

FACTORS OF NEMA'S CONSERVATION EFFORTS: A CASE STUDY OF NAIROBI
RIVER, KENYA

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DECLARATION

I declare that this research project is my original work and has not been presented before for any consideration for a certification. The project has been complemented by my referenced sources duly acknowledged.

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BDS/18/00158/2/18

The project has been compiled for submission to the Management University of Africa under my supervisor.

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DEDICATION

I dedicate this project to my mother Evalyne Rono for her facilitation of my working conditions as I strived to complete this project. I also dedicate this project to my brothers and sisters Caleb Rono, Mercy Rono, Gideon Rono and Hope Rono for their motivations to help me work on and complete my project.

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ACRONYMS AND ABBREVIATIONS

DANIDA- Danish International Development Agency.

DRSRS- Department of Resource Surveys and Remote Sensing.

EMCA- Environmental Management and Co-ordination Act.

NEMA- National Environmental Management Authority.

NES- National Environmental Secretariat.

PPCSCA-Permanent Presidential Commission on Soil Conservation and Afforestation.

SAGA- Semi-Autonomous Government Agency.

UNDP- United Nations Development Program

UNEP- United Nations Environmental Program

ABSTRACT

This project looks at the determinants of NEMA's conservation efforts in Nairobi River relative to the Key variables under study which are as follows: conservation policy of Kenya, the availability or lack thereof finance, team work and human resource skills. It looks at the predominant issue being the major environmental degradation in specifically Nairobi River in Kenya as well constant loss of biological diversity despite NEMA's existence since 2002 with a mandate to ensure the implementation of Kenya's conservation policy that is the protection and conservation of Kenya's environment. The project utilized a case study research design as it was the most efficient in carrying out this research. The data collection methods used were interview guides and schedules to fifteen residents and fifteen students living and schooling near Nairobi River. The interview guides and schedules entailed a close-ended questionnaire to be able to get required findings as per the objectives under study. For the literature review, a theoretical framework incorporated using two environmental theories and an analysis of previous work of scholars were incorporated on the issue so as to tackle the empirical literature.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

The following chapter looks at background of this study. It then follows to focus on an in depth problem statement. It will also look at the various objectives under study that are funding, teamwork, conservation policy and human resource skills based on how they affect NEMA's conservation efforts. Under these objectives the necessary research questions will be obtained. It will finish by looking at the limitations of study, the justifications of study and the scope of study.

1.1 Background of Study

Environmental Conservation is a phenomenon that is globally known and worked on by many people in the world. It is generally done for the purposes of protecting and sustaining the environment. The main International body that focuses on environmental protection is the United Nations Environmental Programme(UNEP). United Nations Environmental Programme works on a global scale as the leading authority in global environmental issues. UNEP cannot work on its own. It therefore works in conjunction with governments of nation states and regional bodies to aid in environmental conservation.

National Environmental Management Authority(NEMA) is a Kenyan government Agency that was established on 1st July 2002 for the sole purpose of Managing the Environment as well as Environmental policy (National Council for Law Reporting, 2012). It was established under the Environmental Management and Co-ordination Act (EMCA) no 8 of 1999 for it to be the principal instrument of the Government of Kenya in implementing all of Kenya's environmental policies. NEMA was formed as a result of the merger of three government

departments that is: The National Environmental Secretariat (NES), the Permanent Presidential Commission on Soil Conservation and Afforestation (PPCSCA); and the Department of Resource Surveys and Remote Sensing (DRSRS). This was for the sole purpose of bringing harmony in the management of Kenya's environment.

NEMA has been present since 2002 and its authority is a Semi-Autonomous Government Agency (SAGA) in the Ministry of Environment and Forestry. It has a vision of a clean, healthy and sustainable environment of Kenya and likewise core values of teamwork, innovation, equity, professionalism, integrity and courage of conviction to enable its proper functioning. NEMA also works with development partners and lead agencies e.g. United Nations Environmental Programme (UNEP), United Nations Development Programme (UNDP) and DANIDA among others to facilitate partnership in protecting the environment.

Given the background of NEMA, it is supposed to function according to its mandate in ensuring that there is co-ordination and general supervision in all matters relative to the environment as well as be the predominant agent of the government in ensuring the implementation of Kenya's environmental policy (Kithika, 2009).

The extent to which NEMA has engaged in conservation efforts of Kenya's environment shall thus be looked at in this proposal using four determinants of NEMA's conservation efforts as the variables under study that is conservation policy of Kenya, availability or lack thereof funding, teamwork and lastly human resource skills.

The predominant purpose of the study is to look at the factors of NEMA's conservation efforts relative to the key variables under study which are conservation policy, funding, teamwork and human resource skills.

It will be to determine how the conservation policy of NEMA affects how far NEMA goes in ensuring environmental conservation in Kenya, how teamwork within the Headquarters in Nairobi as well as with county governments affects NEMA's conservation efforts, how the availability or lack thereof funding determines the level and depth of NEMA's conservation efforts in Kenya and lastly how the human resource skills of NEMA as an organization affects its conservation efforts.

The other focus of the study that is adjacent to the predominant purpose of the study is to look at what is hindering NEMA's proper conservation efforts and this will be based on the key variables under study. The reason for looking at these determinants as the variables under study is because there is major environmental degradation as well as pollution and the loss of biological diversity in the country yet NEMA has been in place since 2002 (National Council for Law reporting, 2012).

The purpose of the study is thus relevant as we have to ask ourselves why this is happening to our country when there is a whole organization responsible and with a mandate for ensuring the conservation and protection of the environment of Kenya. NEMA has been given the required resources and expertise and thus we have to look at what determines the extent to which it engages in conservation as well as what hinders its conservation efforts relative to the key variables under study.

1.2. Statement of the Problem

There is major environmental degradation and the constant loss of biological diversity in Kenya. Given that NEMA is supposed to ensure the protection, preservation, conservation and management of Kenya's environment relative to the EMCA Act of 1999, there seems to be a

problem with how it functions to ensure conservation of Kenya's environment as the condition of Kenya's environment is quite dire.

What has been the case from NEMA's establishment up to date is a totally different scenario. One would expect that Kenya would be a clean country with sustainable conservation systems and mechanisms in place. What is there now is quite the opposite with constant pollution of all kinds that is air, water and noise pollution et cetera. The marine biodiversity is constantly in danger of death given the plastic pollution of marine and other water bodies despite the plastic ban in Kenya. Kenya only banned single use plastic bags but others like plastic bottles and their tops et cetera are thrown into water bodies whereby they end up interfering with the marine ecosystem.

There is also consistent littering in the country by individuals both common laymen and the leaders of the country. The littering is also present though not so severe near the NEMA headquarters in Nairobi. The sewer system in Kenya especially in Nairobi is beyond pathetic with constant flooding and sewage bursts all over.

NEMA's conservation efforts do not match the outcome of Kenya's environment at all and thus the need for research to see the problem in how functions to ensure conservation given the aforementioned presence of major environmental degradation as well as constant biological diversity loss in Kenya.

1.3. Research Objectives

The main research objective is to find out the factors of NEMA's conservation efforts in Kenya.

1.3.1. Specific Objectives

The specific objectives of the study will be relative to the variables under study as follows:

- I. To find out how the conservation policy of Kenya affects NEMA's conservation efforts.
- II. To determine how funding affects NEMA's conservation efforts.
- III. To find out how teamwork determines NEMA's conservation efforts in Kenya.
- IV. To find out how human resource skills affects NEMA's conservation efforts in Kenya.

1.4 Research Questions

The research questions are as follows:

- I. How does the conservation policy of Kenya affect NEMA's conservation efforts?
- II. How does funding affect NEMA's conservation efforts?
- III. How does teamwork determine NEMA's conservation efforts?
- IV. How do the Human Resource skills affect NEMA's conservation efforts?

1.5. Significance of Study

The significance of the study is for ensuring that there is accountability on the National Body for environmental management. It is to ensure that there is proper research work on the conservation efforts of Kenya and to foster responsibility on the stakeholders of Kenya's environmental conservation.

There is need to find out what affects NEMA's conservation efforts and how far they go in ensuring that there is proper management of Kenya's environment given the current condition of Kenya's environment and the time frame of the existence of NEMA.

It's to find gaps in Kenya's environmental conservation relative to NEMA as well as find out new solutions to the existing problem.

1.6. Limitation of Study

The limitations of the study are that one cannot quantitatively measure NEMA's conservation efforts as it is the results of how the environment looks is what will determine how far NEMA goes into ensuring the Management of Kenya's environment. There is also no such thing as life without challenges and thus no organization without challenges in its work. Some things relative to the environment transcend national borders for instance climate change, global warming et cetera. Therefore, conservation in Kenya can never be 100% clean or unpolluted.

1.7. Scope of Study

The scope of the study is to look at the conservation efforts of NEMA from its establishment up to now. It is to have an in depth look at how NEMA works and with whom to ensure the Environmental Management of Kenya.

It will look at NEMA as an organization, how it works in terms of conservation as well as the determinants of its conservation efforts relative to the key variables under study which are conservation policy of Kenya, funding, teamwork and human resource skills. It will look at relevant environmental theories to the study, other scholarly work on the issue, conceptual framework and the gaps identified in the study.

It will then look at the research methodology that will be appropriate to be used in conducting a research relative to this proposal with a detailed research design, the target population, location of study, the sampling size and techniques as well as the research instruments to be used. It will thus be an in depth study to determine NEMA's conservation efforts relative to the aforementioned key variables under study.

1.8 Chapter Summary

Chapter one began by looking at the background of study focusing on NEMA as an organization, how it operates, its history and foundation and how it works on a regional and global scale for partnering in conservation matters. It then followed by tackling the statement of the problem thus the purpose of conducting this research on the determinants of NEMA's conservation efforts specifically in Nairobi River. What followed was the formulation of research objectives and research questions for the project based on the topic that is "Determinants of NEMA's Conservation Efforts: A Case Study of Nairobi River. It then looked at the significance of doing this study and the limitation of study. It concluded with the scope of study.

CHAPTER TWO: LITERATURE REVIEW

2.0. Introduction

This chapter will look at the literature review in general. It will first look at the theoretical literature to focus on sustainable development approach for environmental sustainability and the Malthus theory of population and environment so as to focus on better partnerships of NEMA with stakeholders of population control in Kenya to ensure a population that is within the carrying capacity of Kenya for environmental sustainability. It will then focus on the empirical literature review so as to see works of other scholars on the issue being proposed. The conceptual framework will then be formed and a summary of the gaps identified will finish off the chapter.

2.1. Theoretical Literature Review

2.1.1. Sustainable Development Approach

Sustainable Development is an approach to development that seeks to ensure that development of the present takes place without impeding future generations from enjoying the same. It allows for future generations to enjoy and benefit from what the past did meaning that in an environmental context it will be the utilizing the environment presently in a manner that ensures that future generations enjoy the same.

With the concept of environmental sustainability, there are principles of sustainable development that emphasize the theoretical concept of sustainable development. When the concepts are used in environmental sustainability, they highlight the importance of environmental conservation.

Sustainable development and the environment highlights the principle of sustainable utilization and intergenerational equity. This basically means that all the efforts, actions and strategies taken for development by present generations should be able to account for environmental management now and be sustainable enough to be able to allow for the future generations to be able to enjoy the same environment or better.(AQLPA, 2012)

Sustainable development also ensures that there is the public participation in environmental matters. This means that the public should be engaged in activities that aid in sustainable development. The participation should be in all areas from the mere civic engagements and duties to participation in decision making for sustainable development.

Moreover, sustainable development and the environment ensures that the polluter pays. This basically means that whoever is responsible for degrading the environment should be the one to pay for its consequences including both criminal responsibility as well as civic liability. (AQLPA, 2012)

Everyone should be an environmentally responsible citizen and thus the polluter should pay for its actions. This also applies to countries whereby the country pays for pollution through carbon markets.

In addition to that, sustainable development and the environment ensures that there are precautionary measures in place. This is to mean that all precaution measures should be taken before engaging in any actions (social, economic, political et cetera.) that could lead to severe and adverse environmental consequences. The National Environmental Management

Authority of Kenya should follow through this principle for efficiency and effectiveness purposes.

Lastly, sustainable development and the environment ensures that there is the prior consultation and international co-operation. This means that prior consultation with relevant stakeholders should be done beforehand in environmental management. It also distinguishes consultation to be different from agreeing to co-operate and therefore the two go hand in hand to aid in the facilitation of co-operation in environmental management.

Sustainable development approach and the environment thus looks at prevention and conservation of the environment as well as environmental planning for environmental sustainability purposes and thus its importance in environmental conservation.

2.1.2. Malthus Theory of Population and The Environment

The Malthus theory of Population and environment mainly focuses on the dangers of overpopulation especially of the human population on the environment. In Malthus' view, if human population goes unchecked, it will be checked by the effects of overpopulation like chronic starvation due to lack of enough food supplies, diseases, and famine among many others. This is because overpopulation enables for there to be more humans, less space on land for more agricultural produce and the available agricultural produce cannot accommodate the overpopulation of humans. This leads to less food production and inevitably starvation follows and when chronic, human death rate increases. On a more environmental scale, the natural resources become depleted when there is overpopulation as more human beings will want and need to use the resources that were already previously in scarce supply. This leads to environmental degradation as opposed to a more sustainable conserved environment.

Overpopulation will also cause crowding and pollution of the environment will increase and a loss of biodiversity will follow at a higher rate. (Henrik, 2010)

From the Malthus theory of population and environment, it is viewed that the stabilization of population is what will reduce environmental and other social problems. This was due to the fact that lack of control of the population growth leads to a higher population than cannot be sustained by the other. The recommended solution for population control based on this theory were checks that would either increase the death rate or reduce the birth rate of a given human population.

According to Malthus, stabilization of human population could thus only be attained by positive checks or preventive checks (Agarwal, 2018). For the positive checks, it entailed the checks that would increase the death rate of a given human population. These checks involve things like famine and diseases among many other natural calamities whose effect unavoidably ends up wiping out a population of humans among other biodiversity.

On the other hand, the preventive checks involved checks that would end up reducing the birth rate of a given human population (Agarwal, 2018). They are more of voluntary checks by the human beings themselves as opposed to the aforementioned positive checks that inevitably occur. It therefore involves human being more aware and responsible for themselves and their actions when it comes to engaging in sexual acts for whatever reasons whether for pleasure or for childbearing. In this case, they were to either follow a moral compass and wait till marriage to engage in procreation or to be celibate even after marriage until one can be able to sustain their children's life then to start giving birth.

Due to his religious beliefs, Malthus supported the preventive checks idea of moral restraint as opposed to immoral ones. However, due to the modern era and rise of liberal ideas, there's high sexual activity among the youth and therefore the need for birth controls like family planning methods to be of focus so as to cater for stabilizing populations in this era.

Neo-Malthusian theory is however more focused on population and the environment on more specifically issues of environmental degradation and famine among others. Due to the fact that overpopulation inevitably depletes natural resources leading to environmental degradation, the preventive and positive checks that occur are what allow for the population of humans to be reduced to a number that the environment can sustainably accommodate.

2.2. Empirical Literature Review

The empirical literature review looked at the key variables under study relative to NEMA's conservation efforts as follows: Conservation policy of Kenya, funding, teamwork and human resource skills.

2.2.1. Conservation Policy and NEMA's Conservation Efforts

To begin with, the conservation policy of Kenya is given under the national environmental laws. The Environmental Management and Co-ordination Act(EMCA) 1999 is seen to be the framework law of environmental conservation and management in Kenya.(National Council for Law Reporting, 2012)

There are several policies and regulations on the use of the environment, the conservation and management of the environment. These policies focus on different areas therefore their effectiveness can be measured based on their implementation in those areas.

According to a study on assessing impacts of human-elephant conflict on human Well-being, the findings showed that better conservation policies were needed. The study focused on the location of Maasai Mara National Reserve in Kenya highlighting on the communities there living with elephants. Focused group discussions and questionnaires were used to collect samples of data. (Nyumba, 2020)

2.2.2. Teamwork and NEMA's Conservation Efforts

Teamwork is another key determinant of NEMA's conservation efforts. According to the National Council for law Reporting, NEMA partners with Lead Agencies and other Development Agencies to ensure environmental conservation in Kenya for instance United Nations Environmental Programme, United Nations Development Programme and DANIDA among others. (National Council for Law Reporting, 2012) It does so to ensure effective policies are made and partnerships in their implementation but it doesn't work well if other stakeholders from non-environmental organizations aren't directly involved as this only takes them back to the start.

Likewise, co-operation from within an organization is what actually helps it to progress. Without teamwork in any given organization, there's probability for chaos and conflict and thus lower chances of success. According to a study conducted in 2010 based on the challenges

facing the implementation of the Rapid Results Initiative Strategy at NEMA, the findings showed that there was lack of co-operation from the staff. It was noted to be due to the employees' dependence on the old system. The study was a case study that incorporated a descriptive research design and involved interviews conducted on twenty NEMA managers. If NEMA staff had worked on teamwork probably the implementation of the Rapid Results Initiative Strategy would've have gone smoothly. (Tialal, 2010)

2.2.3Funding and NEMA's Conservation Efforts

The lack of or the availability of funding highly determines how far NEMA will go in its efforts to ensure environmental conservation. This is because without funding then the projects will be stalled and new ones cannot be started whereas when there is funding at least the organization's team and staff can plan on what to execute.

From the same aforementioned study on the challenges facing the implementation of the Rapid Results Initiative Strategy at NEMA, inadequate funds were seen to be another predominant challenge. (Tialal, 2010) This means that there were funds but they were not enough to help in effectively implementing that strategy.

Another study conducted on planning for sustainable utilization and conservation of urban river corridors in Kenya: A case study of the Nairobi river had finding of NEMA having insufficient funds. The study was a case study and utilized purposive sampling, stratified sampling and systemic sampling. Survey was used to collect data throughout the entire research.

There is therefore not enough of funding for NEMA to carry out its conservation duties. (Gikundi, 2014)

2.2.4. Human Resource Skills and NEMA's Conservation Efforts

Lastly, on human resource skills, NEMA has several challenges. The human resource available in NEMA mostly operates based on management through bureaucracies and administration because there are procedures and protocols to be followed. The human resource available can ensure that effective and efficient policies on the environment are made in Kenya but the implementation of those policies are seen to be quite a challenge (Kakongwe, 2015).

The same study on the challenges facing the implementation of the Rapid Results Initiative Strategy at NEMA also found that there was 'poor strategic planning and inadequate staff'. To mean that the human resource available isn't enough and the ones present couldn't plan properly. (Tialal, 2010)

Another aforementioned study on planning for sustainable utilization and conservation of urban river corridors in Kenya also gave findings that there was neglect by NEMA in the management of the Nairobi river corridor hereby leading to its degradation. The study was a case study and utilized three sampling techniques that are purposive sampling, stratified sampling and systemic sampling. Survey was used throughout the research to collect data.

This shows that human resource skills are another challenge when NEMA engages in activities in efforts to ensure environmental management and conservation.

Another study of also came to the conclusion that human resource skills are a challenge in NEMA's efforts to implement their projects.

2.3. Summary of Gaps Identified

There are gaps identified from the literature review and are as follows:

Partnerships of NEMA are mostly with development and lead agencies as well as other Environmental organizations. The main issue is teamwork within the organization and how effective the staff are when it comes to working on conservation thus a challenge.

There are insufficient funds available to enable NEMA to fully carry out conservation in Kenya. Most of the studies done gave this finding thus another gap to be looked at.

The conservation policies of Kenya also cover a lot. There are several policies for various environmental conservation types like wildlife conservation policy among others. The only issue here is that some of those policies need to be amended.

2.4. Conceptual Framework

The conceptual framework thus formed from the above on the approach by NEMA to conservation in Kenya. Given the concept of Sustainable development and the environment and the gaps identified, NEMA should follow a more environmentally sustainable approach in its conservation efforts. It should also partner well with stakeholders of population control in Kenya so that there is an optimum population in Kenya within its carrying capacity. This will aid in preserving natural resources as they will not be depleted from an overpopulation and reducing pollution of the environment from congestion due to an overpopulation.

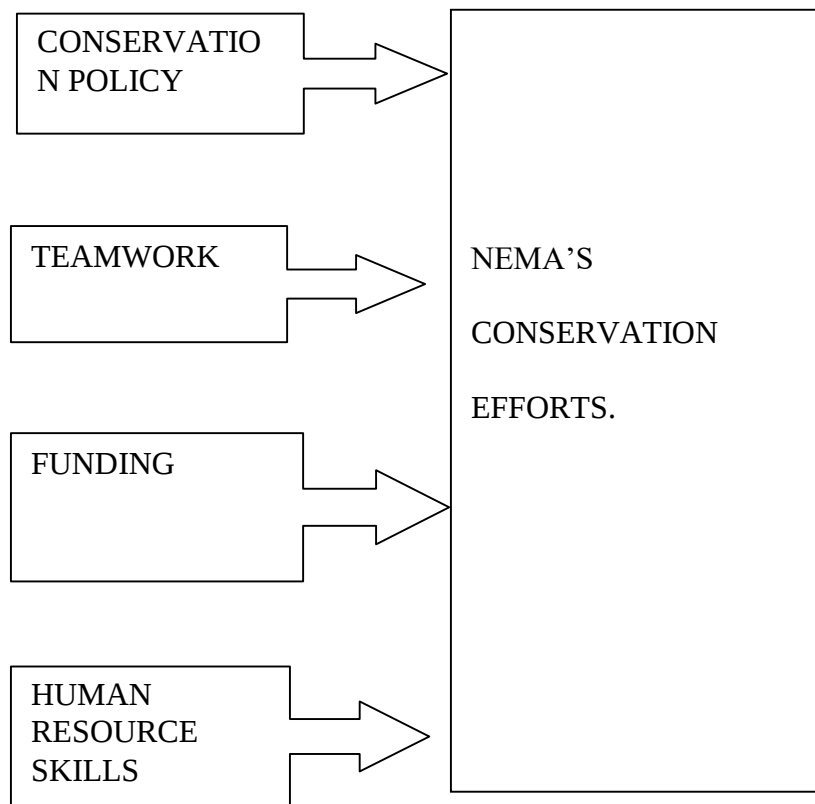


Figure2.1: Conceptual framework

2.5 Operationalization of Variables

The diagram above represents the conceptual framework. The conceptual framework is used to denote the independent and dependent variables. From this study, NEMA's conservation efforts depend on teamwork, conservation policy, availability of funding and human resource skills. The four key variables under study were being studied to see how they affect NEMA's conservation efforts. Therefore, the diagram shows relationship between independent and dependent variable thus forming the conceptual framework.

2.6 Chapter Summary

The following chapter was tackling the literature review of this study. It started by tackling the theoretical literature review and here two theories were used which were the sustainable development approach and the Malthus theory of population. It then looked at the empirical literature review which focused on previous studies relative to the objectives under study which were teamwork and NEMA's conservation efforts, funding and NEMA's conservation efforts, conservation policy and NEMA's conservation efforts and lastly human resource skills and NEMA's conservation efforts. It then gave the summary of gaps identified from the empirical literature review and then the conceptual framework was formed. The chapter finally then looked at the operationalization of variables and chapter summary.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0. Introduction

The following chapter looked at the research design of this project, the research methodology that was incorporated in the study, the location of study and the target population. It also looked at all sampling techniques that were used as well as the sampling size, the research instruments, the data collection techniques and lastly the ethical considerations for this project.

3.1. Research Design

The research design that was used was a case study research design. It was appropriate for the project as the research strategy is to be an empirical research which investigates an occurrence in a real-life setting. In this case, the design used was suitable to research on the determinants of NEMA's conservation efforts.

3.3. Location of Study

The location of study for this case study was Nairobi. Nairobi river was the cite of location of study. It was a suitable location because it was best for analyzing the depth and determinants of NEMA's conservation efforts in Nairobi. The characteristics unique to the cite that were relevant for the study were the locations near Nairobi river that made it easier to identify indicators of conservation efforts within geographically bounded areas in Nairobi. The NEMA Project "Adopt a River" also helped in the analysis of NEMA's conservation efforts in Nairobi River.

3.3. Target Population

The target population entailed primary samples of people from areas near Nairobi river in Nairobi county. These people were residents and students living and schooling near Nairobi River. The choice of this target population was suitable because it gave appropriate primary data on the conservation efforts of NEMA in Nairobi River.

3.4. Sample Technique and Size

The sampling technique that was used for this research is purposive sampling. This sampling technique was used to check on the conservation indicators in Nairobi river relative to NEMA. It was a suitable technique given that the objects under study could be identified. The sampling size for this entire research was 30 people. It also included samples from desktop research because it entailed various units of analysis based on the variables under study.

3.5. Research Instruments

The research instrument that were used were interviews and desktop research. The people that were interviewed included the residents and students near Nairobi river so as to fulfill two objectives of the study that is to find out how team work affects NEMA's conservation efforts and to find out how the human resource skills affects NEMA's conservation efforts.

On the other hand, desktop research was used to determine how the conservation policy of Kenya affects NEMA's conservation efforts and the lack thereof or the availability of funding affects NEMA's conservation efforts.

These two research instruments helped in fulfilling the objectives under study.

3.6 Data Analysis and Presentation

The method of data analysis that I used for this project was interview guides and schedules. I interviewed thirty people as follows: fifteen students and fifteen residents schooling and living near Nairobi River. The interview guide and schedule entailed a close-ended questionnaire that I used to gather data for my findings for this project.

In terms of presentation, I tabulated my findings and used different tables to show the results in numeric and percentage forms.

3.7. Ethical Considerations

3.7.1. Informed Consent

There was informed consent when conducting the interviews in that I clearly explained to the people who I interviewed about this project, what it entailed and what the questionnaire was about. I made sure to tell them that they can choose not to do the interview if they did not wish to do so. They read all the questions before answering them so that they could decide if they wanted to do the interview or not.

3.7.2. Voluntary Participation

All the interviews I conducted were out of one's own volition. The people who participated were not forced to come rather they did so voluntarily. They participated as so knowing what they were getting into. This means that they voluntarily participated in the interviews that I conducted.

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3.7.3. Confidentiality

The people who participated in this interviews have a right to confidentiality. I acknowledge that the information they gave me was only used for purposes of this project only. Their information was not shared elsewhere or to the public or misused et cetera. All the information obtained remained confidential for the purposes of ethical considerations.

3.7.4. Privacy

The people who participated in these interviews have a right to privacy. I did not disclose any of their information with random people or to the public or anyone else. Their responses were only used in this project. I hereby declare that the students and residents that I interviewed had their privacy rights upheld.

3.7.5. Anonymity

The students and residents schooling and residing near Nairobi river who participated in this interview had the right to choose to remain anonymous in their responses if they wished to. They could do so by ticking anonymous in the questionnaire. I did not force anyone to give their personal information in terms of names et cetera. If they wanted to write their names they could do so but if they did not wish to write their names, then they could remain anonymous.

3.8 Chapter Summary

The following chapter was tackling research methodology. It began by looking at the research design. The research design chosen for this project was a case study research design. It then looked at the location of study which was seen to be Nairobi River. Then it followed by looking at the target population and sample size. The target population and sample size entailed a sample of 30 people who were 15 residents and 15 students who were living and schooling

near Nairobi River. The sampling technique used was purposive sampling. After that, it looked at the research instruments that entailed interviews with a close ended questionnaire and some desktop research. Then followed the data analysis and presentation which were interview guide and schedule. It finishes by tackling the ethical considerations that included privacy of the people interviewed, anonymity of the people interviewed, confidentiality of the people interviewed, voluntary participation of the people interviewed and informed consent of the people interviewed.

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSIONS

4.0 Introduction

This chapter will look at the findings and their interpretations. It shall follow guidelines as from the literature review and the four objectives under study. This chapter will thus look at whether or not the availability or lack thereof funding affects conservation efforts, whether or not teamwork affects NEMA's conservation efforts, whether or not human resource skills and conservation policy affect NEMA's conservation efforts. All these findings will be based on samples of residents and students who reside and school near Nairobi river.

4.1 Research Findings and Discussions

4.1.1 Findings Based on Teamwork

There was a lot of work to be done so as to ensure the conservation of Nairobi River. The staff of NEMA was supposed to work together so as to ensure that this is achieved. From the interviews, the students were a bit hopeful of NEMA's teamwork though they thought some improvements could be done. The residents were certain that there is less teamwork in terms of decision making and following the targets and goals of NEMA in ensuring the conservation of Nairobi River.

Table 4.1 below illustrates the findings based on teamwork as per the interviews conducted on the students and residents schooling and living near Nairobi River.

	NEMA staff follows targets and goals	NEMA staff has uniform Decision-making
No of students who agree	6	7
No of students who disagree	9	8
No of residents who agree	5	4
No of residents who disagree	10	11
TOTAL	30	30

Table 4.1: Findings based on teamwork.

In table 4.1 above, 6 students agreed that NEMA follows targets and goals whereas 9 students disagreed to that. Likewise, 5 residents agreed that NEMA follows targets and goals to aid in the conservation of Nairobi River whereas 10 residents disagreed to that. The total number of people who thus gave responses based on NEMA's staff following targets and goals were 30.

Similarly, 7 students agreed that NEMA's staff has a uniform decision-making whereas 8 students disagreed and 4 residents agreed that NEMA's staff has a uniform decision making whereas 11 residents disagreed to that. The total number of students who thus gave responses based on NEMA's staff having uniform decision making were 30.

The people who gave these responses were thus a total of 30.

Table 4.2 below gives an illustration of the findings of table 4.1 in terms of percentages.

	NEMA's staff follows targets and goals		NEMA's staff has uniform decision making	
No of students who agree	$(6 \div 30) \times 100$	20%	$(7 \div 30) \times 100$	23.33 %
No of students who disagree	$(9 \div 30) \times 100$	30 %	$(8 \div 30) \times 100$	26.67 %
No of residents who agree	$(5 \div 30) \times 100$	16.67 %	$(4 \div 30) \times 100$	13.33 %
No of residents who disagree	$(10 \div 30) \times 100$	33.33 %	$(11 \div 30) \times 100$	36.67 %
Total		100 %		100 %

Table 4.2: Findings based on Teamwork in terms of percentages.

The findings from Table 4.2 can be explained below as follows:

From the above findings, 20 % of students agreed that NEMA's staff follows targets and goals whereas 30 % of students disagreed to that and 16.67 % of residents agreed that NEMA's staff follows targets and goals whereas 33.33 % of residents disagreed to this. The total percentage based on NEMA's staff following targets and goals was 100 %.

Likewise, 23.33 % of students agreed that NEMA's staff has uniform decision making whereas 26.67 % of students disagreed to that and 13.33 % of residents agreed that NEMA's staff has uniform decision making whereas 36.67 % of residents disagreed to that. The total percentage based on NEMA's staff having uniform decision making was 100 %.

The total percentage from these findings based on teamwork was thus 100 %.

It was clear that majority of the people gave the report that teamwork was not prioritized.

4.1.2 Findings Based on Conservation Policy

The conservation policy of Kenya is very broad and has detailed explanations of specific conservation areas and the regulations to be adhered to. In order to ensure conservation of Nairobi River, the staff of NEMA have to follow the guidelines as per the conservation policy of Kenya. From the interviews, the students and residents all agreed that the conservation policy of Kenya was efficient to aid in the conservation of Nairobi river among other areas. The staff follows the guidelines and try to implement the policy on the ground.

4.1.3 Findings Based on Funding

Funding is a big factor when it comes to ensuring the implementation of projects. Without funding, there will be no progress in projects. It is noted that people can only work with the funds that are available. This means that some financial challenges could arise when NEMA operates on the issues of Nairobi River. They therefore have to create a budget and work on some of the issues using the funds available. It was conclusive that there isn't sufficient funding to be able to completely deal with the entirety and severity of the issues of Nairobi River.

4.1.4 Findings Based on Human Resource Skills

The skillset of NEMA's staff is quite vital in ensuring the implementation of NEMA's projects. When NEMA's staff go to the field to carry out projects, the people will know if they are doing

the work well and the outcome of the projects will say it all. From the interviews, the residents and students gave the conclusion that NEMA's staff was qualified to do the job probably other challenges made it difficult for them to effectively implement NEMA's projects.

Table 4.2 below illustrates the findings based on human resource skills as per the interviews conducted on students and residents schooling and living near Nairobi River.

	NEMA's staff frequently visits Nairobi River.	NEMA's staff is accountable to the public	NEMA's staff do their job well
No of students who agree	4	6	6
No of students who disagree	11	9	9
No of residents who agree	2	7	8
No of residents who disagree	13	8	7
Total	30	30	30

Table 4.3: Findings based on Human Resource Skills.

An explanation for this table is as follows:

In the above table, 4 students agree that NEMA's staff frequently visit Nairobi River whereas 11 students disagree with that and 2 residents agree that NEMA'S staff frequently visit Nairobi

River whereas 13 residents disagree with that. The total number of people who thus responded based on NEMA frequently visiting the location is 30.

Similarly, 6 students agree that NEMA's staff is accountable to the public whereas 9 students disagreed with that and 7 residents agreed that NEMA's staff is accountable to the public whereas 8 residents disagreed with that. The total number of people who thus responded based on NEMA's staff being accountable to the public is 30.

Lastly, 6 students agree that NEMA's staff do their job well whereas 9 students disagree with that and 8 residents agree that NEMA's staff do their job well whereas 7 residents disagree with that. The total number people who thus responded based on NEMA doing the job well is 30.

The responses were all from the same people doing an interview based on a closed-ended questionnaire thus giving a total of 30 interviewed people.

Table 4.4 below gives an illustration of the above in percentage form

	NEMA's staff frequently visits location		NEMA'S staff is accountable to the public		NEMA's staff does their job well	
Students who agree	$(4 \div 30) \times 100$	13.33 %	$(6 \div 30) \times 100$	20 %	$(6 \div 30) \times 100$	20 %
Students who disagree	$(11 \div 30) \times 100$	36.67 %	$(9 \div 30) \times 100$	30 %	$(9 \div 30) \times 100$	30 %
Residents who agree	$(2 \div 30) \times 100$	6.67 %	$(7 \div 30) \times 100$	23.33 %	$(8 \div 30) \times 100$	26.67
Residents who disagree	$(13 \div 30) \times 100$	43.33 %	$(8 \div 30) \times 100$	26.67	$(7 \div 30) \times 100$	23.33%
Total		100%		100 %		100%

Table 4.4: Findings based on Human Resource Skills in terms of Percentages.

The table 4.4 above can be explained as follows:

In the above diagram, 13.33 % of students agree that NEMA's staff frequently visit Nairobi River whereas 36.67 % of students disagree to this and 6.67 % of residents agree that NEMA's staff frequently visit Nairobi River whereas 43.33 % disagree to this. The total number of percentage based on NEMA's staff frequently visiting the location is 100 %.

Likewise, 20 % of students agree that NEMA's staff is accountable to the public and 30 % of students disagree to this and 23.33 % of residents agree that NEMA's staff is accountable to the public whereas 26.67 % of residents disagree to this. The total percentage based on NEMA's staff being accountable to the public is 100 %.

Similarly, 20 % of students agree that NEMA's staff does their job well whereas 20 % of students disagreed to that and 26.67 % of resident agreed that NEMA's staff does their job well whereas 23.33 % of residents disagreed to this. The total number of percentage based on NEMA's staff doing their job well is 100 %.

The total percentage from the study therefore is 100 percent.

4.2 Limitations of Study

The limitations to this study are as follows:

Firstly, there was a short time to do the study. There is a given the timeframe given to complete the school project with a deadline because it is an exam. Therefore, one may not necessarily have all the time to deeply conduct a study utilizing very many people and one is only limited to a specific topic.

Secondly, the COVID 19 pandemic was another major limitation of study. When the COVID pandemic took over there was a lot of chaos, frustrations, challenges and many restrictions and curfews. This was a hindrance as one could not just move around easily or anywhere. The restrictions from the pandemic prevented one from talking to many people so as to prevent the spread of the disease. One could not thus talk to many people and therefore the sample size used in this project had to be small. Given that I was conducting personal interviews on 30 people, it was a risk because one could get infected with COVID easily.

Moreover, the study only focused on a few people. This was a major limitation of study because few people mean that there will be a probability of flawed results. This is due to the fact that few samples only give limited results as it's the point of view on only a few people. The chances of those few people being biased is very high because its only few people doing the interviews. It is thus a limitation of study because probably a broader sample could have given different results on NEMA's conservation efforts as there would be results that are more diverse.

In addition to that, the questionnaire used was a close-ended questionnaire. This was a big limitation of study because a close-ended questionnaire only limits people to give narrowed down answers of just yes or no. This means that people will just tick what they feel best fits the answer that is a yes or a no. If the questionnaire was open ended the people who were interviewed would have gotten the opportunity to answer in a more descriptive manner so that they can really point out the challenges they feel that NEMA has in the conservation of Nairobi river. The use of a close-ended questionnaire was therefore a huge limitation of study.

Furthermore, the objectives under study were also another limitation of study. There were four objectives under study as follows: to find out how teamwork affects NEMA's conservation efforts, to find out how conservation policy affects NEMA's conservation efforts, to find out how the lack of or the availability of funding affects NEMA's conservation efforts and to find out how human resource skills affects NEMA's conservation efforts.

These objectives were relevant to the study but when it came to research methodology, this is where the problems arose. It was a bit difficult to measure how conservation policy affects NEMA's conservation efforts because this is something that the people cannot really give responses based on observations. On the other hand, the residents and students that I interviewed could easily observe how NEMA's staff work and give you their opinions on what

they see based on the human resource skills of NEMA's staff and how well NEMA's staff work together that is teamwork.

Another major challenge with the objective under study is that it's difficult to measure how funding affects NEMA's conservation efforts. This is because I interviewed students and residents schooling and living near Nairobi River and not NEMA's staff. The staff of NEMA would have been better to give us more details on how much funding they get and how they budget it. The results therefore could be of what the people were told or heard or word on the streets as opposed to actual funding that NEMA gets.

The fact that my interviews were limited to residents and students near Nairobi River was also a challenge. It would have been great to also get NEMA's point of view on how teamwork within the organization affects their conservation efforts, how the availability or lack of funding affects their conservation efforts, how the conservation policies in Kenya affect their conservation efforts and how the human resource skills of their staff affects their conservation efforts. If NEMA's staff had been interviewed either with the same questionnaire or a different one, there would have been completely different results for the findings in this project. They would have given their points of views and deeply explain their issues. Probably, they know best their situations as compared to how the community and the public perceives them in terms of their projects.

Another major limitation to the study was the fact that I used a simple data collection tool. This was a limitation as interviews only may not give proper results. There could have been better questions for the interviews or even open ended questions. If other data collection tools could have been used there would have been different results. The results could have been large or small or even diverse. However, because this study was only limited to these interviews that

were conducted on students and residents schooling and living near Nairobi River due to the short timeframe then these are the results that we got from the people interviewed.

Lastly, the sample only entailed students and residents. This was a huge limitation of study because it only gave the points of views of those students and residents. If the sample size had other groups of people involved like for instance people who work near Nairobi River, the city council of Nairobi, non-governmental organizations and community based organizations that have worked on projects on Nairobi River et cetera, there would have most definitely produced different results in the findings. There could have been different conclusions and recommendations to be made as well. The sample used therefore was another limitation of study.

4.3 Chapter Summary

The following chapter looked at the research findings. There were findings based on team work. These findings were both in terms of numbers and percentages with tables included to illustrate that. There were also findings based on conservation policy as well as findings based on funding that were well explained. Lastly there were findings based on human resource skills and these findings were also in both numerical and percentage forms. There are tables to represent these findings based on human resource skills. Lastly, this chapter tackled the limitations of this study in an in depth manner.

CHAPTER FIVE: SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

5.1 Introduction

The following chapter will look at the summary of all findings as aforementioned in chapter four. It will then give recommendations for a way forward based on the findings. It will then look at the conclusions drawn from this project.

5.2 Summary of Findings

The summary of findings as from this project are thus as follows:

Firstly, NEMA has challenges in terms of teamwork. This was in particular noted to be when it comes to the implementation of projects. The teamwork issue that majority of the findings revealed from the people who were interview is that teamwork is a challenge especially when it comes to decision-making and the following of targets and goals of NEMA in their efforts to conserve Nairobi River.

Secondly, NEMA works well with the conservation policy available. This was seen to be okay because majority of people felt like the conservation policy of Kenya is okay and NEMA strives to follow it when it comes to implementation of their projects in this case the conservation of Nairobi River. From the finding, it can be concluded that the conservation policy of Kenya is effective as it has detailed explanations of specific environmental matters and that NEMA can use it in the conservation of Nairobi River.

Thirdly, there is not sufficient funds to be able to fully carry out environmental conservation in Nairobi river. The conservation of Nairobi river requires a lot of money for it to be completely and effectively dealt with. Without funding, there will be no projects to be done as

the availability of finances play a major role in the implementation of projects. From the findings in chapter four based on the interviews conducted on the residents and students who reside and school near Nairobi River, NEMA does not have that capacity in terms of funding to be able to effectively and completely deal with the conservation of Nairobi River.

Lastly, the human resource and staff of NEMA need to improve on some of their skills. From They can work well in terms of following bureaucracies and physically working on the locations that they are implementing projects. From the findings, it was clear that they however need to work on more trainings for better and faster technologies to be able to help them effectively implement their projects. The people interviewed felt like it was best for NEMA to especially incorporate this when doing conservation projects in Nairobi River.

5.3 Recommendations

The following are the recommendations as per the study:

Firstly, NEMA's staff have to work on their teamwork. If they have a uniform decision making and they follow their targets and goals when implementing projects, they will go very far in terms of conservation. Teamwork is what actually helps organizations to get far in their work. A lack of team work is very likely to create chaos and disorganization within a given organization.

Secondly, NEMA has to improve the skillset of its human resource. NEMA should offer more trainings and incorporation of better technology in ensuring the conservation of Nairobi river.

These trainings will equip the staff of NEMA with skills that will aid in effectively conserving Nairobi River. The better technology will help in making it easier to carry out complex conservation issues in Nairobi River.

Moreover, NEMA has to strive to source for more funds. The more funds NEMA gets the better NEMA can budget for conservation projects. This will be great in ensuring that they can use the money to help in the implementation of conservation projects like project “Adopt a river” in Nairobi River. When they get more funds they will be able to allocate funds to different issues of Nairobi river without having the scarcity mindset when budgeting.

Lastly, NEMA should continue working well by following the guidelines of the conservation policy of Kenya. There are many policies in terms of conservation relative to a particular subject for instance wildlife conservation policy, the conservation of rivers et cetera. From the findings, the people interviewed agreed that the conservation policy is well explained, broad and detailed to aid in the conservation of Nairobi River. Therefore, NEMA should continue using it.

5.4 Conclusions

From this project, the following conclusions have been drawn:

Firstly, the staff of NEMA strives to work together every day so as to ensure teamwork in carrying out NEMA’s projects. However, certain challenges come about in terms of decision making and the following of set out targets and goals therefore hindering proper teamwork. Human beings are not perfect and may not always agree on what to do even when it comes to implementing projects.

Secondly, the conservation policy of Kenya is very broad and clearly illustrates what needs to be done in order to achieve conservation of the environment of Kenya. The policies relative to

conserving the environment both national and international are well outlined and point on specific environmental concerns. The conservation policy of Kenya is thus effective in ensuring NEMA's conservation efforts.

Moreover, there is insufficient funds to aid in the conservation of Nairobi river. The problems and challenges facing Nairobi river are too many and complicated for them to be outdone easily. It will require a lot of money to be able to fully outdo them. NEMA doesn't have such kind of money and only work with what they have and then improvise other ways to do the project without needing money. Therefore, there are insufficient funds for NEMA to be able to fully carry out its conservation duties in Nairobi River.

Lastly, the human resources of NEMA are quite skilled in their work when it comes to conservation. They can do a number of works to be able to help a bit with the conservation of Nairobi river. However, they may require some training and the incorporation of new technological methods to help in implementing their policies in terms of conservation.

The following chapter was tackling the summary of findings, recommendations and conclusions. It first looked at the summary of findings looking at each variable under study which are findings based on teamwork, findings based on conservation policy, findings based on funding and findings based on human resource skills. It then followed by looking at the recommendations to NEMA and a way forward for them in terms of their conservation efforts in Nairobi River. Lastly it looked at the conclusions from the findings and recommendations.

APENDIX 1: INTERVIEW GUIDE AND SCHEDULE



INTERVIEW SCHEDULE AND CONSENT FORM FOR A PROJECT CONDUCTED BY FAITH RONO ON THE DETERMINANTS OF NEMA'S CONSERVATION EFFORTS: A CASE STUDY OF NAIROBI RIVER.

A. CONSENT

I hereby consent to voluntarily participate in the following interview for purposes of the completion of this project only. The answers given will be based on my point of view on the condition of Nairobi River. If I wish to remain anonymous I will tick below on the personal details.

Signature: _____

B. PERSONAL DETAILS

NAME: _____

ANONYMOUS: ☐

AGE:

STUDENT: ☐

RESIDENT ☐

C. QUESTIONS

The following questions are close ended and one should tick the box one feels best describes one's answer.

1. Have you resided? Schooled near Nairobi River for more than one year?

YES: ☐

NO: ☐

2. Have you noticed any improvement in the condition of Nairobi River since your residing/ schooling here?

YES: ☐

NO: ☐

3. Does NEMA's staff follow targets and goals to aid in the conservation of Nairobi River?

YES: ☐

NO: ☐

4. Does NEMA's staff frequently visit Nairobi River for conservation purposes?

YES: ☐

NO: ☐

5. Does NEMA's staff have uniform decision making when it comes to the conservation of Nairobi River?

☐

YES:

NO:

6. Do you think the conservation policy of Kenya is effective to be used in conservation projects in Kenya?

YES:

NO:

7. Do you think NEMA has the capacity to deal with the challenges facing Nairobi River in efforts to ensure conservation in Kenya?

YES:

NO:

8. Do you think NEMA has enough funding to deal with the conservation challenges of Nairobi River?

YES:

NO:

9. Do you think more funds should be allocated to the conservation of Nairobi River?

YES:

NO:

10. Does NEMA's staff do their job well when it comes to the conservation of Nairobi River?

YES:

NO:

11. Do you think that NEMA's staff is accountable to the public based on the conservation of Nairobi River?

YES:

NO:

12. Do you think that NEMA should incorporate other ways of dealing with the conservation of Nairobi River?

YES:

NO:

REFERENCES

- Agarwal, P. (2018). *Malthusian Theory of Population*. Intelligent Economist.
- AQLPA. (2012). *Sustainable Development Principles*. Report on the SEA working Plan.
- Henrik. (2010). *Malthusian Theory: Population Growth and the Environment*.
- Kakongwe, J. (2015, October). *Environmental Impact Assessment: Why it Fails in Kenya*.
- Kithika, J. (2009). *Environmental Laws in Kenya*.
- National Council for Law Reporting. (2012). *Environmental Management and Co-ordination Act CAP 387*.
- Gikundi, J. (2014). *Planning for Sustainable Utilization and Conservation of Urban River Corridors*. Nairobi: University of Nairobi.
- .
- Mbui, D. (2016, December). *The State of Water Quality in Nairobi River, Kenya*: Asian Journal of Research.
- Nyumba, T. (2020). *Assessing Impacts of Human-Elephant Conflict on Human Well-being: An Empirical Analysis of Communities Living with Elephants around Maasai Mara National Reserve*.

Sobawale, O. (2019). *River Restoration in Nairobi, Kenya: Exploring Public Participation and Learning Outcomes*. University of Manitoba.

Kinyanjui, A. (2011, October). *Impact of Water Pollution in Nairobi River, Kenya*. Kenyatta University.