AN EVALUATION OF POLICY INTERVENTION IN WETLANDS MANAGEMENT: THE CASE OF ENVIRONMENT MANAGEMENT ACT AND WETLANDS IN HARARE

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ABSTRACT

Stakeholders in environment and natural resources management are concerned about the increasing human activity on wetlands and the resultant deterioration of these natural resources. The study sought to establish the effectiveness of policy interventions, especially the Environment Management Act, in protecting wetlands in Harare. A total of 14 informants from various stakeholder institutions concerned with wetlands protection were interviewed. These included the Harare City council, Environment Management Agency, government and civil society organizations among others. Interviews were used to collect data from key informants while observation was done on some wetlands sites. The study established that wetlands in Harare are on a decline and this is mainly due to lack of information on the importance of wetlands and how they should be protected as well as the poor enforcement of laws that are in place to protect wetlands. In some cases, the laws are not adequate and have gaps that need to be addressed. It also emerged that despite the presence of laws that protect wetlands, many people, especially residence have little options for survival than undertaking activities for economic gain on wetlands. It also came out clear that those who make decisions that impact on the wetlands have limited information about the consequences of their decisions on these wetlands and the consequent impact on the provision of a range of ecosystem services provided by wetlands. The study recommends that policies in place to protect wetlands be reviewed and harmonized to make them effective in combating wetlands deterioration. This must be accompanied by professionalization and strengthening of the institutions charged with the responsibility of protecting wetlands. The communities also need to be educated on sustainable use of wetlands to balance their needs and the imperative of protecting wetlands. Finally, the research recommended that further research be undertaken to balance the need for land to advance socio-economic needs of residents and investors with the imperative of protecting wetlands.

DECLARATION

I, Jimmy Wilford, do hereby declare that the work here presented, is a result of my work except where acknowledged and that it has never been submitted in any university for the award of any degree.

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STUDENT DATE

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SUPERVISOR DATE

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May God bless even those that I did not mention.

DEDICATION

I dedicate this work to all those that I grew up with at Glengrey Farm, in Glendale.

This is victory to all of us, I have done it and you can do it too.

TABLE OF CONTENTS

ABSTRACT ii
DECLARATION iii
ACKNOWLEDGEMENTS v
DEDICATION vi
TABLE OF CONTENTS vii
LIST OF FIGURES ix
LIST OF APPENDICES x
LIST OF ACRONYM AND ABBREVIATIONS xi
CHAPTER 1 1
INTRODUCTION 1
1.0 Introduction 1
1.1 Background of the Study 1
1.2 Statement of the Problem, ... 3
1.3 Justification of the Study 4
1.4 Research Objectives 6
1.5 Research Questions 6
1.6 Assumptions of the Study 6
1.7 Limitations 7
1.8 Delimitations 9
1.9 Harare Map of Wetlands 10
1.10 Definition of Terms 10
1.11 Conclusion 11
CHAPTER 2 12
LITERATURE REVIEW 12
2.0 Introduction 12
2.3 Defining Wetlands 12
2.4 Different Types of Wetlands 14
2.5 Conceptual Framework 15
2.5.2 The concept of ethical paradox 18
2.5.3 The concept of natural capital stock 19
2.5.4 The concept of equity 20
2.5.5 The concept of eco-form 21
2.5.6 The Concept of integrative management 21
2.5.7 The concept of political global agenda 22
2.6 Importance of Wetlands 23
2.7 Threats to Wetlands 26
2.8 Wise Use of Wetlands 27
2.9 A Historical Perspective on Wetlands Protection 28
2.10 Wetlands Management in Zimbabwe 28
2.11 The Legal and Policy Environment 29
2.11.1 Global level 29
2.11.2 National Level 32
2.11.2.1 The Water Act (Chapter 20:24) 32
2.11.2.2 The Parks and Wildlife Act (Chapter 20:14) 33
2.11.2.3 The Environmental Management Act (Chapter 20:27) 33

2.11.2.4 Statutory Instruments (SI) 7 of 2007 34
2.11.2.4. Government Gazette 35
2.12 Conclusion 35
CHAPTER 3 37
METHODOLOGY 37
3.0 Introduction 37
3.1 Research Design 37
3.2 Population 38
3.3 Sampling of Wetlands 39
3.4 Sample Size 40
3.5 Data Collection 40
3.6 Research Instruments 41
3.6.1 In-Depth Interviews 41
3.6.2 Observations 41
3.6.3 Documents Review 42
3.7 Data Collection Procedure 43
3.8 Data Presentation and Analysis Procedures 43
3.9 Research Ethics 44
3.10 Conclusion 45
CHAPTER 4 46
DATA PRESENTATION AND ANALYSIS 46
4.0 Introduction 46
4.1 Knowledge of Wetlands 46
4.2 The State of Wetlands in Harare 47
4.3 Causes of wetlands destruction 48
4.4 Utilization of Wetlands in Harare 50
4.5 Legal Framework: The EMA Act 51
4.6 Awareness of Legal and Policy Framework Protecting Wetlands in Harare 52
4.7 Environmental Management Act and Wetlands Management 53
4.8 Effectiveness of EMA (Agency) in Protecting Wetlands 55
4.9 Role of Various Stakeholders in Protecting Wetlands 57
4.9.1 City of Harare 57
4.9.2 Civil Society Organizations 58
4.9.3 Academic Institutions 59
4.10 Ministry of Local government, rural and Urban Development 60
4.10 Conclusion 61
CHAPTER 5 62
SUMMARY, CONCLUSION AND RECOMMENDATIONS 62
5.0 Introduction 62
5.1 Summary 62
5.2 Conclusion 64
5.3 Recommendations 64
5.4 Recommendations for Further Research 67
REFERENCES 70

LIST OF FIGURES

Figure 1:	Harare Map of Wetlands	10
Figure 2:	A conceptual framework for sustainable development	18

LIST OF APPENDICES

Appendix A:	Interview guide	73
Appendix B:	Letter to EMA	76
Appendix C:	Letter from college	77
Appendix D:	Wetlands Photos	78

LIST OF ACRONYM AND ABBREVIATIONS

CBO	Community Based Organizations
CSO	Civil Society Organizations
COP	Conference of Contracting Parties
EIA	Environment Impact Assessment
EMA Act	Environment Management Act
EMA	Environment Management Agency
IUCN	International Union for Conservation of Nature
MEA	Millennium Environmental Assessment
NGO	Non-Governmental Organization
TREP	Tropical Resource Ecology Program
US$	United States Dollars
UN	United Nations
UNDP	United Nations Development Programme
UNCED	United Nations Convention on Environment and Development
STRP	Scientific and Technical Review Panel
SARDC	Southern Africa Research and Documentation Centre
SADC	Southern Africa Development Community
WCED	World Commission on Environment and Development
ZELA	Zimbabwe Environmental Lawyers Association
ZINWA	Zimbabwe National Water Authority

CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter sets the context and rationale for this study by providing the background to the research problem and defining the exact problem that the researcher would deal with. Parameters for the study, its objectives and key questions are also outlined. In this chapter the study will justify why such a research as this one is important. Some definitions of key aspects of this research are also provided in order to clarify the boundaries of the research. Overall, the chapter will provide a broad introduction to understanding what the whole research project is about.

1.1 Background of the Study

Until around the middle of the 20th century, wetlands were often perceived as unhealthy, dismal places that were impediments to economic development (Vleisis, 1997). However, new scientific knowledge and environmental awareness has awakened a global consciousness to protect and celebrate wetlands as central to good environmental stewardship with socio-economic benefits. According to Whitlow (1983), wetlands are considered one of the most productive ecosystems in the world and provide numerous beneficial ecosystem services to humans and wildlife. The view that wetlands are useful to human life is gaining currency, not only among scholars of environmental management but also among community and political leaders and citizens as well. Wetlands, especially in urban areas contribute to water

purification, reducing flooding and ground water recharge, among other useful roles that such natural resources play.

However, despite this known importance, observation and media debate indicates that, due to human activity, wetlands are under threat in Harare and other urban setups, in Zimbabwe and generally across the world, (Boyer and Polasky, 2004). Wetland destruction in urban areas occurs primarily through commercial and residential development and establishment of road infrastructure.

There could be several reasons as to why human activities on wetlands continue at a time when the impact of such damage to the resource may have to humanity, especially urban dwellers is being highlighted. One reason could be that those who make decisions that impact upon wetlands do not have comprehensive and accurate information about the consequences of their decisions on such wetlands and the consequent impact on the provision of a range of ecosystem services provided by wetlands. What we typically see especially in Harare is what Turner and Jones (1991) refer to as interrelated market and intervention failures, which derive from a fundamental failure of information, or lack of understanding of the multitude of values that may be associated with wetlands. The information problem results because politicians and the general public insufficiently understand the role and functions of wetlands as well as the indirect consequences of land use, water management, agricultural pollution, air pollution and infrastructure for the quality and sustainability of wetlands (Turner 2000).

Again, it could be possible that the rapid growth in terms of urban population in cities such as Harare is outstripping supply of suitable land for socio-economic activities of the growing citizenry. In such a case, both the residents of the cities and

the authorities may be left with fewer options but to use wetlands for purposes that endanger these wetlands.

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. In the absence of regulations, most private landowners will decide to fill wetlands because the private benefits from development is typically far greater than the value captured from preserving the wetland. Urban agriculture has been common in Harare and much of it takes place on the wetlands. In addition, there has been a recent increase in construction taking place on the wetlands in Harare which has been a major concern of stakeholders. All these are evidence of growing human activities on wetlands which could be a sign of limited land in Harare.

1.2 Statement of the Problem,

Wetlands are among the Earth's most productive ecosystems, providing a diverse array of important ecological functions and services, ranging from flood and flow control to ground-water recharge and discharge, water quality maintenance, biodiversity, carbon sequestration and other life-support functions. Due to their role in the provision of water, regulating flows, and improving water quality, wetlands are increasingly perceived as an important component of water infrastructure (Emerton and Bos 2004). The supply of freshwater to human populations is recognized as one of the foremost natural benefits of wetlands (MEA Report, 2005). McCartney and Acreman (2009) noted that inlands wetlands provide the principal supply of freshwater for almost all-human use. This is true for the City of Harare. Harare was built on a wetland and a lot of rivers flows from Harare making the

protection of wetlands imperative. Noting the importance of the wetlands, the government of Zimbabwe passed a legislation that provides for the protection of wetlands to consolidate the past legislations. 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'. The Minister of Environment having noted the continued threat of wetlands in Harare despite the existing legislations issued a general notice in the government gazette on the 27th of July 2012, declaring protection to 26 wetlands in Harare. However despite all these legislations, wetlands in Harare remain under threat from various human activities especially construction of huge infrastructures and urban agriculture.

1.3 Justification of the Study

The continued destruction of wetlands in Harare is a cause of concern. Attempts have been made by several stakeholders to ensure protection of the wetlands but the human activities that threaten the future of the wetlands is quite common in Harare. Accordingly, this study is important to stakeholders in environment management in various ways.

First the study shall assist the researcher to gain an in-depth understanding of the factors that are allowing the continued degradation of the wetlands through different human activities despite the existing policies. In the process, the researcher will contribute to the body of knowledge on wetlands management in Zimbabwe in

general and Harare in particular by recommending ways of wetland management through policy. The Environmental Management Agency, Ministry of Local Government, Rural and Urban Development and the City of Harare are the key policy actors that stand to benefit in this case.

Effective wetland management if achieved is very important to the livelihoods of the residence of Harare in several ways especially on the availability of clean water. City of Harare is currently using 18 different chemicals to treat water, this again is being linked to the failure of wetlands to play their ecological function of water purification due to some human activities. As a downstream effect, successful policy formulation and implementation will cut costs in water purification and deliver potable water for the residents of Harare.

Besides the policy makers, other players in the wetlands management will make use of the research findings to establish policy strategies for promoting wetlands management effectively. When there is combined effort in protecting wetlands from stakeholders and policy makers, Harare residents are most likely to get the best services from the available wetlands above the water supply.

The Harare Municipality together with residents are set to benefit from this study as the findings on the obstacles of wetlands management will assist them in their planning, particularly on land use and regulating such use.

Lastly, the researcher hopes to assist other researchers with background literature for pursuing various wetlands management researches in Harare and across the country.

1.4 Research Objectives

The research will specifically seek to:

1. To describe the human activities on the wetlands in Harare;
2. To ascertain policy provisions of the Environmental Management Act (EMA Act) in protecting wetlands;
3. To evaluate the existing policy provisions of the EMA Act in protecting wetlands in Harare.

1.5 Research Questions

The following questions must be answered by this research in order to get clarity on the continued destruction of wetlands in Harare.

1. Which human activities are taking place on the wetlands in Harare?
2. What are the provisions of the EMA Act on protecting wetlands?
3. What suggestions do stakeholders have with regard to wetlands management in Harare to ensure improved policy intervention?

1.6 Assumptions of the Study

This research was conducted with the following assumptions:

i. That access to relevant reports including the Environment Impact Assessment (EIA) Reports for projects being done on wetlands would be made available without challenges;
ii. That the respondents during the survey, especially the key informants would provide truthful and faithful responses in order for the study to come up with meaningful recommendations;

iii. That the political polarization in the country that is more evident during election period would not affect the data collection especially when taking photos of the activities on the wetlands;

iv. That all key informants to be identified would give permission to be interviewed and have their opinions shared in the report.

1.7 Limitations

The researcher encountered various limitations during the period when this study was being done. These limitations are factors such as restrictions, weaknesses, constraints or shortcomings that may affect the study but are beyond the control of the researcher. Accordingly the researcher came up with some strategies to address the identified limitations.

One major challenge encountered was the failure of the researcher to get the Environmental Impact Assessment of all the projects in Harare that are being carried out on the wetlands. The researcher had limited resources and could not afford the requested fee of USD 250 to access each report in order to analyze the reports at the EMA offices. The researcher however managed to peruse through only one report for the National Sports Stadium (Belvedere) Wetland in the office of one of the key-informant during an interview visit. The researcher was not allowed to carry the report for a detailed analysis as the document was said to be very sensitive.

This research was carried out during the period the Zimbabwean political environment was in the election mode. The talk of the general elections to conclude the Government of National Unity was at its peak. Wetlands have generated a lot of

interest and politicians have played their part in authorizing development on such places. As a result, the researcher was viewed with suspicion every time a visit would be made to some government offices enquiring for relevant information or seeking to validate some information. For instance, it was very difficult to be granted an interview with the senior employees of Environment Management Agency (EMA), despite following all the channels. Even junior staffs were scared to grant the researcher an interview without permission from the head of the institution. The researcher managed to counter this by continuously visiting the offices of EMA with the letter from the University accompanied by a cover letter. This resulted in the researcher extending the data collection period, as it took long to have interview with EMA personnel. This was because it was going to be difficult to conclude this study without collecting data from EMA. Almost the same challenges were faced with the Town Planning Department of the City of Harare. Again, the researcher made use of some Wetlands Conservation meetings that were being organized by Humanitarian Information Facilitation Centre (HIFIC) to meet with the respective officials and councilors from the City of Harare to answer questions on the wetlands management.

This study again had limited time and resources. The researcher is a fulltime employee and the timelines in which to finish the research were so limited. Besides the time limitation, the researcher had limited resources to visit all the wetlands in Harare in order to observe what is happening and probably take some photos. In view of that, the researcher worked during the weekends and evenings in order to ameliorate the limitations on time. The researcher did convenient and purposive

sampling in order to come up with a sample of wetlands to visit as there was limited time and resources.

In trying to establish the reasons for continued human activities on the wetlands despite the presence of guiding legislation, the researcher faced problems of respondents who spoke with emotions especially those form Community Based Organizations (CBOs). In order to avoid overgeneralization from such interviews, the researcher validated the information from documents with respective authorities.

1.8 Delimitations

This study concerned itself with:

- Human activities on 26 Wetlands in Harare as denoted by the government gazette on the 27th of July 2012.
- The policy provisions on the utilization of wetlands in general but specifically looking at Harare wetlands.
- The definition of wetlands provided by the Ramsar Convention and the EMA Act (Chapter 20: 27).

1.9 Harare Map of Wetlands

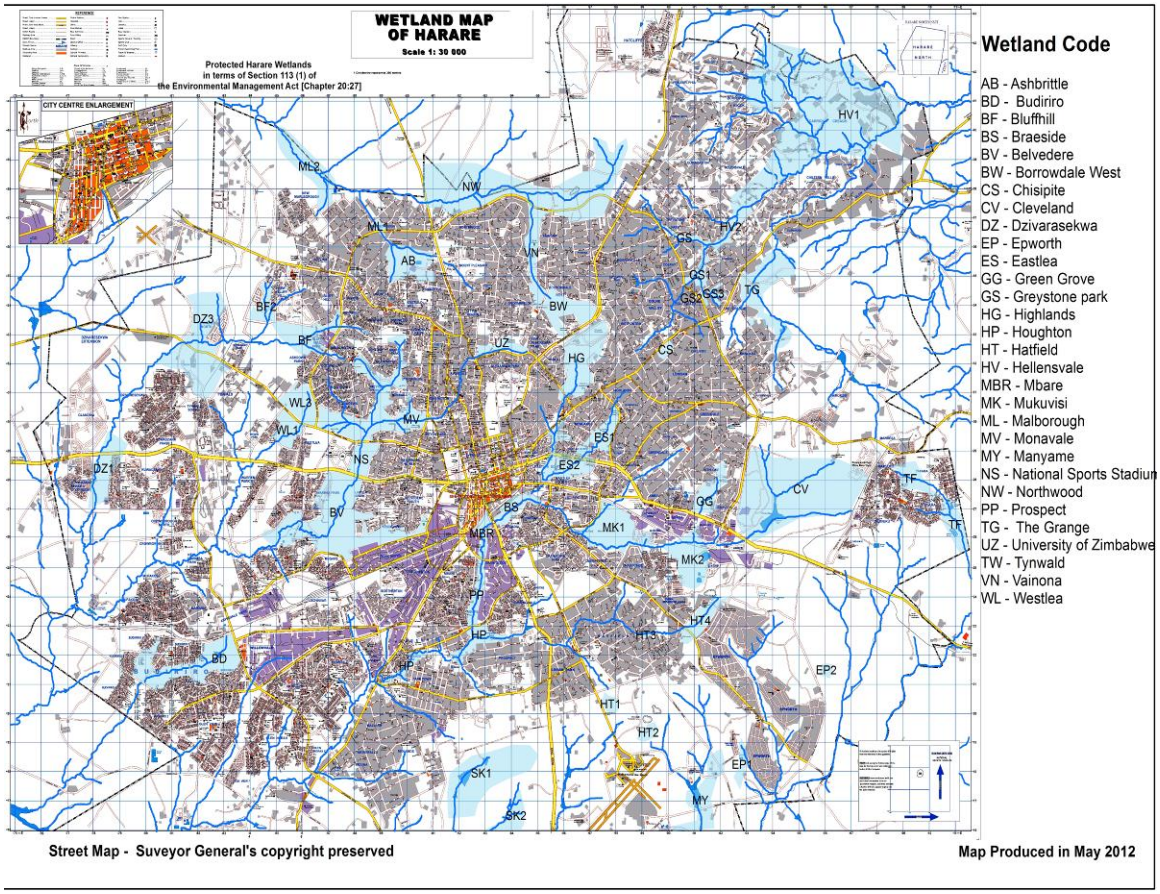

Figure 1: Wetlands Map of Harare

1.10 Definition of Terms

Wetlands

An area of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and includes riparian land adjacent to the wetland.

Ecosystem services

The benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such

as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious, and other nonmaterial benefits.

Sustainable development

Development, which meets the needs of the present without compromising the ability of future generation to meet their own, needs, (WCED, 1987).

1.11 Conclusion

This chapter looked at the background of wetlands in general and the various functions of the same to the society. The background to the problem was also shared to conceptualize the problem and put the objectives of the study into perspective. The next chapter is going to review the researches done by other scholars in the wetlands management, threats and their importance to the human beings. The literature review was done guided by the sustainable development conceptual framework.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

African wetlands are a very important source of natural resources upon which both rural and urban economies depend. Despite their importance, wetlands throughout Africa are being modified and reclaimed. This chapter reviews related literature to the management of wetlands. In order to put into perspective the research topic, the sustainable development conceptual framework in the wetlands management was explored. Other studies that have been done on wetland management and utilization were reviewed with the view of establishing gaps to inform this study. This research therefore focused on the gaps identified on this topic. This chapter looked at the definition of the wetlands, different types of wetlands, the 'wise use' of wetlands, the historical perspective of wetlands protection, the threats to wetlands, the wetland management in Zimbabwe and the importance of wetlands. The conceptual framework of the study was also discussed together with the legal and policy framework in the management of wetlands.

2.3 Defining Wetlands

There is some disagreement among scientists and scholars on what constitutes a wetland, partly because of their highly dynamic character, and partly because of difficulties in defining their boundaries with any precision (Mitsch and Gosselink, 1993). Dugan (1990) notes that there are more than 50 definitions in current use. According to the Ramsar Convention (1971), wetlands are "areas of marsh, fen,

peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters".

The United States Fish and Wildlife Service defines wetlands as; lands transitional between terrestrial and aquatic systems where the water is usually at or near the surface or the land covered by shallow water (Cowardian *et al.,* 1979). On the other hand, the Commission on Environment (Federal Register 1982) and the Environmental Protection Agency (Federal Register 1980) jointly define wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. These definitions might be lacking scientific exactness but however convey much of the essential character of wetlands as well as implying the complexity involved. It however does not provide guidance on the generic characteristics of wetlands that influence how wetlands actually function. Any integrated wetland research approach has somehow to make compatible the very different perceptions of what exactly is a wetland system, as seen from a range of disciplinary viewpoints (Maltby *et al.,* 1994, 1996).

The Zimbabwe Environment Management Act (Chapter 20:27) defines wetlands as any area of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and includes riparian land adjacent to the wetlands. The EMA (Act) was enacted in 2002 and the definition is guided by the Ramsar Convention (1971) definition with an addition to

include the land which is adjacent to the wetlands. This study was guided by the definition provided for by the EMA (Act).

2.4 Different Types of Wetlands

A number of wetland classifications exist in the literature, and just as some disagreements on definitions of wetlands exist. There is also no universally agreed classification of wetland types. Wetlands have been classified according to their sources of water, nutrients, hydrological regime, soil type, vegetation structure, and so on. Roggeri, (1995) argues that differences between these classifications stem from reasons and regions for which the classifications have been developed. Dugan (1990) also concurs that there is no universally agreed classification of wetland types. Classifications vary greatly in both form and nomenclature between regions (Cowardin *et al*. 1979). Roggeri (1995) characterizes wetlands according to geomorphological units (the main sources of water and nutrients) and ecological units, in particular vegetation. Another classification of wetlands is through soil and terrain characterization (Koohafkan *et. al.,* 1998).

Although they differ on the definition of the wetlands, they generally agree on the features of the wetlands. Some features of wetlands, nonetheless, are clear like the predominance of water for some significant period of time and the qualitative and quantitative influence of the hydrological regime that characterize and underlie the development of wetlands. A dambo or vlei is an important type of wetland in Zimbabwe. It is low-lying, marshy grassland, covered with water during the rainy season, and even though it may seem to be dry during the winter season and droughts, it is actually storing water under the ground, which it releases slowly into

the streams and rivers. This type of wetland is widely distributed in Zimbabwe and covered an estimated area of 1.28 million hectares in the year 1992 is widespread within the boundaries of Harare City (Matiza and Crafter, 1994). Other types of wetlands include: mangroves, swamp, marsh, bog, fen, wet meadow, Salt/blackish marsh, shallow water, Freshwater and Freshwater woodlands.

2.5 Conceptual Framework

The study used the sustainable development conceptual framework. It is generally accepted that sustainable development calls for a convergence between the three pillars of economic development, social equity and environmental protection. The conceptual framework was used to analyze the continued human activities on the wetlands in Harare. On one hand sustainability is seen as a characteristic of a process or state that can be maintained indefinitely, while on the other hand development is environmental modification, which requires deep intervention in nature and exhaust natural resources (Jabareen, 2004). Sustainability originally belongs to the field of ecology, referring to an ecosystem's potential for subsisting over time with almost no alteration. Roboratti (1999) postulated that when the idea of development was added to sustainability, it was no longer looked at from the environmental point of view but from that of society (1987) and the capital economy. This paradox is represented in the Brundtland Report which deemphasizes the environment while underlining human needs to be realized through development. Accordingly, the concept of sustainable development aims to mitigate and moderate between sustainability, which is seen as the environment 'logo', and development seen as an economic 'logo'. This study used the sustainable development conceptual framework to

analyze the continued human activities on the wetlands in Harare. The wetlands in Harare are on demand for economic and social utilization putting their protection under threat. As such, sustainable development mechanism will reduce the tension between the development goals and the environment protection goals.

According to the World Commission on Environment and Development (WCED), (1987) sustainable development is development which meets the needs of the present without compromising the ability of future generation to meet their own needs. This was emphasized in the, Our Common Future Report done in 1987. This report was accepted by The United Nations General Assembly and the heads of states set out the principles of sustainable development at the United Nations Conference on Environment and Development (UNCED), which was held in Rio de Janeiro, Brazil in 1992. The adoption of the Agenda 21 during this summit created unprecedented global partnership to reverse the environment degradation of the planet.

As argued by Sachs (1993), sustainable development has attracted such a large following because it seems to hold out the promise of bringing about a rapprochement between ecological (sustainability) and economic (development) interests. In his paper on conceptual framework for sustainable development, Jabareen (2005) emphasized 7 keys pillars of the sustainable development concepts in order to address the tensions that are brought by development goals. The 7 pillars as shown on Figure 2, were developed around the ethical concerns. The following are the 7 pillars of sustainable development;

i. the concept of ethical paradox,
ii. the concept of natural capital stock,

iii. the concept of equity,

iv. the concept of eco-form,

v. the concept of integrative management,

vi. the concept of utopianism and,

vii. the concept of political global agenda.

The seven pillars and the definition given of sustainable development are critical to the Zimbabwean situation where wetlands are under threat from human activity especially in pursuit of economic and human development initiatives. The sustainability development framework brings to the fore questions on how development on wetlands in Harare can be meaningful and provide long lasting benefits to the residents of Harare. The global debate in sustainability forums today is whether developing countries and cities, Harare included, should develop in ways that give due regard to limiting environmental footprint when their predecessors were never bound by such restrictions. Global pressure to ensure sustainable development may be pushing national and local authorities to have legal and policy frameworks for environmental stewardship when they are not prepared to do so. In 2011, Zimbabwe ratified the Ramsar Convention even though they have been a signatory since 1985. The ratification is a clear sign of the appreciation of the value of the wetlands and the need to be part of the globe in the protection of the wetlands.

2.5.1 Key Concepts of Sustainable Development

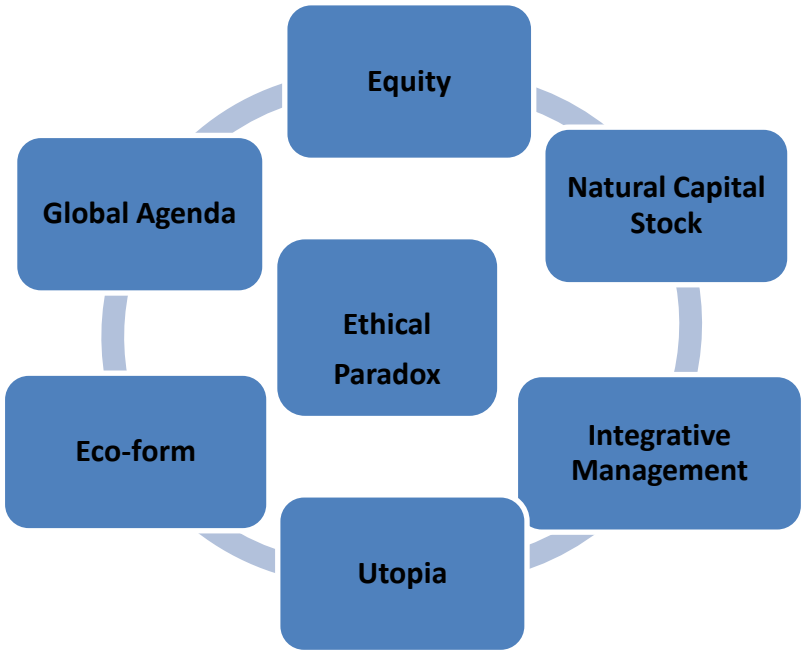

Figure 2: Seven (7) key concepts of Sustainable Development, ***Adopted from Jabareen (2006)***

2.5.2 The concept of ethical paradox

Many scholars question the ethics behind the concept of sustainable development (Jabareen, 2005). Kothari (1992) argued that sustainability is an empty term, because the current model of development destroys nature's wealth and hence is non-sustainable. He further stated that development is ecologically destructive because it is ethically vacuous, not impelled by basic values, and not anchored in concepts of rights and responsibilities. However, Geisinger (1999) on the other hand, noted that while there might be no agreed views on sustainable development, he however conceived that there is tension between the goals of economic development and environmental protection, with preference for the goals of the economic growth. This

perhaps confirms why and how construction is taking place on Harare wetlands despite the provisions of the policies, which seeks to protect them. In the conclusion of the Our Common Future report, it was noted that human survival and well-being could depend on success in elevating sustainable development to a global ethics (WCED, 1987). As a result, many sustainable development approaches were developed around ethical concerns of the society.

2.5.3 The concept of natural capital stock

The natural capital stock is defined as the stock of all environmental and natural resource assets, from oil in the ground to the quality of soil and groundwater, from the stock of fish in the ocean to the capacity of the globe to recycle and absorb carbon (Pearce and Turner, 1990). Within the discourse on sustainable development, constant natural capital is frequently referred to as a criterion for sustainability. Wetlands in Harare are natural assets, which can be modified or have their reproduction enhanced by humans even though humans might take long to create them. As argued by Hinterberger, Luks, Schmidt-Bleek (1997) the concept of natural capital is helpful to illustrate the problems that arise when society consumes capital rather than income. Many scholars argue that natural capital is a powerful concept worthy of retention by ecological economists. Kohn and Gowdy (2001) argue that sustaining something that exists in an environment of permanent change is both conceptually and operationally challenging. Khan (1995) postulated economist were traditionally concerned the efficient use of resources but rarely worried that some resources might be in short supply and if exploited indiscriminately might in fact become extinct and limit the very same growth for which resources were tapped in

the first place. His postulation follows the emerging believe that development at the cost of the environment can take place only to a certain point otherwise it can only be for short term. The same is very true to the management of wetlands in Harare. All the development that might take place on the wetlands now, need to be done in the context of sustainable development that includes environmental protection. While it is true that Harare was built on a wetland around Mukuvisi River, it is important to note that proper planning was done to ensure that future generation can still make use of the facilities.

2.5.4 The concept of equity

The concept of equity represents the social aspects of sustainable development. As argued by Haughton (1999) the social dimension is critical since the unjust society is unlikely to be sustainable in environment or economic terms in the long run. In this sense, sustainable development might be seen as a criterion for environmental justice. Wherever in the world environmental despoliation and degradation are happening, they are almost always linked to questions of social justice, equity, rights and people's quality of life in the widest sense, (Agyeman, Bullard and Evans, 2002). The most frequently quoted definition of sustainable development, which comes from WCED (1987), emphasizes the equity issue between generations. According to literature, there are types of equity that is intergenerational and intragenerational. Intergenerational equity refers to the fairness in allocation of resources between current and future generations while as intragenerational equity refers to fairness in allocation of resources between competing interests at the present time. However, Stymne and Jackson (2000) argue that the concept of intra-

generational equity has received less attention in the literature on sustainable development, and particularly that on ecological economics.

2.5.5 The concept of eco-form

This dimension represents the ecologically desired form and design of the human habitat such as urban spaces, buildings, and houses. Review of the urban literature suggests that sustainability could be achieved where planning takes place at the local and regional levels to enable built environments and buildings to function in more sustainable way (Jabareen, 1995). It is further viewed that environmental problems also result from a city's design. In the same vein, Edwards (1999) argues that, architects have a larger share of responsibility for the world's consumption of fossil fuel and global warming gas production than any other professional group. In Harare, the architects play a crucial role when constructing buildings on wetlands through their designs, which can result in limited damages to the wetlands. Proper planning will result in channels being put underground to allow water to flow to other streams as what happens on an undisturbed wetland.

2.5.6 The Concept of integrative management

It is believed that in order to achieve sustainability and ecological integrity, we need integrative and holistic management approaches (Jabareen, 2005). More importantly, it is argued that poverty and environmental degradation are interlocking global crises, and that we do not face the choice between 'environment' or 'development', but rather the challenge to find ways of integrating these to achieve 'sustainable development' (Dodds, 2000). From a policy perspective, the concept of integrative management draws attention to the importance of maintaining a safe minimum

standard for all living and non-living assets necessary to maintain ecosystem functions and life support systems, along with at least representative forms of all other living natural assets. This concept represents the integrative view of aspects of social development, economic growth and environmental protection. The Our Common Future (WCED, 1987) report challenged the prevailing view that economic objectives such as poverty alleviation and economic growth should take precedence over environmental concerns, argued instead that environmental health is a precondition of social and economic success. This concept and lenses are imperative to the management of wetlands in Harare as the threats are more from the economic pressures. The Chapter 8 of Agenda 21 (UN-CED, 1992) made an interesting observation that 'the prevailing systems for decision-making in many countries tend to separate economic, social and environmental factors at policy, planning and management levels influencing the actions of all groups in society affecting the efficiency and sustainability of development'. This is reflected in Harare when not all considerations are done when making a decision despite the fact that such decision affects all highlighted aspects.

2.5.7 The concept of political global agenda

This dimension represents a new global discourse that has been reconstructed and inspired by the ideas of sustainable development. Since the 1990s, sustainable development has become the central adage of environmental policies around the globe and the environmental discourse has been globalized and transcended national boundaries. Zimbabwe as part of the global village, the wetlands protection is also guided by what is happening at global level. As Zimbabwe is part of the Ramsar

Convention and has since enlisted 7 wetlands to the List of Internationally Recognized Wetlands in the World. The Rio Summit (1992) and the Johannesburg Summit (2002) on World Summit on Sustainable Development (WSSD) were significant milestones which set a new global agenda for sustainable development discourse.

2.5.8 The concept of utopianism

This concept envisages a society where justice prevails, people are perfectly content, people live and flourish in harmony with nature and life moving along smoothly without abuses or shortages (Jabereen, 1995). This concept portrays a society based on the principle of a completely stable ecological state. The critical feature of the utopian view is the change of attitude by the society, which will result in non-competitive and non-materialistic leading to harmony with nature.

2.6 Importance of Wetlands

Many ecosystem services are forms of "public good," accruing outside monetary systems. As a result, they very often go unrecognized and are often undervalued. The valuation of wetland's ecological services is a relatively recent phenomenon. Mistch and Gosselink (1986) noted that historically, wetlands were viewed as a waste of valuable land that could only be 'improved' through drainage and destruction. Attempts to value some wetland ecosystem services have been made at both the micro and macro scales (Barbier et al. 1997; Mitsch and Gosselink 2000; Terer *et al*. 2004; Schuyt 2005; Emerton 2005; Adekola et al. 2008). Wetlands are considered one of the most productive ecosystems in the world and provide numerous beneficial

ecosystem services to humans and wildlife. According to Whitlow (1983) the reliance on dambo agriculture is significant especially in areas of low rainfall, below 1000 mm/year. Wetland agriculture is important for poverty reduction and food security in many developing countries (Frenken and Mharapara 2002). It is important to note that the importance and value attached to the wetlands differ from where such a wetland is located. In Zimbabwe, wetlands in rural areas and those in urban areas are viewed and valued differently.

Dugan, (1990) argued that wetlands are valued for their functions, products and attributes. Wetlands have the following functions: groundwater recharge, groundwater discharge, flood control, erosion control, sediment/toxicant retention, nutrient retention, biomass export, storm protection, microclimate stabilization, water transport as well as recreation. Wetlands can also be valued for their products such as; wildlife resources, fisheries, forest resources, forage resources and agriculture resources. Lastly, according to Dugan (1990), wetlands can be valued because of its attributes like, biological diversity, aesthetic values and ethnic values. Groundwater recharge is an important wetland function in some places. For example, the Hadejia-Nguru wetlands in northern 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 (Hollis *et al*: 1993). In Harare, wetlands act as catchment areas for rivers that supply drinking water to the city of Harare.

Wetlands are very effective at improving water quality through processes of sedimentation, filtration, physical and chemical immobilization, microbial interactions and uptake by vegetation (Kadlec and Knight, 1996). Consequently, wetlands can be very important in the treatment of polluted water, particularly that

originating from dispersed sources, as is common in agricultural landscapes. In addition, wetlands provide ecological processes enabling the extraction of goods and services in the form of natural resources such as water, fish and other edible animals, wood, and energy, and they provide the natural surroundings for recreational activities (Larson *et al*. 1989; Barbier 1991, 1997; Brouwer *et al*. 1999; Woodward and Wui 2001).

Chibwela (1991) argues that wetlands are important in Zimbabwe for the following reasons:

a) Water is relatively scarce in Zimbabwe and wetlands serve as reservoirs for dry season supply.
b) Wetlands sites are generally small on size and are consequently highly vulnerable, but they are widely distributed in Zimbabwe. If conserved, their potential for diversified utilization would be great.
c) Although Zimbabwe usually receives sufficient rainfall, it nevertheless has a high risk of drought. The water stored in wetlands helps minimize these risks.
d) Zimbabwe is deficient of fish protein and wetlands are major areas where fish can be produced and
e) The government has encouraged the expansion of cash crop production which would need reliable sources of water for irrigated agriculture

From the various scholars, it is evident that some of the literature disregards some of the uses of wetlands. There seem to be more emphasis on uses that would make protection or leaving the wetlands untouched a priority. Scholars are not forthcoming on some of the economic and social uses of wetlands thereby creating some challenges in the management of wetlands.

2.7 Threats to Wetlands

Wetlands are globally threatened by various man-oriented activities. According to Barbier (1993), more than half of the world's wetlands have disappeared since 1900. Demographic growth, rising poverty and severe economic stress are factors put forward as increasing pressure on wetlands in Africa (Matiza and Chabwela, 1992). This is often compounded by drought, which, as a recent study has pointed out, may be caused by industry and power generation in Europe and North America (Nowak, 2002). Wetland loss in Africa is furthermore enhanced as the benefits of wetlands are often not shared by those who own the property, (Matiza and Chabwela, 1992). It is argued that private landowners derive higher profits from wetlands conversion to other uses like construction. The public benefits of wetlands, like recreation are not valued mainly by the landowners.

The other threats as noted by Adams (1989 and Dixon *et al.,* 1990) are the dam's construction, which alter the hydrology of catchment areas. Wetlands all over the world have been lost or are threatened in spite of various international agreements and national policies. 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.)

Accordingly, the primary indirect drivers of degradation and loss of rivers, lakes, freshwater marshes, and other inland wetlands (including loss of species or

reductions of populations in these systems) have been population growth and increasing economic development. On the other hand, the primary direct drivers of degradation and loss include infrastructure development, land conversion, water withdrawal, pollution, overharvesting and overexploitation, and the introduction of invasive alien species.

At global level, wetlands are under heavy pressure. Despite the increasing recognition of the need to conserve wetlands, losses have continued. One main reason is that wetlands throughout the world are considered by many to be of little or no value, or even at times to be of negative value. This lack of awareness of the value of conserved wetlands and their subsequent low priority in the decision-making process has resulted in the destruction or substantial modification of wetlands, causing an unrecognized social cost, (Turner *et al.* 2000). Wetlands have been lost or degraded because of disruption of the natural processes by agricultural intensification, urbanization, pollution and dam construction and other forms of intervention in the ecological and hydrological systems.

2.8 Wise Use of Wetlands

The wise use of wetlands meant "their sustainable utilization for the benefit of human kind in a way compatible with the maintenance of the natural properties of the ecosystem" (Ramsar COP3, 1987). However, the Scientific and Technical Review Panel (STRP) which is a team of experts that provides advice to Ramsar, proposed updating the definition to mean "the maintenance of their ecological character within the context of sustainable development, and achieved through the implementation of ecosystem approaches." The Ramsar Convention's Contracting

Parties (COP) formally considered the revised definition in November 2005. However, wetlands can be managed in their more or less natural state for certain objectives such as fish and wildlife enhancement, aquaculture production, water quality improvement, and flood control. Agricultural activities have had a considerable impact on natural ecosystems in many parts of the world. The concept of sustainability is a very challenging concept because a criterion varies with goals of sustainability (Pretty, 1995). Accordingly this has resulted in disputes and tensions between development goals and environmental goals.

2.9 A Historical Perspective on Wetlands Protection

Wetlands are the only single group of ecosystems to have their own international convention. Around 1960s, the call for wetland protection gained momentum primarily because of their importance as habitat for migratory species. The Ramsar Convention, which came into force in 1975, is an intergovernmental conservation treaty, where a framework for international cooperation was provided for the conservation of wetland habitats to ensure their conservation and wise use. As at p March 16, 2013, 165 countries were Ramsar Contracting Parties, with 2 103-wetland sites included in the Ramsar List of Wetlands of International Importance. (http://www.ramsar.org/in- dex.html). Zimbabwe has seven (7) wetlands on the list of which Harare has two (2).

2.10 Wetlands Management in Zimbabwe

Wetlands cover about 4.6% of Zimbabwe's land (Whitlow, 1985). Vleis are the most widespread form of wetlands in Zimbabwe as they cover about 3.6% of the land area (Chenje *et al.,* 1998; Whitlow, 1985). Zimbabwe wetlands are small in size but very

diverse and they include dambos, flood plains, riparian systems, pans and artificial impoundments (Matiza and Crafter, 1994). It is again argued that wetlands in Zimbabwe have lost most of their functions, products and attributes (Matiza and Crafter, 1994).

Threats to Zimbabwe wetlands systems are deforestation of watersheds, overgrazing, eutrophication, pollution, land tenure and dam developments. In Zimbabwe, wetland ecosystems had and still have a strong link with the development of the society and a broad range of human activities. In the history of human settlement, adequate water supply is an important factor, thus most large settlements in Zimbabwe like Harare are located in or near wetlands (IUCN, 1997). Harare, the capital city of Zimbabwe, is located on a network of streams (including the Marimba and Mukuvisi streams) that drain into Manyame River. This has brought some complexities on the management of the wetlands.

2.11 The Legal and Policy Environment

2.11.1 Global level

The Convention on Wetlands of International Importance Especially as Waterfowl Habitat, more commonly known as the Ramsar Convention (1971), is one international frameworks used to protect wetlands. The Ramsar Convention was concluded in Ramsar, Iran, in February 1971. The convention was as a result of more than eight years of efforts by nongovernmental organizations (NGOs) and concerned countries (Gardner and Connolly, 2007).

Globally, the Ramsar Convention (1971) aims at preventing the loss and degradation of wetlands worldwide and to ensure that they are used wisely and sustainably while

conserving the biodiversity values and ecosystem services. The Convention's mission is "the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world"**.** To accomplish the first obligation, Article 2 of the Ramsar Convention calls on each Party to "designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance." The Ramsar Convention suggests that a wetland may be listed based on its "international significance in terms of ecology, botany, zoology, limnology or hydrology".

The global extent of wetlands is estimated to be in excess of 1,280 million hectares (1.2 million square kilometers) but it is well established that this is an underestimate. The Ramsar Convention has the following three pillars under which the Parties have committed to:

a. Work towards the wise use of all their wetlands through national land-use planning, appropriate policies and legislation, management actions, and public education;

b. Designate suitable wetlands for the List of Wetlands of International Importance ("Ramsar List") and ensure their effective management; and

c. Cooperate internationally concerning trans-boundary wetlands, shared wetland systems, shared species, and development projects that may affect wetlands.

The Conference of the Contracting Parties (COP) meets every three years and promotes policies and guidelines to further the application of the Convention. The

Standing Committee, made up of Parties representing the six Ramsar regions of the world, meets annually to guide the Convention between meetings of the COP. The Convention get guidance on key issues from the Scientific and Technical Review Panel (STRP).

The Ramsar List was established in response to Article 2.1 of the Convention on Wetlands (Ramsar, Iran, 1971), which commits that, "Each Contracting Party shall designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance, hereinafter referred to as "the List" which is maintained by the bureau (secretariat of the Convention) established under Article 8." Wetlands included in the List acquire a new status at the national level and are recognized by the international community as being of significant value not only for the country, or the countries, in which they are located, but for humanity as a whole.

The Convention establishes that "wetlands should be selected for the List on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology." Over the years, the Conference of the Contracting Parties has adopted more specific criteria interpreting the Convention text, as well as an Information Sheet on Ramsar Wetlands and a Classification system of wetland type.

Zimbabwe on the 3rd of January 2013 designated the following wetlands as part of Ramsar List: Cleveland Dam; Chinhoyi Caves; Driefontein Grasslands; Lake Chivero; Manyame; Mana Pools; Monavale Wetland and Victoria Falls National Park. Out of the 7 wetlands on the Ramsar list, 3 are from Harare (Cleverland Dam, Monavale and Lake Chivero and Manyame).

2.11.2 National Level

Strong environmental awareness and a commitment to environmental management and control is a legacy in contemporary Zimbabwe from pre-independence (Bowyer-Bower 1996). The government of Zimbabwe has enacted several laws, which protect wetlands and dambos. In a paper presented by Dorothy Katerere during the Zimbabwe Wetlands Conference in 1995, the following legal provisions were highlighted;

2.11.2.1 The Water Act (Chapter 20:24)

Generally this Act provide for the development and utilization of the water resources of Zimbabwe; to provide for the establishment, powers and procedures of catchment councils and subcatchment councils; to provide for the grant of permits for the use of water; to provide for the control of the use of water when water is in short supply; to provide for the acquisition of servitudes in respect of water; to provide for the protection of the environment and the prevention and control of water pollution; to provide for the approval of combined water schemes and to provide for matters relating to dam works. Specifically, Section 22 (1) of the Water Act (Chapter 20.24) prohibits unauthorized operations, which interfere with the bed, banks or course of a public stream or any swamps or marshes forming the source of the public stream or found along its course. Section 160 of the Act provides for the appointment of River Boards to supervise the regulation, storage, distribution and use of water from any public stream, within an area to be fixed by the Minister. Accordingly the Act posits that permission is required for "secondary use". There are also water restrictions on the use of "public water" which includes water in the wetlands. These restrictions

were imposed to address concerns that using water in the wetland would diminish downstream river flows, limit access to primary use water by riparian populations and infringe upon existing water rights.

2.11.2.2 The Parks and Wildlife Act (Chapter 20:14)

This Act amongst other things provides for Parks and Wild Life Board. It also provides for

i. the establishment of national parks, botanical reserves, botanical gardens, sanctuaries, safari areas and recreational parks;
ii. the provision for the preservation, conservation, propagation or control of the wild life, fish and plants of Zimbabwe;
iii. the protection of natural landscape and scenery;
iv. the conferring of privileges on owners or occupiers of alienated land as custodians of wild life, fish and plants; to give certain powers to intensive conservation area committees; and
v. to provide for matters incidental to or connected with the foregoing.

Part of the natural landscapes that are protected by the Act includes dambos, which are a type of wetland common in Zimbabwe.

2.11.2.3 The Environmental Management Act (Chapter 20:27)

Generally, this Act provide for 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 further 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.

2.11.2.4 Statutory Instruments (SI) 7 of 2007

As a way of strengthening the sustainable management of the environment through the EMA (Act), the government of Zimbabwe came up with an SI 7 of 2007 to provide for more regulations in the implementation of the Act. Statutory Instrument 7 of 2007, Environment Impact Assessment and Ecosystem Protection Regulations section 20(1) provides that: "No person shall, without a license issued by the Agency, the proof whereof shall lie upon him or her, to reclaim or drain, drill or make a tunnel, introduce any exotic animal or plant species, cultivate, or license the cultivation of, or destroy any natural vegetation on, or dig up, break up, remove or alter in any way the soil or surface of:

a) Wetland; or
b) Land within thirty meters of the naturally defined banks of a public stream; or

c) Land within the thirty meters of the high flood level of any body of water conserved in artificially constructed water storage work on public streams; or

d) Bed, banks, or course of any river or stream.

2.11.2.4. Government Gazette

Zimbabwe ratified the Ramsar Conversion in 2011 and started making more efforts to protect wetlands despite strong threats especially in urban areas. On the 27th of July 2012, the Ministry of Environment through General Notice 313 0f 2012 declared 16 wetlands in Harare protected. This was in acknowledgement and appreciation of the importance of wetlands as well as the threat that the wetlands in Harare are under.

2.12 Conclusion

The review of literature related to the subject of wetlands management reveals that this is a complex phenomena, which requires a multi-sectorial approach when coming up with mechanisms for effective management. Developing appropriate policies for wetlands management is not easy given the diverse functions and interest from the multiplicity sectors of the society. Often, wetlands are covered under multiple sectors with no single sector being in overall charge. Moreover, the complex nature of livelihoods and their relationships to linked systems of natural resources make it difficult to identify and define authority structures that can take overall responsibility for wetland resource use and management. As population rise and climate change adds to stresses on dry land farming, human pressures on wetlands will inevitably increase. Wetland policies and management regimes need to better reflect the realities of wetland utilization especially in the developing countries like

Zimbabwe. The wetlands importance and the need for effective management is accepted globally and there are several policy frameworks as well as strategies that were put in place. Studies have been done in and outside Zimbabwe on the importance of wetlands in addressing social and economic needs. However, findings from such studies may not adequately inform wetlands management in Harare without an understanding of the role of the policy in protecting wetlands. This study therefore concerns itself with this subject as it remains a gap.

CHAPTER 3

METHODOLOGY

3.0 Introduction

This chapter describes the methodology used in order to achieve the objectives of this research. The research design, population of the study, research instruments, data collection, and presentation and analysis procedures are discussed here. The qualitative research design was used and data was collected through in-depth interviews with key stakeholders, observations were done on site of the wetlands and documents review was done. Justification is also given on the choices of methodology chosen based on the strengths identified. The weaknesses of the methodology are identified and catered for to improve the validity and reliability of the research data and findings.

3.1 Research Design

This was a qualitative research, which took the case study approach. Qualitative approach is one in which the inquirer often makes knowledge claims based primarily on constructivist perspectives (the multiple meanings of individual experiences), meanings socially and historically constructed, with an intent of developing a theory, a pattern, or basis of advocacy (Creswell, 2003). The researcher sought to understand the how and why questions of the wetlands management. This research design helped the researcher to understand the underlying factors that led to some human activities on the wetlands despite the presence of some legislation. During the research, the researcher managed to have a greater interaction with detailed data and

probe for more details and explanations from the participants. According to Thornton (1987), qualitative research assumes that there are aspects of reality that cannot be quantified, the basic assumption is that it is both possible and important to discover and understand how people make sense of what happens in their lives. This was true during the study as different stakeholders had their own different views on what is happening on the wetlands. It was going to be difficult to extract such information through quantitative methods of enquiry. However qualitative methodology had its own challenges of despondence being too emotional. The researcher made some efforts in validating all the views that were shared during some interviews to minimize bias.

3.2 Population

This research focused on human activities on wetlands in Harare as denoted by the Wetlands Map of Harare (Figure 1) and the government gazette of the 27th of July 2012. There are 26 clearly marked wetlands in Harare. Visiting all the wetlands to observe some human activities was going be costly and given the limited time it was going to be very difficult. Sampling was used to determine how many of the wetlands to be visited. The researcher visited 16 wetlands in Harare based on convenient sampling. Stakeholders including City of Harare, Academia, Civil Society Organizations, Residence, Ministry of Local Government Rural and Urban Development, Ministry of Tourism and Construction Companies participated in the research. City of Harare participated as they are responsible for proving residential and industrial stands as well as provision of water to the residences. The academia came in as stakeholders who could be having empirical scientific evidence on

importance of wetlands. Civil Society Organizations like Zimbabwe Environmental Lawyers Association, Environment Africa, Institute of Water Development and Monavale Wetlands Conservation Trust also participated in this research to share their views on what is happening on the wetlands in Harare. Construction companies were involved as they provide services to people when given either residential or industrial stands.

3.3 Sampling of Wetlands

Gupta and Rangi (2009) notes that populations can sometimes turn out to be huge, in which case a researcher needs to make use of a sample since it would be neither economical nor operationally feasible to study the whole population. A sample is a finite part of a statistical population whose properties are studied to gain information about the whole. However, scholars warn that such a sample should be representative, adequate (not too small or large), unbiased and should have minimal standards of error so that inferences or conclusion about the whole population can be made based on the sample (Gupta and Rangi, 2009). In the same vein, this research made use of non-probability sampling. Specifically, the researcher made use of purposive or judgmental and snowball sampling as types of non-probability sampling. Snowballing worked effectively at the University of Zimbabwe during the study. The researcher managed to interview relevant academics who have been working and advocating for wetlands protection for quite a considerable time. Babbie and Mouton (2005) noted that sometimes it's appropriate to select a sample on the basis of your own knowledge of the population. Guided by Babbie and Mouton (2005), the researcher made use of the judgmental sampling, visiting such wetlands that were well known for human

activities or have been reported to be transformed in their use by human beings. There are 26 wetlands in Harare and they differ in space occupied as well as area. The researcher made use of background knowledge to purposely select which wetlands to study in detail.

3.4 Sample Size

Although a formula exists to calculate the sample size, there are no rigid rules on what a proper sample size should be. Such a decision on the size of the sample should be considered optimum if fulfills the requirements of efficiency, representativeness, reliability and flexibility. However, some subjective factors such as availability of financial resources, time, and nature of respondents, among others influence the decision (Gupta and Rangi, 2009). There are 26 wetlands in Harare and the researcher could not visit all of them. Based on convenience with regards to time and financial resources, a sample of 16 wetlands in Harare was visited. There were 14 stakeholders who were interviewed. Initially the study wanted to interview 10, however the number increased as the study sought to validate some of the data that was received from other key informants.

3.5 Data Collection

The study made use of three (3) data collection instruments during this research. The researcher made use of in-depth interviews, observations and documents review in order to come up with data for this research. The data collection tools were used as follows:

3.6 Research Instruments

3.6.1 In-Depth Interviews

The researcher identified some senior officials from the identified stakeholders who took part of in depth interviews. The stakeholders included the City of Harare, University of Zimbabwe, Civil Society Organizations, Zimbabwe Tourism Authority, Environment Management Agency, Real Estate development agencies, Zimbabwe National Water Authority (ZINWA) and Ministry of Local Government, Rural and Urban Planning. The researcher, during the in-depth interviews with the stakeholders, was more interested on why there are human activities on the wetlands despite the legislations that prohibit such activities. Different interview guides were developed which were used with different stakeholders. During these in-depth-interviews, the researcher generated more detailed data and information on wetlands utilization in Harare. These interviews dealt with the laws, policies, and programs related to wetlands protection as well as economic and social values attached to the wetlands in Harare. The legal provisions of the wetlands were also discussed during the interviews. The study also discussed the history of wetlands management in Zimbabwe, especially Harare.

3.6.2 Observations

Kelleher (1993) argues that observation forces the observer to familiarize with the subject and also allows previously unnoticed or ignored aspects to be seen. In this study, the researcher applied both participatory and non-participatory observation techniques in order to collect quality data for the study. The researcher visited the wetlands and observed what has been going on within the wetlands. During the

visits, the researcher took some photos and also had some in-depth informal discussions with people concerned with what would be happening on the visited wetland. Sliverman (1993) noted that field researchers are intrigued about details that reveal 'what is going on here' through careful listening and watching. This researcher was able to visit and had conversations with people around the wetlands. These observations and conversations were quite helpful to the researcher as quality data was collected through this method. The researcher was also able to attend 3 meetings on wetlands advocacy organized by Humanitarian Information Facilitation Center (HIFIC). The relevant departments of the Ministry of Local Government, City of Harare and other CSOs attended these meeting. During the meetings, the researcher was able to pick valuable information from the discussions on the wetlands management.

3.6.3 Documents Review

The researcher reviewed the existing acts and statutory instrument on environment. In particular, the researcher looked at the Environment Management Act (Chapter 20:27) which is the main legislation that is used for the management of wetlands in Zimbabwe. However, the researcher also looked at the Water Act (Chapter 20:24), Statutory Instrument 7 of 2007; Regional, Town and Country Planning Act (Chapter 29:13); Environment Management policy (2002); Zimbabwe Environment Outlook (Zimbabwe's 3rd State of the Environment Report) and general government notice in the Government Gazette of the 27th of July 2012 which declare protection to 26 wetlands in Harare. Besides these legislations, the researcher also reviewed some journals written by other scholars on wetlands in Zimbabwe and specifically

wetlands in Harare. Such literature was also reviewed together with other books in particular those that chronicled wetlands management in a sustainable environment. Provisions of the Ramsar Convention (1971) were looked at in detail during the desk review to capture the global discourse on the management of the wetlands. This was done in order for the researcher to have a deeper understanding of the value attached to the wetlands and the wetlands management in general.

3.7 Data Collection Procedure

The government of Zimbabwe mandated the Environment Management Agency (EMA) to implement the Environment Management Act, as such the researcher-sought permission from the Agency to ensure that all procedures were followed in order to avoid any challenges in carrying out the research. The researcher wrote a cover letter that was submitted together with the letter from the University to the Director-General of Environment Management Agency (EMA) requesting for the permission as well as the Map of Wetlands in Harare. The researcher also wrote letters that were hand delivered to institutions that he identified for some in-depth interviews. Some follow up communications were done through emails and phone calls to set dates and time for the in-depth interviews.

3.8 Data Presentation and Analysis Procedures

According to Neuman (1997), data analysis is the process of re-organizing, manipulating, interpreting and giving meaning to the body of collecting data. Qualitative data are in the form of text, written words, phrases, or symbols describing or representing people, actions and events in social life. There is however no single qualitative data analysis approach that is widely accepted (Neuman 1997). Again,

according to Bouma and Ling (2004), data collected through qualitative methods such as Focus Group Discussions, interviews and some sections of the questionnaires tend to be vast and overwhelming and must therefore be organized and summarized first. Traditionally content analysis is usually divided into two types, namely conceptual analysis and relational analysis (Palmquist 1993; Kelle, 1995). Guided by such scholars, the researcher made use of themes and concepts as analytical tools to the collected data. The researcher analyzed the data by organizing it into categories on the basis of themes, concepts and similar features guided by the research questions and objectives. The researcher also linked concepts to each other in terms of oppositional sets or as sets of similar categories that were interweaved into theoretical statements. The data was interpreted by analyzing the findings' implications in answering research questions. On the more general level, the researcher did content analysis through making inferences by objectively and systematically identifying specified characteristics of messages. In the writing of the study, the data was presented in subheadings relevant to the research questions and objectives. Photos that were taken during the study are also shown in the appendix of this report.

3.9 Research Ethics

In line with research ethics, the researcher ensured that all respondents were given enough purpose of the interview and gave informed consent to be interviewed. The researcher respected the wish of some respondents who gave information in confidence for academic purposes. The researcher protected the identities of all such individuals as per their wishes.

When taking photos, the researcher ensured that no discernible faces of individuals were captured without consent. As such photos were restricted to natural environment features that aided the purpose of the study and its findings.

3.10 Conclusion

This chapter has described the methodology that was applied by the researcher in order to get the need information to address the topic. The research design that was used, together with the data collection instruments, data collection, analysis and presentation procedures followed were also discussed. The researcher made sure that the research design, data collection tools and analysis would not compromise the validity and reliability of the data. The methodology used managed to get relevant information from different key people regarding the management of wetlands in Harare. The researcher however had challenges especially with the Environment Management Agency (EMA) despite the fact that they are key players in the Management of the wetlands in Harare. The researcher followed all the required procedures of submitting the letter from the University as well as a personal cover letter. The methodology was also influenced by other scholars through the literature review.

CHAPTER 4

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

In the previous chapter, the researcher discussed the research methodology that was used in undertaking the research project. This chapter presents and analyses the findings of the research. Responses of the key informants interviewed and literature reviewed is qualitatively analyzed in order to provide answers to the research questions. The data obtained during interviews is analyzed under the respective headings relevant to the objectives of the research.

4.1 Knowledge of Wetlands

The study revealed that there is lack of comprehensive understanding of wetlands by various key stakeholders. Findings indicate that the wetlands definition is not only vague but remains a confusing topic fraught with contradictions that resulted in compromised commitment by various stakeholders. This was confirmed during the interviews with the academia from the University of Zimbabwe who quoted widely the definition as provided by the Ramsar Convention of 1971, which is also the definition quoted by EMA Act. However, the Regional, Town and Country Planning Act (Chapter 29:12), which is key in approving the land use conversion does not have a clear definition of a wetland. This lack of agreement on the operational definition of wetland compromised the value appreciation of the same authorities resulting in the authorization of human activities on the wetlands. This came out

again when EMA intervened on some projects on wetlands, which were authorized by the City Council but the development would continue after the payment of a fine. In the interview with the Ministry of Local Government, the Deputy Director of Urban and Rural Planning had a different view of wetlands as guided by their definition. The head of the Town Planning under the City of Harare alluded to the fact that they now get guidance from EMA after they were fined for allowing development on wetlands. He clearly stated that the City Council can only consult EMA when they are not sure of the place they would want to develop is not a wetland. The failure to have a common definition has resulted in the City of Harare allocating a wetland or authorizing change of use of wetlands by private owners resulting in EMA coming in to stop the projects. The Ministry of Environment and Natural Resources Management reacted to the confusion by making a general notice (313 of 2012) in the Government Gazette of the 27th of July 2012, which declared 26 wetlands in Harare. The study noted that this General Notice is not doing much to deter human activities on the wetlands as is happening at the Westlea Wetland. It can be noted again that the general notice were not crafted bearing in mind the different pillars of sustainable development. In accordance with the regulations, it is the intention of the government to stop any development on the wetlands.

4.2 The State of Wetlands in Harare

The research has established that wetlands are deteriorating in Harare. Interviews with Environment Management Agency (EMA) indicated that all protected wetlands in the City of Harare are already subjected to human activity that is prohibited by international and local policies. The researcher witnessed such activities as

construction on at least 3 wetlands that is at the National Sports Stadium Wetland, Westlea wetland and Highlands wetland. At the National Sports Stadium Wetlands, there is a construction of a multi-purpose wholesale and hotel; at the Westlea Wetland, there is a construction of a Service Station by PetroTrade, and a Primary School, and at Highlands Wetland there is a construction of houses. Other activities detrimental to wetlands taking place include brick moulding, maize cultivation and waste dumping. Maize cultivation is quite common on almost all wetlands in Harare as shown by some photos (Appendix D).

The view of EMA was corroborated by data obtained from other key informants. In an interview with the head of department for the Tropical Resources Ecology Program (TREP) at the University of Zimbabwe, it became apparent that scientific studies they had conducted had indicated a reduction in the biodiversity in the Harare wetlands due to the ongoing human activities. He also pointed out that Lake Chivero the biggest supplier of water to Harare Residents is now too shallow to hold enough water for the residents. He went on to say that the shallowness has been caused by the siltation being caused by urban agriculture, which is also impacting on the wetlands.

4.3 Causes of wetlands destruction

The research also sought to account for the state of wetlands in the city. The Harare City Council indicated in the interviews that the city is running out of land needed by business developers and as such leaving Council with little options but to allow construction on wetlands. This was supported by the fact that when government wanted to get land for construction of a shopping mall by Chinese investors, one of

the wetlands that is conveniently located in the city with access to critical services such as water, electricity and roads was chosen. This was despite the fact that this wetland is a major source of water for Marimba River, which also feeds into Lake Chivero. Actually during the interviews, it came out that the Environmental Impact Assessment (EIA) was done after the project had started. The construction even started after the General Notice by the Ministry of Environment in the Government Gazette of the 27th of July 2012, which clearly designated the place as a protected area. Similarly some housing cooperatives allocated land on wetlands said that they had no option as land was becoming hard to come by.

However, interviews with people who were engaged in brick moulding indicated that they were pushed by economic hardships to try and make out a living illegally. Those who are engaged in maize cultivation bemoaned the absence of alternative land for them to supplement food for their families. They cited that the soils on the wetlands are rich and they don't need to apply fertilizers for them to get good yields. Besides the good soils, they also benefit from the wetness of the soil, which guarantees them a good yield regardless of the amount of the rain season. With perennial shortages of water in the city, some families also grow vegetables in these wetlands for their subsistence.

In addition, there is still lack of knowledge on the importance of wetlands, which has led to the destruction of wetlands. The researcher found out that officials in the city council had an appreciation of the importance of these wetlands however pointed out that what is happening in other areas is beyond their control despite the fact that its within their jurisdiction. When asked to explain why there is a construction of a Hotel on the wetlands, the Chairperson of the Councilors Committee of Environment

clearly said that his signature is not on the document. He professed ignorance on how such a project with huge environmental and social implications on the residents of Harare was carried out.

The researcher also found out that the Council does not have a policy on wetlands. The Council is currently working on a policy, which is now almost 80% done. However, the council has now appointed an Environment Regulatory Officer in response to the fines that they paid to EMA after allowing construction to take place on wetlands.

4.4 Utilization of Wetlands in Harare

The researcher observed that wetlands in Harare are being used for different purposes depending on the size and location of the wetland. Some wetlands like Monavale, Mukuvisi woodlands, Cleverland Dam and Lake Chivero are being used for recreational and aesthetic purposes. The researcher visited these wetlands during the Easter and Independence holidays and observed lots of families enjoying themselves. At Monavale, those visiting the place did not pay any fee, however at the other 3 sites, a minimum fee was being paid to enjoy the facilities. While other wetlands are being used for recreational purposes, 80% of the wetlands in Harare are being used for cultivation, mainly maize cultivation. While others are being used for cultivation, other wetlands are being used as waste dumping sites, construction of buildings, moulding of bricks and car washes. An interview with those cultivating on the wetlands revealed that the residents are aware of that the places are wetlands. They are actually attracted to the places by the state of the land, which retains moisture even when the rainfall is below normal.

4.5 Legal Framework: The EMA Act

The study established that the implementation of the EMA Act in the protection of the environment especially wetlands is not consistent with the provisions of the same. In the case of the construction of the Anjin Multi-purpose Centre (Hotel and Conference) at the National Sports Wetland, EMA was not involved and the EMA Act was complied to in retrospect. An interesting observation was that City of Harare accepted a land change of use from Anjin Investments and accordingly applied to the Ministry Local Government, Rural and Urban Development without giving consideration of the EMA Act. The study established that Anjin Investments applied to change Stand number 18014 from public open space and recreation to Hotel Office and Wholesale during the beginning of 2011. During the land allocation process, a notice for change of ownership was published in the Herald of the 13th of July 2011 in accordance with the Regional, Town and Country Planning Act (Chapter 29: 12), Section 49 (4). Since there were no objections, the authority to change the use of land in accordance with the Act was given on the 24th of August 2011.

The authority was granted before carrying out an Environment Impact Assessment (EIA), which resulted in the development temporally being halted. The City Council was fined US$ 15 000 by EMA but the construction of the building continued and today the building is there as shown in the newspaper article and photo in Appendix D. It is important to note that EMA was not involved in this process despite the fact that the stand in question is a wetland and a catchment area for the Marimba stream that provide water to lake Chivero. Below is the newspaper article from the Standard Newspaper on how EMA fined City Council:

Harare Council fined for wetland abuse

Recently, the City Council (HCC) was slapped with a Us$ 15 000 fine by the Environmental Management Agency (EMA) for conducting themselves in a manner that endangered the environment. Among the charges was of 'uncontrolled development of residential and commercial stands on wetlands'. Most notable would be the shopping mall that is set to be built on the Borrowdale wetland. Other wetlands in the capital city that have been allocated as stands include those in Budiriro 3 and 4, Prospect, Tynwald, Glen Lorne, Eatslea, New Marborough and that which is opposite the National Sports Stadium.

The HCC is reported as having chosen to disregard previous orders from EMA to stop the construction currently taking place on the wetlands.

Unfortunately, it is not only some authorities that are allowing the destruction of wetlands as these vital natural water reservoirs face further threats from informal and uncontrolled agriculture activities, veld fires and pollution.

The Environment Management Act (CAP 20:27) Statutory Instrument 7 of 2007 states in clear terms that even just cultivating on wetlands should not be carried out until permission is granted by EMA.

This case therefore demonstrated that while legal and policy framework may be there to protect wetlands, such is not being complied to. The reasons given for this defiance include the fact that agency charged with the implementation of the Act cannot be punitive enough as well as the fact that options are limited for the local authority as they are running out of land in the convenience of the city. There are also indications that the Act is not being implemented due to lack of awareness of the act and the importance of wetlands among the regulatory authorities.

(Adopted from a Chipo Masara report, Harare City Council Fined for wetland abuse, page S12, The Standard, January 22, 2012)

4.6 Awareness of Legal and Policy Framework Protecting Wetlands in Harare

The researcher established that some of the stakeholders do not know the legal and policy framework protecting wetlands in Harare. In an interview with the academia, they demonstrated knowledge and awareness of the legal provisions that protect the wetlands. On the other hand, however, the residents who are practicing urban agriculture do not have an understanding of the existing policies. The academia was

able to understand the existing policies as provided for by EMA Act and being implemented by EMA. They even went on to point out some policy gaps in the Act.

It turned out that the residents who are practicing urban agriculture are not even aware of the implications of their activities to the environment in general and wetlands functions in particular. Their concern was to maximize their crop produce even through applying fertilizers and other chemicals, will go on to pollute the water. The limited knowledge of regulations has resulted in some landowners deciding to fill wetlands because the private benefit from development is typically far greater than the value captured from preserving the wetland.

4.7 Environmental Management Act and Wetlands Management

The respondents to the study noted and appreciated the existence of Environment Management Act and the Agency. A concern was however raised on the broad mandate of EMA which is also impacting negatively on the management of wetlands in Harare. The Environmental Management Act (Chapter 20:27) was enacted to among other things provide for the sustainable management of natural resources, protection of the environment and to prevent pollution and environmental degradation. It is the main Act in the country dealing with environmental issues although it is a framework legislation that needs to be boosted with the aid of regulations to deal specifically and in detail with the various issues that are contained in the Act.

Section 3 of EMA Act states that:

(1) Except where it is expressly provided to the contrary, this Act shall be construed as being in addition to and not in substitution for any other law which is not in conflict or inconsistent with this Act.

(2) if any other law is in conflict or inconsistent with this Act, this Act shall prevail.

EMA therefore has a coordinating role over all other pieces of legislation that deal with the environment. In the same vein, it has a coordinating role over all other laws that deal with wetlands as an environmental issue. This research has clearly shown that there are various laws that deal with wetlands management in the country, be they Acts of Parliament, Regulations or By- laws made by local authorities to govern urban wetlands and related issues.

This shows that the Environmental Management Act is a general legislative framework. It does not cover each and every environmental aspect including wetlands. From documents review, it came out that EMA Act is a framework law that will be complemented by other laws and policies that are not in conflict with it. However, where there are conflicts this Act will take precedence. At the same time, this law will be supported by the setting up of the proposed institutions and the passage of regulations by the Minister. Nevertheless, the Act provides the general environmental principles that should be followed in environmental management. Only section 113 of the Act refers to the protection of wetlands. However, the provisions are not adequate enough to ensure the protection of the same in Harare. The combination of the multiplicity of legislation coupled with misinterpretation by

those that enforce the laws, has led to confusion on the legal standing of the protection of wetlands.

4.8 Effectiveness of EMA (Agency) in Protecting Wetlands

The study established that EMA is not effective in its role of protecting wetlands. However, the factors that are being attributed to the ineffectiveness differed from one stakeholder to the other during the interviews. The Deputy Director of the Institute of Environmental Studies at the University of Zimbabwe attributed the ineffectiveness to lack of human and financial resources. She highlighted that EMA like many parastatals is not being given enough resources from the treasury to monitor the implementation of the policies. She went on to say that comparatively since its inception, EMA has done very well after the introduction of multiple currencies. However, the head of TREP at the University of Zimbabwe argued that EMA is not being effective, as they don't know their mandate. He posited that EMA's operations are vulnerable to political interference thereby compromising their effectiveness.

During the interview, the head of the TREP accused EMA staff of being corrupt and feeling insecure at their workplaces. A lecturer with the Geography and Environment department at the University of Zimbabwe concurred with the Deputy Director of Institute of Environment Studies who argued that EMA requires more resources to make it effective. He pointed that EMA does not have enough resources to make the necessary follow ups as provided for by the Act. He however agreed with the head of TREP that there is too much political interference in the implementation of the policy. He argued that EMA as an arm of government, has limited autonomy thereby compromising its effectiveness. His claim was substantiated by the fact that big

construction projects being done on the wetlands were actually signed by the government regardless of the environmental threat. He cited some examples of projects like the construction of a service station along the Bulawayo Road by PetroTrade, the Chinese wholesale and Hotel and the Millennium Shopping Mall on the Borrowdale Wetland. The government of Zimbabwe owns PetroTrade, formerly the National Oil Company of Zimbabwe NOCZIM. Government also has some controlling stake in the Anjin Investments, which is responsible for the construction of the Hotel and Wholesale known as the Anjin Multi-Purpose Centre near the National Sports Stadium. The Vice President, Mrs. J. Mujuru, officiated during the ground breaking ceremony on the wetland in preparation of the construction of the Millennium Shopping Mall (Mall on Zimbabwe) which is said to be the biggest in Zimbabwe after its completion. In the same argument, the lecturer also commended EMA for doing their best given the limited resources which he argued is limiting the hiring of qualified personnel. This confirms the assertion by Boyer (2004) that urbanization has become a major cause of the loss of wetland area. This is because wetland destruction in urban areas occurs primarily through commercial and residential development and establishment of road infrastructure. Even the newspapers acknowledge the effort being done by EMA as shown by the article below. There are however unforeseen powers that are making EMA appear as if they are in effective.

EMA seems to be fighting losing battle

Environmental Management Agency (EMA) have been fighting to end the wetland abuse and has previously fined the Harare City Council for allowing construction on the ecologically sensitive areas.

BUT it would appear the agency is fighting a losing battle.

It seems those that can afford it, can simply buy land on wetlands to use in whatever way they deem necessary.

It does not look like the responsible authorities have bothered to stop and thing why wetlands had been left undeveloped in the first place.

As for the Gunhill/Highlands wetland, if steps to put a halt to the currently ongoing developments are not taken expeditiously, it will soon be forever lost.

(Adopted from a Chipo Masara report, EMA seems to be fighting a loosing battle, page S15, The Standard, October 21, 2012)

4.9 Role of Various Stakeholders in Protecting Wetlands

4.9.1 City of Harare

The study confirmed that the City of Harare is a major player in the protection of the wetlands in Harare. EMA sets out various principles of environmental management under section 4(2)(i), which stipulates that sensitive, vulnerable and highly dynamic or stressed ecosystems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure. This is very relevant to the management of the wetlands. Therefore the City of Harare is supposed to come up with mechanisms for the regulation of the cultivation of ecologically sensitive areas. The study showed that

80% of the wetlands in Harare are under threat from urban farming and the City Council is not taking action. The respondents to the study argued that the City of Harare is supposed to come up with by-laws that provide a clear framework on how urban agriculture should be done even on the wetlands. In an interview with the Institute of Environmental studies at the University of Zimbabwe, it was pointed out that there is nothing wrong with urban agriculture as it is about the technology that is used. In line with EMA principle, which states that, environmental management must place people and their needs at the forefront of its concern, it further emphasizes the importance of the City Council in the Wetlands management matrix. This then means the provision of the land for any development should be done in accordance with the law as well as having great consideration of the environment. The Rural and Urban Planning Department of the University of Zimbabwe implored the City Council to collaborate closely with the academia to ensure informed planning that is informed by empirical data. The department went on to suggest that the City of Harare can still optimal make use of the environment including wetlands if their decisions backed by scientific research to aid their planning.

4.9.2 Civil Society Organizations

The study established that CSOs are very crucial in the management of the environment in general and wetlands in particular. It was suggested that the residents associations as well as CSOs including CBOs play a watchdog role within the greater Harare in the protection of the wetlands. During the interviews, it was suggested that the CSOs are supposed to investigate existence of relevant documents whenever they see some human activities on the wetlands. The CSOs are also supposed to come up with some advocacy strategies to ensure that there is protection of the wetland within

their areas. The Conservation Society of Monavale (COSMO), is one such initiative by local people who came up with a Monavale Vlei Biodiversity project. The study noted that the Monavale Community are doing a lot of work through well organized advocacy making of local, national, regional and international platforms. The objective of the committee of Monavale is to improve the environmental living conditions for residents, fauna and flora in the suburb of Monavale. The study observed that the community came up with a local subject plan that ensures protection of the Monavale wetland. The committees work together with Environment Management Act as well as the City of Harare. Currently Monavale Vlei is one of the seven Wetlands in Zimbabwe on the list of the International recognized list of wetlands, which was a result of the advocacy and protection being done by residents.

4.9.3 Academic Institutions

The researcher established that the academia is not playing a major role in the management of the environment in Harare despite some existing collaborations, which a Rural and Urban Planning Environment lecturer described as weak. In an interview with the Deputy Director of the Institute of Environmental Studies at the University of Zimbabwe, it came out that the Institute played a key role in the development of the Zimbabwe Environment Policy in 2009. However, the Rural and Urban Planning Council emphasized that the development of the Environment was done by the Institute as a consultant guided by the provided terms of reference. Such an arrangement was noted as weak as it will not give the much added value.

The academia also noted that they are not being properly used by the relevant authorities especially EMA and the City of Harare in the management of the natural resources. Limited or absence of resources to finance research was cited as one of the major challenges. The Geography and Environment department of the University of Zimbabwe noted with concern the reduction in size of the wetlands in Harare, which was attributed to the failure of the policy makers to appreciate the value of wetlands as they make available such land for development.

4.10 Ministry of Local government, rural and Urban Development

The study established that Ministry of Local Government, Rural and Urban planning are the custodian of the Regional Town and Planning Act (Chapter 29:12) which is the legislation mandated with the management of the City of Harare. During an interview with the Deputy Director of the Physical Planning and Urban department, the study also established that there already exist master plans for the City of Harare. In the Master plans, there are passive and active open spaces. In accordance with the master plans, the passive open spaces are usually along the wetlands (streams) and any activity is prohibited while the on the active open spaces, development can take place after following due procedures. The study also established that, it is the Ministry of Local Government, Rural and Urban Development that has the responsibility of can authorized change of use for any land in Harare. In the case of the development at the Belvedere Wetland by Anjin Investments, it was the Ministry that gave the authorization after City Council had approved. As such, the Ministry is a key stakeholder in the management of the wetlands in Harare especially on authorizing the utilization of the active and passive spaces on the master plans. In the

same interview, the Physical and Urban Planning Department argued that they are doing their best to ensure that wetlands are protected, however indicated that directives from politicians at times compromise their authority.

4.10 Conclusion

This chapter has presented and analyzed findings of the research. The researcher has interpreted the data gathered and analyzed it to reveal the implications of findings in answering the research question and reaching the aim of the study. The next chapter shall present a summary of the research findings before concluding the research and making recommendations relevant for addressing the factors that causing the continued wetland degradation despite the policy intervention.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

The previous chapter evolved around discussions on the findings of the research. This chapter provides a summary of the research through providing information on the research problem tackled, the research methodology used, limitations of the study and implications of the findings on wetland management in Harare. Recommendations will be made for dealing with wetlands management in Harare together with suggestions for further research to ensure deeper understanding of wetlands management in the city.

5.1 Summary

The study was carried out against a background of an escalation of human activities such as construction and crop cultivation on the wetlands in Harare. There are open spaces that were left out as 'breathing' spaces and such places included wetlands. However, such places are now being converted into residential and business premises. The study sought to evaluate wetlands protection policies in the City of Harare as provided in the Environment Management Act.

There are 26 wetlands in Harare and a purposive sampling was done given the limited time and resources. Structured and unstructured interviews were conducted with different stakeholders in Harare, which included personnel from the University

of Zimbabwe, Harare City Council, Civil Society Organizations, the Zimbabwe Tourism Authority and real estate development agencies. Key experts from the department of Physical Planning in the Ministry of Local Government were also interviewed together with officials from Environment Management Agency, an institution established by the Environmental Management Act. The researcher visited the wetlands to observe the human activities occurring on the wetlands in order to verify the outputs from the interviews with the stakeholders. The researcher made use of the sustainable development concept in order to understand the activities within the wetlands due to the diverse functions of the wetlands. The theory provides that development involves a progressive transformation of economy and society. As a result, there are tensions between goals of economic development and environmental protection. In accordance with the conceptual framework, there is need to balance social development, economic growth and environmental protection.

The researcher faced some challenges in undertaking the research emanating from red tape bureaucracy in the government institutions. It was problematic to get the required documents for this research from the Environment Management Agency offices, City Council offices as well as the Ministry of Local Government, Rural and Urban Planning. This was despite going through the procedural processes to access such information. Follow ups were done through emails, phone calls as well as physical visits to the offices. The trend has been that the responsible people were too busy either in the offices or outside the offices. The other challenge has been that the research was done in a very limited time. This resulted in the researcher not visiting

all the 26 wetlands in Harare. Despite these limitations, the research came up with important findings that are instrumental in wetlands management in Harare.

5.2 Conclusion

There is political disconnect between the elected councilors and the employed technical side of the City of Harare thereby compromising the effectiveness of the policies both at formulation and implementation level. The elected councilors are brought into office regardless of their academic qualifications, which compromises their participation in the local by-law formulation processes at council level especially regarding wetlands. For example Councilor of Ward 32, was an airtime vendor, who does not have Ordinary level education. In the study, it also emerged that City of Harare is still being guided by laws, which were made during a time when environment issues, especially wetlands protection was not considered a problem. For instance the Regional Town and Country Planning Act (Chapter 29:12) does not suit the current situation where wetlands are under threat. While the Act provides for the preservation of streams within the urban areas, the provisions are not prohibitive. Such resulted in EMA fining the Harare City Council for allowing construction to take place on the wetlands against the provision of EMA to protect the environment. In essence and in conclusion the EMA Act is both not comprehensive and strict enough to protect wetlands.

5.3 Recommendations

1. Legislation revision and strengthening should be done through:
    - Coming up with a law that strictly seeks to protect wetlands and regulate their use. At the global level, there is a convention that

focuses purely on wetlands. Accordingly, this study is recommending the enactment of an Act of parliament that provides guidelines on the utilization and protection of wetlands in Harare. The study highlighted the importance and functions of the wetlands of which the provision of EMA through section 113 are not enough to ensure total protection of the wetlands.

- Harmonizing institutions that regularize the utilization of the wetlands. While EMA Act takes precedence over all other laws in cases of wetlands management, this is not being observed with concerned stakeholders choosing the less restrictive law. There is need to harmonize the provisions of the laws by the Ministries of Local Government, Water and Sanitation, Tourism as well as the Ministry of Environment. The study commends the efforts done by separating Ministry of Tourism from the Ministry of Environment and this should be the starting point to promote environment management issues. The Rural, Urban and Regional Planning Act (Chapter 20: 27) which was enacted in 1976 should be harmonized with Environment Managememt Act (Chapter 20:27) which was enacted in 2002. The intention of both laws on the environment needs to be harmonized to strengthen the impact rather than to make use of the weakness of each in the destruction of the environment.

2. Strengthen the Environment Management Agency by:

    - Reviewing the autonomy of the agency in the same way as other independent bodies such as the Zimbabwe Electoral Commission

(ZEC). EMA has been subjected to some political interference while carrying out their constitutional mandate.

- Making available resources to ensure recruitment and retaining of competent personnel who can effectively make some follow ups on the approved projects to check on compliance.

3. Ministerial prerogative need to be revisited;
    - Section 113 of the EMA provides for the ministerial prerogative on wetlands development. While the prerogative is exercised in consultation with the Board, it is important to note that the same Minister appoints the Board. This then allows the Minister to authorize human activities on wetlands without limitations, which might be detrimental to the future generations. This can be avoided by reviewing the powers of the Minister to allow for objectivity and common good to take precedence.
4. The fines need to be revisited to show the gravity of the matter to avoid such being subdued as operating costs. The current fines imposed by the legislation are not deterrent enough; in many instances the fines are very negligible. Profitable establishments can simply take such expenses as operating costs and include such in their margin of profit calculation. Measures should be taken to come up with more penalties if certain offences on the environment are repeated. In addition, fines should also be followed by stopping of activities and operations that the fined institutions would have been punished for.

5. Grassroots sensitization

   There is need to ensure in-depth grassroots sensitization on the value of wetlands in Harare and the provisions of the law. The ordinary people who are supplementing their limited incomes given the high unemployment levels, are cultivating on the wetlands. Driven by hunger, the general citizenry should be educated on coming up with either alternatives or employ better farming methods that are not detrimental to the wetlands. This sensitization should be done from a sustainable utilization of the wetland perspective rather than from a conservationist perspective.

6. Investors to propose alternatives that are sustainable for their development activities;

   - Generally Harare was build on a wetland and this study, therefore, is recommending considering the option of requesting the investors to come up with other artificial wetlands as part of reducing the impact of development on a wetland.

5.4 Recommendations for Further Research

The study recommends that further research be conducted to find ways of accommodating social, economic and environmental needs in the management of wetlands in Harare. This research did not pay particular attention to the harmonization of such needs even though they are a contributing factor to the effective management of wetlands in Harare. In particular, urban agriculture is a reality and there is need for further research to ensure that urban agriculture is

regularized such that it will not impact negatively on the wetlands to avoid downstream effects.

This study further recommends that more research be done to find out the impact of construction on the wetlands to the future water supply in Harare. During the study, the researcher established that Harare was built on wetland; in particular the road named Julius Nyerere is actually Mukuvisi River, which was starts from where Harare Gardens and Causeway Post Office are situated. It is therefore imperative to do further research on the impact of the current construction activities taking place on the remaining wetlands of Harare on the future water supply to the residents of the greater Harare. The researcher did not give these issues due attention even though it has been emerging from the respondents that wetlands are key to the supply of water to the residents. The current policies and lobbyist are motivated by conservationist which is void of an in-depth scientific understanding of the multiplicity roles of wetlands thereby passively ignore or discourages other use of the wetlands like construction and agriculture. Research is required to better understand trade-offs and determine best management practices.

Further research may also be undertaken to establish the effectiveness of the recommendations made in this study to ensure effective wetland management in Harare. A comparative study that will involve other countries can be used to put to test the recommendations for further adoption and implementation as a way of effective management of wetlands.

5.5 Conclusion

This chapter served as a summary of the study. The aim of the study was revisited together with the key questions that the research was meant to answer. The methodology used was also briefly discussed, including the limitations of the study. Conclusions were made based on the findings while matching recommendations to improve the wetlands management in Harare were suggested. The conclusions were also done in a way that also addresses the research questions and objectives. The recommendations that were presented speak to both suggestions meant to improve the effectiveness of wetland management in Harare and those suggesting areas of further research to increase knowledge on effective wetland management given the obtaining pressures on land. Taking into consideration these recommendations may increase the effectiveness of wetlands management in Harare.

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APPENDICES

Appendix A: Interview guide

Guide – City of Harare
***(*Waste management department, Housing department, Environment department, Health Department, Physical and Planning Department)**

My name is Jimmy Wilford, a Masters student at Africa University studying Public Policy and Governance under the Institute of Peace, Leadership and Governance (IPLG). I am currently undertaking a research on: An evaluation of policy intervention on Wetlands Management focusing on Environment Management Act (EMA) and Wetlands in Harare. The purpose of this interview is to explore the policy provisions in the protection of wetlands in Harare 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. However, your answers will be confidential. The information will help me to learn more about the wetlands management as well as protection in Harare. I expect our conversation to last about one and a-half hours.

1. May I know your full job title and responsibilities?
2. What is your understanding of wetlands?
3. How important are wetlands to the citizens of Zimbabwe in general and Harare residents in particular? *(probe the different uses of wetlands)*
4. Can you share with me any existing laws that protect or ensure sustainable use of wetlands in Zimbabwe?

5. What can you say is the state of the wetlands in Harare? How were they being used over the years?
6. How effective are the current laws in protecting (and ensure sustainable use of) the wetlands in Harare?
7. What do you suggest should be done to ensure sustainable use and or protection of the wetlands in Harare?
8. What is the City Council doing to ensure protection of the wetlands in Harare? Does City Council have by-laws that protect (or guide sustainable utilization of) wetlands?
9. Ideally, how can we ensure sustainable utilization of wetlands?
10. To what extent are the damages to the wetlands (if any) are affecting any service delivery within the City of Harare?
11. Do you think that Environment Management Agency (EMA) as a structure put in place to protect the environment is doing what it is intended to do? How/Why?
12. In your own assessment how has the Environment Management Act (EMA) contributed to the management of wetlands in Harare?
13. What role has civil society organizations played to promote wetlands management in Harare?
14. Zimbabwe is part of the Ramsar Convention. Harare has 2 wetlands on the list. How has that helped in protecting the wetlands?

15. Do you have anything that you think we could have missed in our conversation that can help me in understanding the EMA Act and Wetlands in Harare?

Thank you for your time.

Appendix B: Study Leader to EMA

Jimmy Wilford
24 Twiza Msasa Park
Harare

ENVIRONMENTAL MANAGEMENT AGENCY
REGISTRY
2 11 MAR 2013
P.O. BOX CY 385, CAUSEWAY
ZIMBABWE

Monday, 11 March 2013

Executive Director
Environment Management Agency (EMA)
Block1, Makombe Building
Harare

Dear Sir,

Ref: Request for permission to access Wetlands Map of Harare and other literature on wetlands

The above caption refers.

I am student with Africa University studying towards a Masters Degree in Public Policy and Governance. I am currently doing a dissertation to evaluate policy intervention in addressing human activities on the environment, the case of Environment Management Act and Wetlands in Harare.

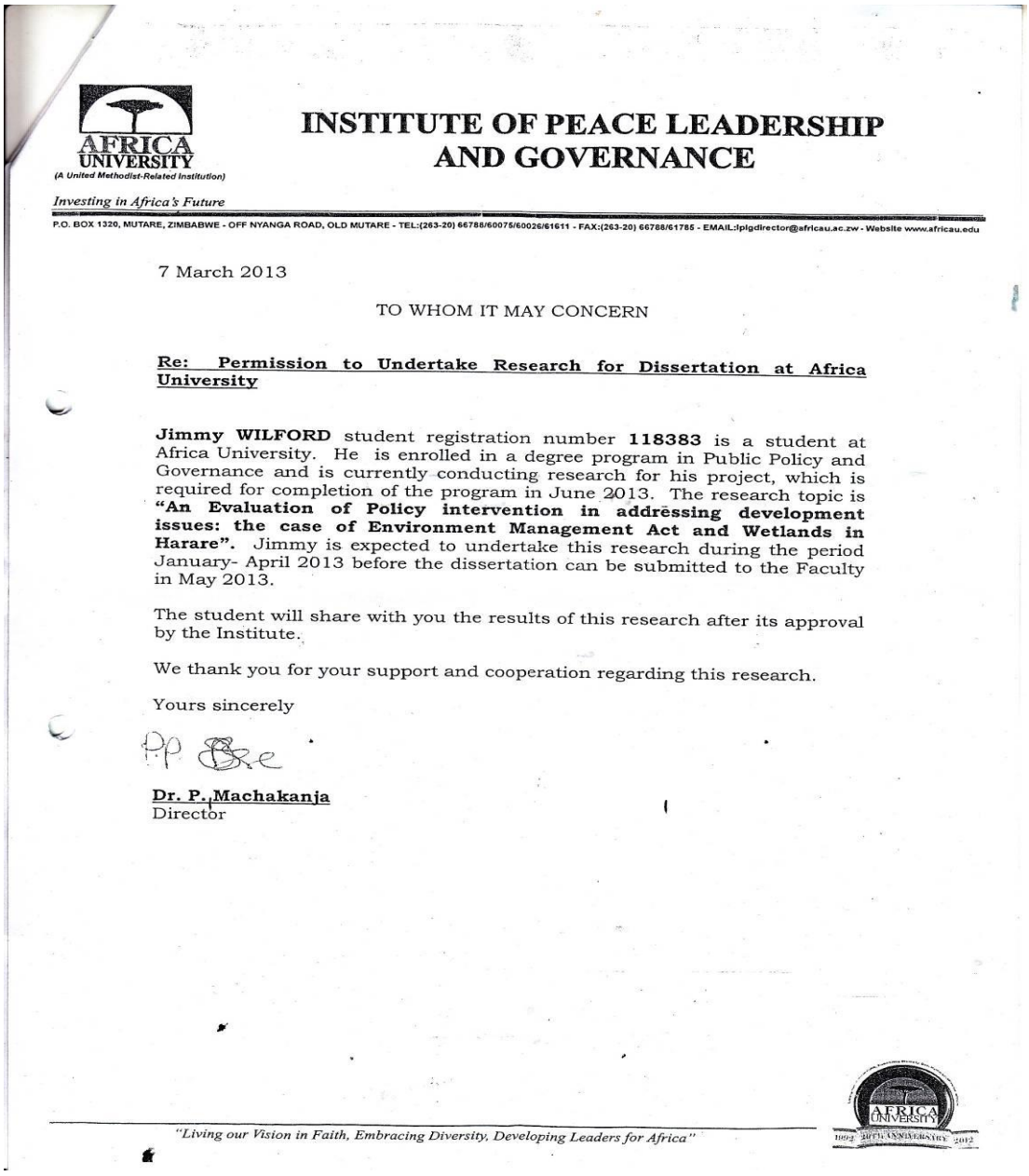
In order for me to successfully come up with a proper evaluation, in line with my topic I am seeking your authority to access the Map of Wetlands in Harare and any other literature on wetlands that were generated by EMA. I am supposed to submit my completed dissertation by May 2013. I will share with your office my report after the completion of my studies.

I am looking forward assistance.

Yours faithfully,

Jimmy Wilford
0772 819 786

Appendix: C Institute Research Confirmation Letter



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7 March 2013

TO WHOM IT MAY CONCERN

Re: Permission to Undertake Research for Dissertation at Africa University

Jimmy WILFORD student registration number **118383** is a student at Africa University. He is enrolled in a degree program in Public Policy and Governance and is currently conducting research for his project, which is required for completion of the program in June 2013. The research topic is **"An Evaluation of Policy intervention in addressing development issues: the case of Environment Management Act and Wetlands in Harare".** Jimmy is expected to undertake this research during the period January- April 2013 before the dissertation can be submitted to the Faculty in May 2013.

The student will share with you the results of this research after its approval by the Institute.

We thank you for your support and cooperation regarding this research.

Yours sincerely

PP

Dr. P. Machakanja
Director

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Appendix D: Wetland Photos

Cleverland Dam - Residents making use of the recreational facilities

Westlea Wetland – Cultivation taking place- March 2013

Belvedere Wetland - Hotel and Wholesale - March 2013

Borrowdale Wetlands - Seed - Co demonstration plot - March 2013

Westlea Wetland - Service station construction taking place - February 2013

Highlands Wetland - Construction and maize cultivation - March 2013