URBAN

The Environmental Management Agency has partly succeeded in its efforts aimed at saving wetlands in Harare Urban. SI 7 of 2007 has required environmental impacts assessments to be carried out before the implementation on a project to ensure that there is no destruction of the environment. The results from the EIA have been used by the agency to determine whether the project should be stopped, revised and carried out if it ensures the protection of the environment. The Agency managed to stop developments of the US\$100 million mall by Augur Investments which was situated on wetlands in Harare Urban. The Environmental Management Agency has expressed concern over the allocation of residential stands on wetlands. EMA stopped the construction of a sewer pipeline in Gunhill where Augur Investments was developing an upmarket new suburb arguing that raw sewerage leakage will cause the quality of water in the ecosystem to deteriorate and affect the wetland ecosystem area. This can be pointed as some of the successes of EMA in wetland management contribution in Harare Urban.

2.3.1 Wetlands Inventory

‘In trying to craft a good wetland management strategy, EMA conducted a national survey compiling a resources inventory noted Mr Steady Kangata according to Kawadza(2016). Mapping has provided a number of wetlands that are in existence in Harare Urban that can be preserved within the environment for sustainability. Baker et al. (2006) on the other hand asserts that accurate wetland mapping is an important tool for understanding wetland function and monitoring wetland response to natural and anthropogenic actions. Mapping of wetlands provided data on their ecological and physical conditions and indicated developments on wetlands areas in Harare Urban. This empowered policy makers with up to date information for

sustainable decision making in wetlands management in Harare Urban. The picture below shows the wetlands map of Harare



SOURCE : ENVIRONMENTAL MANAGEMENT AGENCY

The Monavale Vlei is one of the wetlands that have remained well preserved in Harare Urban so far. Several land developers have approached EMA with the project to develop cluster homes on the wetland ecosystem. The agency did not approve the project but however developers went on to the Harare City Council authorities get approval on development on the wetlands. Using the Environmental Management Act of 2002 the agency criminalised the issue and it was handed over to the court where the court verdict stated, Monavale Vlei was not open to developers, quoting section 97 (5) of the Environmental Management Act which does not allow the issuance of a permit without an Environmental Impact Assessment Report obtained from EMA.

2.4 WEAKNESSES OF STRATEGIES BY EMA TOWARDS SAVING WETLANDS IN HARARE URBAN

The destruction of wetlands ecosystems in Harare Urban is unjustifiable. Environmental legislation has not managed to stop wetlands destruction causing severe damage to the wetlands ecosystems. If the main function of the Environmental Management Agency is to protect, manage and govern Zimbabwe's natural environment, the agency has dismally failed where wetlands are concerned. Certainly, EMA lacks the capacity to protect our precious lands of saturated water and thriving biodiversity from profit-driven vultures such as Harare City Council and other land developers. The weaknesses by the agency to effectively protect the country's wetlands in Harare Urban betrays the commitments made by Zimbabwe under the Ramsar Convention to promote the conservation of wetlands ecosystems.

2.4.1 Poor Government Support

The government of Zimbabwe using the Ministry of Environment Water and Climate has provided little or no support to the Environmental Management Agency in its strategies towards saving wetlands in Harare Urban. The agency has been operating under the MoECW, which has undermined its capacity to save wetlands in Harare Urban. The Minister of Environment Water and Climate has been held responsible to work with the Agency in efforts to save wetlands in Harare Urban. Basing with the Environmental Management Act of 2002, general functions of the minister has been to regulate the management of the environment and to promote, coordinate and monitor the protection of the environment and the control of pollution. Although the minister has been given power over wetlands, the MoECW has not been given power to stop development by local authorities from developing on wetlands in Harare Urban. Using information gathered from residents residing near the Belvedere wetland it can be noted that the

government's support to EMA in its strategies towards saving wetlands in Harare Urban is largely questionable.

The government has undermined EMA's contribution towards sound wetland management in Harare Urban. The construction of a vast hotel and shopping mall on a designated wetland adjacent to the National Sports Stadium in Harare Urban is a clear indicator of the government's failure to support EMA in efforts to save wetlands pointed one Belvedere resident. Mathuthu (2013) notes that the environmental agency is said to have backed down from taking legal action against the Chinese due to political pressure. The Environmental Management Agency has not been able to stop developments on wetlands that have been approved by the government. The elephant in the room which they cannot tackle remains the lack of political will on the part of the ZANU-PF government to deal with those who are destroying the environment for selfish gain according Financial Gazette (2017). This has often been used to justify EMA's weaknesses in its strategies towards saving wetlands in Harare Urban.

EMA continues to be weak in its strategies aimed at saving wetlands in Harare Urban. According to Zivira (2017) as a result of ZANU-PF dangling land as a carrot to woo urban voter, dozens of informal settlements have sprouted in the city, with many of them allocated on wetlands and river banks. Environmentalists have warned the government approval on the construction of the mall as has posed damage to the ecologically sensitive area in Belvedere and posing a harm to Harare's sources of water. The government has showed lack of interest in wetland management issues thus EMA continues to be weak in its strategies aimed at saving wetlands in Harare Urban as it is an environmental agency which falls under the government.

2.4.2 Lack of effective stakeholder participation

Wetlands environmental laws have been silent on the issues of power between the Harare City Council (HCC) and the Environmental Management Agency (EMA). This has made the agency weak in its strategies towards saving wetlands in Harare Urban. In 1992 Harare alone had 1,3 million hectares covered by wetlands according to the Agency officer and more than half of the wetlands are now drylands. The Harare City Council has issued many land developers land on wetlands in the face of EMA notes one resident in an interview made by the researcher. There has been conflicts between the Environmental Management Agency and urban authorities over the allocation of residential and commercial stands on wetlands according to Mhlanga et.al (2010). There are several settlements that have sprung up on wetlands throughout the country with the full approval of city fathers and with tacit complicit on the part of the Environmental Management Agency (EMA) notes Financial Gazette (2017). As a result this has weakened EMA's strategies aimed at saving wetlands in Harare Urban. While EMA fines local authorities for allowing settlements on wetlands, this has not helped the situation as corruption and impunity have become ingrained in the society's social fabric according to the Financial Gazette (2017).

The Agency has written a number of letters to HCC instructing them to stop further allocation of residential and commercial stands and development on wetlands in Harare Urban. Environmentalists in Harare Urban have tried to raise red flags on commercial developments on wetlands such as the Long Chen Plaza which had been approved by the HCC. It seems those who can afford it, can simply buy land on wetlands and use it in whatever way they deem necessary according to Masara (2012). Despite various policies and laws for the management of wetlands, the Council continues to allow infrastructural development to encroach wetlands because local government legislations out muscle the Environmental Management Act of 2002 and the SI 7 of

2007. In most urban centres, iconic wetlands have been turned into residential areas with some now a hive of commercial activities where service stations, shopping malls and some such facilities have taken over right under the noses of city fathers according to the Financial Gazette (2017).

2.4.3 Lack of law enforcement

A multi-sectoral approach is needed for the management of wetlands in Harare Urban. There is need to act within the provisions of sustainable management of wetlands. The multiplicity of legislation coupled with misinterpretation by those that enforce the laws, has led to confusion on the legal standing of the sound management of wetlands in Harare Urban. Wetlands have been protected by the authorities since colonial times –controlled through legislation because of their ecological vulnerability and left undeveloped because of their challenges for construction according to Brazier (2012). The Harare City Council has often by-passed section 97(5) which states that the Council before it permits any development on wetlands, a developer must obtain an environmental impact assessment certificate relating to the project from EMA.

From interviews done with officials from EMA, the environmental agency alike various parastatals in Harare lacks resources from the treasury to monitor the implementation of the environmental policies. Basing with the Environmental Management Act funds of the agency have consisted of any money's that may be payable to the agency from money's appropriated for the purpose by the Act of parliament .Funding has made the Environmental Management Agency weak in its strategies aimed towards saving wetlands in Harare Urban. According to the Environment Management Act (2002) the agency has depended on any loans, donations and grants made to the Agency by any person or Agency or by any government of a country. This

has seen the establishment of an Environment Fund that helps in allocating funds to different projects that are carried out by the Agency. EMA has not been able to carry out Environmental Impact Assessments on wetlands due to lack of funds in Harare Urban from time to time noted an EMA official.

The absence of Environmental Impacts Assessments has posed a threat to wetlands in Harare Urban making EMA weak in its strategies aimed at saving wetlands in Harare Urban. Residents in Msasa have noted that the wetlands in the area continue to be polluted by the ZIMPHOS industry which continue to dispose hazardous waste in the wetlands which later flows into the Mukuvisi river. From interviewing an official from EMA, it can be summed up that Environmental Impact Assessments have not been carried out weakening the agencies contribution to sound wetland management wetlands in Harare Urban.

The Environmental Management Agency in most of the Environmental Impact Assessments that it has carried out has not been up to scratch making it weak in its effort aimed at saving wetlands in Harare Urban. ‘You wonder if people that do these EIA’s even did Geography at school. They seem to not understand what a wetland even is. The way they are reviewing the EIA’s leaves a lot to be desired’, said Allan Chimanikire of Mukuvisi Woodlands , who is part of the Wetlands Survival Forum, established to fight the continued wetlands destruction according to Masara (2012). Residents in Mukuvisi have noted the problem is with the Environmental Management Agency who issues out EIA’s to various land developers in Harare Urban. The EIA on the Belvedere wetland were the China Mall was built was done after the construction of the mall, which is a clear weakness of the agency in its strategies aimed at saving wetlands . Hence

wetlands in Harare continue to be threatened still with the existence of EMA which act as a watchdog for environmental issues.

2.4.4 Lack of resources for wetlands management

The control and management of the Environment Fund ,which was established under section 48 ,subjected to the Environmental Management Act , has been vested in the Minister of Environment Water and Climate as a trustee of the fund. According to the Environmental Management Act of 2002 section 50 the Minister in consultation with the Board and with the approval of the Minister of Finance , may by notice in a statutory instrument , impose on environment levy on any person or class of persons whose activities impact on the environment. Environmental Impact Assessments and Ecosystem Protection Regulations (SI) 7 of 2007 provides for the protection of wetlands however EMA claims to have their hands tied when it comes to stopping developments on these marshes according to Kadarire(2014). Thus EMA continues to be weak in its strategies aimed at saving wetlands in Harare as it is largely depended on the MoECW and as an agency wetlands management strategies are not passed without the ministry's effort.

The Environmental Management Agency as an institution it can be noted that it has been weak in is strategies aimed at saving wetlands in Harare Urban. Section 37 of the Environmental Management Act of 2002 noted that an officer or inspector may, for purposes of enforcing this Act and any regulations made under it, at all reasonable times and without warrant or previous notice enter any land, premises, vessel, vehicle or any other place in Zimbabwe to determine whether the provisions of this Act are being complied with .According to the act the official may

examine any activity which the officer or inspector reasonably considers to be detrimental to the environment or natural resources. The Act has given the environmental officer power to respond immediately to protect and manage the environment. It can be noted that in the presence of such policies in the Act wetlands have continue to be threatened in Harare Urban

2.4.5 Poor definition of roles

Environmentalists are gravely concerned about the disappearance of wetlands but without the tools to enforce by-laws , treaties and conventions which Zimbabwe is signatory to , they cannot do much to protect these cradles of biological diversity that provide the water and productivity upon which countless species of plants and animals depend on notes Financial Gazette (2017). Industrialists and residents in Harare Urban have regarded environmental regulation as haphazardly enforced. The EMA of 2002 keeps drawing its environmental fines structure from schedules that were set in 2002. The environmental policies are said to be punitive, the residents have indicated that the enforcement of the Environmental Management Act of 2002 and the SI 7 of 2007 is not transparent. According to the Environmental Act of 2002 Section 113 subsection 2 No person shall, except in accordance with the express written authorization of the Agency, given in consultation with the Board and the Minister responsible for water resources

- (a) reclaim or drain any wetland;
- (b) disturb any wetland by drilling or tunneling in a manner that has or is likely to have an adverse impact on any wetland or adversely affect any animal or plant life therein;
- (c) Introduce any exotic animal or plant species into the wetland.

Subsection 3 goes further to state that any person who contravenes subsection (2) shall be liable to a fine not exceeding level eight or imprisonment not exceeding two years or to both such fine

and such imprisonment. The fines have not been specific to whom they are directed to because both individuals and companies have threatened wetlands resources in Harare Urban. Land developers, residents and industrial companies continue to threaten wetlands ecosystem as a result. Harare Residents Trust director, Precious Shumba said council has a duty to enforce by-laws and safeguard what remains of the city's wetlands, but it was regrettable that councillors were decimating the fragile wetlands. Hence the Environmental Management Agency continues to be weak in its strategies aimed at saving wetlands in Harare Urban as it is highly dependent on Municipal Police operating under the Harare City Council for law enforcement.

In Zimbabwe wetlands have been protected on paper, documents review that the Environmental Act of 2002 which the agency uses for wetlands management is bound to be complemented by other policies and laws that are not in conflict with it. The provisions of section 113 which seek for the management and protect wetlands are not adequate for wetlands protection in Harare Urban as with their existence residents have continued to pose a threat to wetlands ecosystems. The Environmental Management Act of 2002 was projected to evaluate the efficiency and effectiveness of policy alternatives, to establish standards of wetlands management and control the effects of activities on wetlands. All these require quality data that the agency has not gathered for sound wetlands management notes Malbereign residents. Thus, some wetlands continue to be threatened in the presence of policies on management of wetlands, in the Malbereign area wetlands continue to be destructed by illegal dumping and urban agriculture.

2.4.6 Poor wetland management techniques

EMA has been weak in its strategies aimed at saving wetlands in Harare Urban as if has failed to come up with wetland management techniques such as putting a value on wetlands. For example,

in countries such as Uganda wetlands have provided a number of tangible and non-tangible benefits to the society. This has increased the quest of people living in Uganda to sustainably manage their wetlands. According to Kakuru , Turyahabwe and Mugisha (2012) The tangible benefits include water for domestic use and watering of livestock, support to dry season agriculture, provision of handicrafts, building materials, and food resources such as fish, yams, vegetables, wild game, and medicine. The non-tangible benefits include flood control, purification of water, maintenance of the water table, microclimate moderation, and storm protection. If the Environmental Management agency was to breed fish or practise bee keeping in wetlands ecosystems for the benefits of the society in Harare Urban. For wetlands such as the Monavale Vlei it would be hard for wetlands to be destructed noted one resident in Harare Urban.

CONCLUSION

It can be noted that the Environmental Management Agency had largely been weak in its strategies aimed at saving wetlands in Harare Urban. It had a few successes that can be pointed out as temporary, as some of the success are only for a short period of time .Wetlands continue to be threatened in the presence of EMA as a watchdog for environmental issues .The efforts the agency has made cannot be ignored , the agency has showed concern on the management of wetlands in Harare Urban. Various strategies such as the use of the Environmental Management Act of 2002 and Statutory Instrument 7 of 2007 have been implemented in efforts to manage wetlands in Harare although their existence has been questioned by some residents in Harare. Hence there is need to draw strengthening strategies for EMA to contribute to sound wetland management in Harare Urban.

CHAPTER THREE

STRENGTHENING EFFORTS AIMED AT SAVING WETLANDS IN HARARE

INTRODUCTION

Wetlands have continued to be threatened in Harare Urban. This Chapter provides measures that could be place in Harare Urban to strengthen efforts aimed at saving wetlands. In Zimbabwe there is need to put monetary value on our precious ecosystems. Resuscitating wetlands is very important to bring back into the ecosystem various species of flora and fauna that can be extinct in other parts on the country. The researcher has come up with a number of suggestions that can be employed in efforts to contribute to sound wetlands management in Harare Urban

3.1 Legislation review

There has been a fragmented approach to wetlands management in Zimbabwe which in not sustainable, some uncoordinated pieces of legislation that are currently managing wetlands and the legislation remains incompatible with the changes that are currently taking place. The Environmental Management Act has not offered clear guiding principles of utilizing and managing wetlands, they have proved to be just pieces of legislation that do not offer any measures that can done to ensure wetlands management in Harare Urban. The currently used pieces of legislation in Zimbabwe should be coordinated to effectively manage wetlands.

The laws to protect wetlands must be strict and the use of wetlands must be regulated by the Environmental Management Agency. The Ramsar Convection at global level has not been enough to ensure the sound management of wetlands throughout. Accordingly, the researcher recommends the enactment of a parliamentary Act that provides guiding principles on the

utilization and management of wetlands in Harare Urban. The research has highlighted the importance and various functions of the wetlands of which the provisions of SI 7 OF 2007 are not enough to ensure the sustainable management of wetlands in Harare Urban. Wetlands keep being exposed to new threats with the change of years in Harare Urban with 2015-2017 pointing a sharp increase in urban development on wetlands, with some wetlands such as the Ashbrittle wetlands being occupied for residential purposes. Various policies of wetlands management by the Environmental Management Agency has been silent in regards to such environmental issues.

The Environmental Management Agency needs to revisit the Ministerial prerogative need to be revisited. The MoECW has been held responsible for the Environmental Management Agency Section 113 of the Environmental Management Act has provided for the ministerial prerogative on wetlands development in Zimbabwe. With the prerogative being exercised in consultation with the Environmental Management Board, it is of importance to note that the same Minister has been responsible for the appointment of the Board. This has given the Minister powers to authorize human activities on wetlands without limitations, which has been detrimental to the future generations. This can be therefore avoided by reviewing the Minister's power on the precious ecosystem

The creation of an independent Wetland Act in Zimbabwe can be considered very crucial in strengthening efforts aimed at saving wetlands in Harare Urban by EMA. The Act should provide guiding principles for the sustainable use and management of wetlands and information on wetlands fragility and importance. The EMA of 2002 has not been able to provide guidelines on wetlands management and has advocated for the management of wetlands in passing which should be covered up by the creation of an independent act.

3.2 Coordination of institutions that legalise the use of the wetlands.

With the Environmental Management Agency taking superiority of all the laws in cases of wetlands management, the efforts of concerned stakeholders. Laws from government ministries such as by the Ministry of Local Government and Public Housing, Ministry of Environment, Water and Climate, Tourism. The researcher applauds the strengthening efforts which have been done through the separation of the Ministry of Environment and Climate Change and the Ministry of Tourism as starting point towards governments efforts to promote environment management in Zimbabwe.

The Harare City Council should work hand in hand in wetlands management policy formulation in efforts to preserve the precious ecosystems in Harare Urban. Often HCC has been responsible in the allocation of residential stands in Harare for instance in Kuwadzana Wetlands. The agency should also work with some organisations such as Protection on Natural Resources, Conservation Society of Monavale and the Wetlands Survival Forum. There has been conflicts among governmental institutions and non-governmental organisations over the management of wetlands in Harare Urban. In such instances the wetlands resource have suffered more as it virtually belongs to nobody and hence no ultimate care is concentrated to wetlands

3.3 Strengthen the Environment Management Agency

The autonomy of EMA needs to be reviewed to ensure sound management of wetlands in Harare Urban. In Zimbabwe, EMA has been under the MoECW making the board subject to political interference in the course of carrying out their constitutional mandate as an agency. This has seen the development of the China Mall on the Belvedere Wetlands in Harare Urban making EMA unable to exercise its constitutional will on the perpetrators of the Belvedere wetland area. Therefore there is need to make EMA an independent board to ensure for the maximum

management of wetlands in Harare Urban. For instance, it can be helpful for the Agency to copy how bodies such as the Zimbabwe Electoral Commission (ZEC) have been independent and how they have operated successfully as an independent board . To strengthen the Environmental Management Agency they is need the redefine the agencies responsibilities in wetlands management in Harare Urban and in Zimbabwe at large. There is need to make sure that the responsibilities and roles of EMA in sound wetlands management are not duplicated with those of other institutions in Zimbabwe.

3.4 Avail required resources for environmental management

The unavailability of resources have posed a threat to wetlands due to inability of the Environmental Management Agency to carry out EIA. The Mukuvisi wetlands have continued to be polluted by industrial chemicals from various industries in Harare Urban. The government should provide funding for the accomplishment of the Environmental Management Act of 2002, S.I of 2007 and various policies, which ensures the sound management of wetlands in Harare Urban. If in every parts of Zimbabwe responsible authorities could adapt some wetland management strategies that have been done in some areas of the country the threats posed to wetlands would be reduced. In Harare Urban there is need to empower wetland management institutions such as the Wetlands Survival Forum , Conservation Society of Monavale and Birdlife Conservation which can be able to provide funding to EMA, for wetlands management efforts. Through funding from the Small Grant Fund and other partners, people in the area have managed to harness the power of their wetlands in Shurugwi.

3.5 Revisit fines to show the gravity

The current fines imposed on wetlands mismanagement by the legislation are not deterrent enough; in many instances the fines are very slight. Profitable institutions in Harare Urban can simply take such expenses as operational costs and include such in their margin of profit calculation. The Environmental Management Agency should come up with stiff penalties in wetlands related issues in efforts to contribute to sound wetlands management in Harare Urban. A maximum of \$5 000 is not deterrent enough for the institutions and local authorities that have been developing on wetlands in Harare Urban. Fines for local authorities and institutions should increase to a maximum of \$25 000.EMA after fining wetlands destructors it should also make efforts to stop developments on such precious ecosystems. Some institutions such as the Harare City Council although they have been fined and not stopped developments on wetlands by EMA .HCC continues to be the leading destructors of wetlands in Harare Urban. Increase in fines can be used as a way to stop destructions by the HCC. The agency has only focused on fining big institutions ignoring a number of individuals that have threatened wetlands through urban agriculture and dumping of waste. The Agency should consider the issuance of spot fines to individuals of at least \$100 to those that threaten wetlands in efforts to manage wetlands in Harare Urban.

3.6 Grassroots sensitization

Grassroots sensitization should be carried out coming from a sustainable management of wetlands perspective rather than from a conservative perspective. This is helpful in efforts to manage wetlands in Harare Urban. High unemployment levels and low incomes in Harare Urban have led to the cultivation of wetlands by local residents residing near wetlands in a bid to supplement household income. Hence in-depth grassroots sensitization on the provisions of

wetland policies and values of wetlands should be done by EMA in Harare Urban in efforts to contribute to sound wetlands management.

EMA in wetland management has often take a top-down approach. Grassroots sensitization is very important as it takes a down-top approach. Grassroots have ideas and skills on sound wetland management in Harare Urban . Residents have knowledge on how wetlands are threatened and how they can be managed and therefore it is very useful to incorporate them in wetlands management .EMA working with the grassroots can be able to develop a sound wetland management plan that can be able to save our precious ecosystems in Harare Urban

3.7 Stakeholders alternatives that are sustainable for wetland management

Most developments in Harare Urban have been made on wetlands and therefore investors have to come up with artificial wetlands. The EMA working with other environmental boards towards wetlands management in Harare Urban can come up with the creation of artificial wetlands as a way of reducing the effect of developing on wetlands. Some countries such as United States of America and Canada have resorted to create artificial wetlands that serve the same functions as natural wetlands. Stakeholder forums should be incorporated in the wetlands management policies in Zimbabwe. To establish a sound wetland management policy, previous laws and policy instruments, have to be revised by stakeholders. Stakeholder engagement is important in efforts to address issues of wetland management. Contribution by different stakeholders can create sustainable strategies for wetland management in Harare Urban. Stakeholders such as Wetlands Survival Forum, Conservation Society of Monavale, Birdlife , Residents Association and the community there are important stakeholders in wetland management in Harare Urban.

Community participation can be identified as one of the strengthening efforts aimed at saving wetlands in Harare Urban . Local residents provide with information needed for making wetlands policies and the socio-economic conditions of wetland ecosystem resources. According to Shresth (2011) local people disseminate the information regarding threats and dangers to different organisations. Local residents by wise utilization of wetlands resources help maintain ecological balances of wetlands. The Environmental Management Agency should make use of the Wetland Management Policy that incorporates local participants. The Wetland Management Policy ensures for the conservation and management of wetlands with local peoples participation for their benefit while maintaining environmental integrity according to the terms and spirit of Ramsar Convention.

Coordination of the Environmental Management Agency, local residents, federal and interests groups on wetland management tools, resources and expertise can lead to an effective resolution of wetland management conflicts and improve the effectiveness and efficiency of wetland conservation efforts. Participation of locals in wetland management promotes a sense of ownership and accountability thereby reducing human threats by locals, as they are indebted to sustainable management of wetlands. With the declining government resources, it is clear that involving local communities as the main actors in wetland management is by far the most promising solution to ever-increasing threats to the integrity of wetlands according to Marambanyika et.al (2012)

3.8 Educational awareness campaigns

Educational services partnerships is an efficient method to foster informed decision making at policy and community level on wetlands management in Harare Urban. Effective educational awareness campaigns needs the involvement of local actors .According to UNEP (2002) Agenda

21 has identified education and awareness as key areas to environmental sustainability .EMA working with various institutions on wetlands management should provide support and tools for the practical implementation of education and public awareness. Educational awareness campaigns have often been carried out in rural areas therefore there in need to take campaigns in Harare Urban in efforts to manage wetlands.

Zimbabwe in efforts to educate and aware people on the importance of wetlands should draw examples from West Africa. In West Africa there is the Wetlands International West Africa Regional Programme as part of a sub-regional project between 1998 and 2003 .At sub-regional level the programme was designed to improve the knowledge of wetlands and their wise use within general public, decision makers , the private sector and other target groups according to Diagau Diop and Beye (2006) .The Programme has proved to be effective in Bouyou Village , Lac Naonga a coastal wetland in Congo as it has carried out educational awareness campaigns and various wetlands ecosystems in the area have been managed by the locals. Therefore, this strategy can be used in efforts to manage wetlands in Harare Urban.

EMA should prioritise the training of technical staff and management on wetlands management. It is important to develop on public education plan on the importance of wetlands in Harare Urban. The involvement of local, national and regional associations in education and public awareness activities is important in ensuring sound wetland management. In Harare people residing in areas near wetlands need to be educated on how human activities have often threatened wetlands. The Agency should make use of its website to educate people on the importance of wetlands and guiding principles on wetlands management in Harare Urban. The Agency has currently advanced to use the WhatsApp platform , the agency can use the platform to create messages that can be passed to various WhatsApp groups educating local people on

wetlands related issues . 75 % of people living in Harare have access to the WhatsApp platform, this can help reduce the threats by human activities on wetland areas

3.9 Fencing of wetlands

Fencing is one of the simplest means of protecting and managing wetlands . Fencing protects the existing vegetation on wetlands and encourages the regeneration of depleted wetlands.It is very important to fence wetlands in efforts to manage the in Harare Urban. Fencing has secured wetlands for example the Gokori wetlands in Shurugwi and the Magwenzi wetland in Chibi. The Magwenzi wetland was fenced in 2009 and has survived from depletion for quite sometime This can be adopted to save wetlands in Harare Urban by Environmental Management Agency. For instance EMA working with committees such as the Malborough Residents Associations should come up with ways on how they can fence wetlands in their area in efforts to sustainably manage the wetland areas. Wetlands should be fenced ,securing them for the use of future generations is an important aspect in efforts to manage wetlands in Harare Urban.

3.10 Adding value to wetlands

Adding value to wetlands changes the way in which societies manage wetlands and is a very important tool to facilitate decision making on wetlands management issues .Putting a price on nature gives policy makers a much clearer idea of the tradeoffs they face with the offers for development of the land. Wetlands can be managed better if taken into the economic welfare indicators such as the Gross National Product according to the Ramsar (2010) .

In efforts to manage wetlands in Harare Urban there is need to draw examples from the Lake Chilwa wetland in South Malawi on the boarder of Mozambique. The wetland has been valued at US\$21,056,392. Valuation of wetlands is important as it shows how wetlands are worth

economically and shows an estimate of initial costs to the society if wetlands are lost in their area. Some countries such as the United States of America have bought their wetlands and have since valued them to be over 1 billion .By putting a value on wetlands and indicating loss value of depleting the area we may get somewhere with wetlands management if adopted in Zimbabwe. In Zimbabwe there is need to put monetary value on our precious ecosystems.

3.11 Creation of proper disposal sites

EMA should work hand in hand with the residents, HCC and the various organisations that work to ensure the management of wetlands in Harare Urban to create proper disposal sites for waste to avoiding dumping on wetlands. The HCC can collect domestic garbage regularly with the help of EMA to avoid dumping on wetlands by local residents in Harare Urban. Proper dumping of chemical pollutants, industrial waste, domestic garbage and sewerage is important to avoid dumping on our precious wetlands ecosystems. HCC can create artificial wetlands were they can dispose their sewerage effluent. Harare can use lessons drawn from the rural Pennsylvania and the Tennessee Valley have put up artificial wetlands to treat their municipal sewerage, raising the quality of water that enters streams. The disposal of waste artificial wetlands has proved to be better off than disposing in the natural wetlands being done by HCC.

Residents in Harare have often resorted to dumping waste on wetlands that they often regard as wasted land. There is need for the EMA to ensure spot fines to those who dump litter on wetlands .The Agency should work in good relations with the community so that they will be able to monitor and report those responsible for dumping their litter on wetlands. There is need to effectively carry out EIA to avoid the disposal of industrial effluent, the Agency should frequently conduct assessments to avoid wetlands from being threatened.

3.12 Mapping of wetlands

Accurate classification is an important tool for understanding wetland function and monitoring wetland response to natural and anthropogenic functions according to Baker et.al. (2006). Wetlands mapping provides wetland characteristics , data on their ecological and physical condition and showing the current ongoing developments on wetlands .Mapping of wetlands empowers policy makers to employ decisions for the sustainable management of wetlands in Harare Urban. According to Mhlanga et.al (2014) wetland classification system based on environmental protection and sustainable development principles while adapting to local conditions should be developed so as to have a clear criteria for wetland use and protection. To necessitate scientific decision making on how wetlands should be managed, a database of all wetlands in Harare Urban should be developed. The Environmental Management is currently using the 2012 wetlands map in which some wetlands have been depleted making it had to come with ways to manage wetlands in Harare Urban. Hence, there is need for EMA to create a current map on wetlands in Harare Urban in efforts to manage wetlands ecosystems.

CONCLUSION

Wetlands ecosystems continue to be under threat from a number of human activities in Harare Urban. Wetlands are a home to various species within the ecosystem. In urban areas people have cleared plants, grass and water on a wetland for a number of human activities. Wetlands ecosystems are lungs which urban areas breathe they should be well managed for the sake of future generations. The precious ecosystems have been a home to various species within the environment and are responsible for water purification mechanisms .Using the research it can be noted that the Environmental Management Agency has had little success in its strategies aimed at saving wetlands in Harare Urban thus wetlands have become perennial. There is need for the

agency to use strengthening efforts which have been outlined in the research. Wetland management knowledge should be passed on to communities by EMA to achieve successful management of wetlands in Harare Urban.\

REFERENCE LIST

- Baker,B.,Lawrence,C.,Montagne,C. and Patten,D.(2006) *Mapping wetlands and riparian areas using Landsat etml imagery and decision tree-based models* .Volume26 Number 2 .The Society of Wetland Scientists
- Barbier, E. B (1993) *Sustainable use of wetlands. Valuing tropical wetlands benefits. Economic technologies and applications*. Ramsar Convection Bureau: Switzerland
- Brazier, A. (2012) *Conflicts over urban agriculture in Harare ,Zimbabwe* .Harare :Zimbabwe
- Bulger, R.E. (2002) *Research with Human Beings*. In Bulger, R.E., Heitman, I., &Reiser, J. (Ed.), *The Ethical Dimensions of the Biological and Health Sciences*. New York: Cambridge University Press.
- Chiesura,A.(2009) *The Role of Urban Parks for Sustainable City*. Volume 66
- Chirisa ,I .,Matamanda,A. and Skiyi,V.(2016) *Constraints and Opportunities in integrating wetland ecosystem services provided by wetlands in Harare* .Zambezia: Zimbabwe
- Dugan, P.J. (Ed) (1990) *Wetland Conservation: a review of current issues and required action*
World Conservation Union (IUCN), Gland: Switzerland.
- Environmental Management Agency. (2005) *Annual Records*. Environmental Management Agency: Harare
- Financial Gazette(2017) Wetlands Continue to Disappear. Available at <http://www.financialgazette.co.zw/wetlands-under-new-threat/>
- Flodman ,B.K.(2004) *Fact finding study: The informal economy* .March:Sida Sweden
- Frenken, K. and Mharapara, I, (eds) (2002) *Wetland Development and Management in SADC*

Countries. In Proceedings of a Sub-Regional Workshop, 19-23 November 2001, Harar

Haralambos and Holborn (2000) *Sociology: Themes and Perspectives*. 5th edition Harper Collins: London

Kadirire,H.(2014) Harare's wetlands under threat. Available at https://www.dailynews.co.zw/articles/2014/02HN_07-9-659x439.gif [Accessed on 26 April 2016]

Kelman, H.C. (1977) *Privacy and Research with Human Beings*. Journal of Social Issues, Prentice

Hall

Leady, P.D. and Ormrod, J.E. (2010) *Practical research: Planning and design (9th Edition)* Prentice Hall: Upper Saddle River, NJ

Masara,C(2012) Will wetlands abuse ever stop : The Standard.Retrieved at [URL:http://www.the-standard.co.zw](http://www.the-standard.co.zw)(20/10/2014)

Matamanda , A.,Chirisa ,I. and Mukamuri,B(2014) *Stakeholders awareness of and perceptions of Ecosystem services provided by wetlands in Harare.Zambezia: Zimbabwe.*

Marambanyika,T. and Beckedahl ,H (2017) *Review of social science :Institutional arrangements governing wetland utilization and conservation in communal area of Zimbabwe* Volume 2 Number 1.Retrieved from <http://www.socialsciencejournal.org>

Matthews, G.V. T (1993) *The Ramsar Convection on Wetlands: and its History and Development*. Ramsar Convection Bureau, Gland, Switzerland.

McInnes,I.(2010) *Urban development ,biodiversity and wetland management :UN Habitat Expert Workshop Report 16 to 17 November 2009* Kenya Wildlife Service Institute:Naivasha

Mhlanga,B.,Maruziva,R. and Buka,L.(2014) *Mapping Wetland Characteristics for Sustainable Development in Harare : The Case of Borrowdale West, Highlands, National Sports Stadium and Mukuvisi Woodlands Wetlands*. University of Zimbabwe: Mount Pleasant

Mutisi,L. and Nhamo,G(2015) *Blue in the Green Economy : Land use change and wetland shrinkage in Belvedere North and Epworth localities* .Zimbabwe

Nueman ,W.L(2000) *Social research methods :Qualitative and Quantitative approaches*.4th Edition. Allyn and Bacon: Boston

Ramsar Convention Secretariat, (2010). *Wise use of wetlands: Concepts and approaches for the wise use of wetlands*. Ramsar handbooks for the wise use of wetlands, 4th edition, vol. 1. Ramsar Convention Secretariat, Gland, Switzerland.

Ramsar Convention Secretariat (2013) *The Ramsar Convention Manual: A guide to convention on wetlands, 6th Edition* .Ramsar Convention Secretariat, Gland: Switzerland

Tashakkari, A.and Teddlie, C.(2003b) *The past and future of mixed methods research. From data triangulation to mixed model design*. In Tashakkari, A. and Teddi(eds.) *Handbook of mixed methods in social and behavioral research*. Thousands Sage: California

Turner, R.K., Van den Bergh, J.M, Soderqvist, T., Barendregt, A., van der Straaten, J., Maltby, E., Van Ierland, E.C. (2000) *Ecological-economic analysis of wetlands: Scientific integration for management and policy*. Ecological Economics, South Africa.

Whitlow(1993) *Conservation Status of Wetlands in Zimbabwe, Past and Present*, UZ:Harare, Zimbabwe

APPENDICES

Appendix A: Interview guide

My name is Trish Tsveta, a student at Midlands State University studying a Bachelors of Arts in Development Studies Honors Degree. I am currently undertaking a research on: Assessing the contribution of Environmental Management Agency (EMA). The purpose of this interview is to explore the policy provisions in the management of wetlands in Harare Urban as well as their (in)effectiveness. I am requesting for your permission to ask you questions about your general knowledge on these wetlands and how they are valued and used in Harare. You are not obliged to answer any questions if you do not want and your answers are private and confidential.

Interview Guide: Environmental Management Agency

1. How have wetlands been threatened in Harare Urban?
2. What strategies and policies have you put in place to ensure sound wetland management in Harare?
3. How effective has been the strategies and policies to ensure sound wetland management?
4. Why do wetlands continue to be threatened in the presence of these policies?
5. What enforcement mechanisms have you put in place to ensure sound wetlands management in Harare Urban?
6. What are the challenges of faced by EMA in its contribution towards sound wetlands management in Harare Urban?
7. What are your strengthening efforts aimed at saving wetlands in Harare Urban?

Interview Guide: Harare City Council

1. What is the City Council doing to support EMA in wetlands management in Harare Urban?
2. Does the Harare City Council have by-laws to ensure the management of wetlands in Harare Urban?
3. Why is the Harare City Council continuing to issue land to various land developers on wetlands?
4. How effective has been EMA in efforts to manage wetlands in Harare Urban?

Interview Guide :Residents

1. How important are wetlands to you as a resident of Harare?
2. What are the benefits of managing wetlands in Harare Urban?
3. What is the current state of wetlands in Harare Urban? How have they been used over the years?
4. Do you think that Environment Management Agency (EMA) as an institution that was put in place to manage wetlands in Harare Urban is doing what it is intended to do? How/Why?
5. In your own assessment how has the Environment Management Act (EMA) contributed to the management of wetlands in Harare?
6. What can be done by EMA in efforts to manage wetlands in Harare Urban?

Appendix B : Research Letter



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FACULTY OF ARTS

OFFICE OF THE CHAIRPERSON

Department of Development Studies

To Whom It May Concern

RE: REQUEST FOR PERMISSION TO CARRY OUT RESEARCH

.....,Student Registration Number R.....is a bona fide student in the Department of Development Studies at Midlands State University studying towards a Bachelor of Arts Honours Degree in Development Studies. Currently he/she is carrying out field research which is a requirement for his/her programme. Kindly assist him/her wherever possible. Yours Faithfully

A handwritten signature in brown ink on a yellow background, consisting of a stylized 'M' followed by a series of loops and a long horizontal stroke.

Munhande Constantine

(Email: munhandec@msu.ac.zw)

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