

**EFFECTIVENESS OF THE ECOCENTRIC GOAL OF EDUCATION  
AND POLICIES IN RELATION TO SUSTAINABLE  
ENVIRONMENTAL PROTECTION IN KENYA**

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**MAY, 2022**

## STUDENT'S DECLARATION

I confirm that this research thesis is my original work and has not been presented in any other university/institution for certification. This thesis has been complemented by referenced sources duly acknowledged. Where text, data, graphics, pictures or tables have been borrowed from other works- including the Internet, the sources are specifically accredited through referencing in accordance with anti-plagiarism regulations.

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## **DEDICATION**

This work is specially dedicated to my late grandmother, Mary Katani Mutua, who at one time confessed that I would come this far in education.

*“Education is the most powerful weapon you can use to change the world,”*

{Nelson Mandela; Former President of the Republic of South Africa}

&

*“We won’t have a society if we destroy the environment.”*

{Margret Mead, American Cultural Anthropologist (1901-1978)}

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## **ABBREVIATIONS AND ACRONYMS**

<b>AIDS</b>	Acquired Immune Deficiency Syndrome
<b>CEP</b>	Centre for Environmental Philosophy
<b>EA</b>	Environmental Audit
<b>EEA</b>	Environmental Evidence Australia
<b>EIA</b>	Environmental Impact Assessment
<b>EMCA</b>	Environmental Management and Co-ordination Act
<b>EPI</b>	Environmental Performance Index
<b>ESD</b>	Education for Sustainable Development
<b>FAO</b>	Food and Agriculture Organization
<b>GDP</b>	Gross Domestic Product
<b>HIV</b>	Human Immunodeficiency Virus
<b>KFS</b>	Kenya Forest Service
<b>KWS</b>	Kenya Wildlife Services
<b>MCS</b>	Multi-sectoral Communication Strategy
<b>MDG</b>	Millennium Development Goal
<b>MoE</b>	Ministry of Education
<b>MoEF</b>	Ministry of Environment and Forestry
<b>MoEWNR</b>	Ministry of Environment, Water & Natural Resources

<b>NECC</b>	National Environmental Complaints Committee
<b>NEMA</b>	National Environment Management Authority
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>SAGA</b>	Semi-Autonomous Government Agency
<b>SDGs</b>	Sustainable Development Goals
<b>UN</b>	United Nations
<b>UNCSD</b>	United Nations Conference on Sustainable Development
<b>UNDP</b>	United Nations Development Programme
<b>UNEP</b>	United Nations Environment Programme
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>UNICEF</b>	United Nations International Comparison Programme
<b>UNODC</b>	United Nations Office on Drugs and Crime
<b>USEPA</b>	United States Environmental Protection Agency
<b>USGAO</b>	United States General Accounting Office
<b>WHO</b>	World Health Organization
<b>WRA</b>	Water Resources Authority

## ABSTRACT

Natural environment and resources are valuable assets that a country has no choice but to sustainably manage for the present and future generations. Kenya as a country has an ecocentric goal of education and policies for sustainable environmental protection that are intended to provide the foundation upon which sustainable use of natural resources is to be based. The implementation of the ecocentric goal and related policies were anticipated to culminate in developed values and skills for promoting citizens' awareness, commitment and participation in sustainable development. However, despite this undertaking, institutional reports and observations indicate despicable trend of Kenya's environmental degradation over the decades. This trend has made Kenya rank poorly in EPI, being position 130 out of 180 in 2018. Accordingly, this study investigated the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. It explored the nature of the ecocentric goal of education and policy measures on sustainable environmental protection; assessed the effectiveness of the implementation of these measures; determined the underlying factors for incessant environmental degradation despite these measures; and recommended applicable alternative strategies to supplement for effective implementation of the ecocentric goal of education and policies towards sustainable environmental protection in light of *Environmental Citizenship* :a theory that explains citizenry practices that reflect environmental ethics and responsibility in view of values, attitudes and skills for sustainable environmental protection. The study design was a mixture of descriptive and philosophical approaches. The target population included government officers from MoEF, KFS, KWS, NEMA, WRA, Environment Departments from the 47 Counties and general citizens. Secondary data were from institutional reports (document analysis) while primary data were from descriptive interview sessions with the officers and citizens. Purposive sampling was used to select the documents analysed and officials interviewed, while the citizens were snowballed. A sample size of 119 respondents was used. Conceptual and phenomenological analyses were used to interrogate the descriptive experiences of the respondents and institutional reports, interpret implications and recommendations. The study found out that the implementation of the ecocentric goal of education and policies has been ineffective: the citizens incessantly degrade the environment. The factors behind the unabated environmental destruction being: institutional incapacity, low level of conscientization, and indecorous public governance. Thus, the implementation of the goal and policies has not enabled citizenry consciousness, commitment and participation for sustainable environmental protection. It therefore requires enhanced conscientization and enculturation that should transmute Kenyans into environmental citizens through: increased institutional capacity and expanded legal frameworks, coupled with concerted citizenry involvement, to enable citizens' commitment and participation in sustainable environmental protection. The findings and recommendations should form the basis of future reflection that implementation agencies ought to follow in their mandated tasks.

# **CHAPTER ONE**

## **INTRODUCTION AND BACKGROUND OF THE STUDY**

### **1.1 Introduction**

This chapter covered: the background information of the study; the statement of the research problem; the purpose of the study; objectives and research questions. Further, the significance; limitations, and delimitations; assumptions, theoretical and conceptual frameworks of the study were also presented prior to the definitions of operational key terms in this study.

### **1.2 Background to the Study**

The environment plays a very vital role in human lives, both physically and mentally. Living in a polluted area does cause many health concerns that can easily harm and reduce human lives. Damage to the environment does not only cause obstacles to sustainable economic development but also poses great threats to human health and life, ecological systems and the natural world. A polluted environment also affects the socio-cultural environments in which human beings live, (Lu, 2011). Generally, with the remarkable expansion in sphere and scale of human activities triggered by globalization, global environmental problems such as climate change and the loss of biological diversity have been considered as a threat to the earth and mankind, (Avenell, 2017).

Concerns about environmental degradation and sustainable development have grown steadily over the last few decades, especially as economic growth becomes increasingly dependent on the exploitation of natural/biological resources. The main characteristics of such environmental degradation include overexploitation, industrial pollution,

deforestation, soil erosion, desertification, loss of biodiversity, water scarcity and degraded water quality, poaching, and domestic and industrial pollution, (Failler, et al, 2016). It is thus a human duty to keep our environment clean, free from dirt and avoid things that can cause it to become polluted. Taking care of the planet Earth is a responsibility and should be an honour for all human beings. It thus, called for both public and institutional leadership that was conscious of and exemplary in both commitment and participation in environmental sustainability.

Global warming, being one of the biggest threats we face, was unfortunately getting intensified with time. The more humans pollute the environment, the more intense global warming will be. Hence, the future of the earth is in human hands, (Grinspoon, 2016). During the Millennium Summit held at the UN headquarters in New York in 2000, world leaders committed their nations to what was called a new global partnership. This commitment was meant to reduce extreme poverty and set out a series of time-bound targets: *the UN Millennium Declaration on MDGs*. The set MDGs had eight objectives that outlined the efforts that should be put in place in order to reduce or completely eradicate the pangs of extreme poverty by the year 2015, (UNDP, 2000). The seventh MDGs' goal was on environmental sustainability that integrated the principles of sustainable development with countries' policies and programmes. This was intended to protect the loss of environmental resources, (FAO, UNEP, WHO, UNICEP, 2000).

In yet another United Nations Conference on Sustainable Development of June 2012, commonly referred to as the RIO + 20 in Brazil, UNDP's Report to the Secretary General on *Realizing the Future We Want for All*, recommended that "new goals should be built

on the strengths of the MDGs, apply to all countries, and be based on the fundamental principles of human rights, equality and sustainability”, (UNDP, 2012). This Rio + 20 Conference aimed at reconciling the economic and environmental goals of the global community. The conference had three goals, namely, securing renewed political commitment for sustainable development, assessing the progress and the implementation gaps in meeting previous commitments and addressing new and emerging challenges, (UNCSD, 2012). In September 2015, leaders from 193 countries of the world met at the United Nations’ headquarters, New York, for its 17<sup>th</sup> anniversary. They decided and committed themselves to new global goals, that is, sustainable development goals (SDGs). These SDGs are seventeen-fold associated with 169 targets. The SDGs were to build on the MDGs and complete what they did not achieve, (UNDP, 2015).

The goals and targets were to stimulate action till 2030 in areas of critical importance for humanity and the planet Earth. These critical areas included the people, planet, prosperity, peace and partnerships. In respect to the planet Earth, nations of the world were determined to protect her from degradation through sustainable consumption and production, sustainably managing her natural resources and taking urgent action on climate change, so that she can support the needs of the present and future generations, (United Nations, 2015). To this end therefore, the need to protect the environment for sustainable development had increasingly been recognized, (Lu, 2011). Consequently, countries, including Kenya, adopted an ecocentric goal of education and policies as guidelines towards sustainable environmental protection.

Aldo Leopold (1949) in his *The Land Ethic* used the term “ecocentrism” in ecological philosophy to denote a nature-centred, in contrast to human-centred (Anthropocentrism)

set of values. Ecocentrism is an ethical claim for an equality of intrinsic value across human and non-human nature, technically referred to as ‘biospherical egalitarianism’, (Steele, 2011; Henning, 2016). It advocates for environmental ethics reflected in intergenerational justice, which is justice between present and future generations. This concern grows from the possibility that the fate of future human generations is uncertain due to the present growth and consumption patterns, (Kopnina, 2014)

Also, in reference to Aristotle’s metaphysical view of reality, education should enable learners to obtain an objective reality of their situation, in this case the physical environment and the need for its sustainable protection, through “diligent and unsparing scrutiny of observable data”. Educational practice should result to character formation by training in the rules of conduct, (Cohen, 1999). These rules of conduct, for the purpose of this study, were expected to be confined within environmental ethics. They were to be exhibited through the acquisition and practice of awareness, values, attitudes and skills on sustainable environmental protection. It was the theory and implementation of formal and non-formal education, in respect to both the ecocentric goal of education and policies on sustainable environmental protection, which should enable such acquisition and practice.

In modern context, education is an agent of change in this rapidly changing world. It is an instrument of social change where it needs to shape man’s attitude and outlook. It enables members of the society to cope with changes (in this context those environmental in nature) and acquire soft skills for success in this 21<sup>st</sup> Century, (Al-Hattami & Al-Abdal, 2014). To emphasize the role of education in this respect, John Dewey (1859-1952), a progressivist, believed that learners should adapt to each other and to their environment.

To this end therefore, there was need for schools to emphasize the subject matter of social experiences. These social experiences were the issues and contents that human beings interact with, key of them being the physical environment. The clarion adaptation that this study called for is the one where learners, citizens and their leaders develop and act sustainably on the environment, (Homiak, 2016). In addition, Theodore Brameld (1904-1987), a social reconstructionist, appreciates among other aspects, human capacity to create a beneficent society using technology and human compassion. His fellow reconstructionist, George Counts (1889-1974) recognised that education was the means to enable people create this new social order, (Cohen, 1999).

The moral character, human compassion and capacity referred to above was to be exhibited as a set of beliefs, attitudes, values, skills and actions which people employ to manage social changes and solve social problems. In the interest of this study, these social changes and social problems greatly constituted environmental degradation and its adverse effects on human health, both currently and in future. The set of knowledge, beliefs, values, attitudes, beliefs, skills and actions, in the context of this study, needed be employed to sustainably protect the environment. These knowledge, beliefs, values, beliefs, attitudes, skills and actions constituted the premises of environmental ethics and responsibility: awareness and commitment to act responsibly on the environment. They were to constitute the rules of conduct in relating to and protecting the environment.

On her environmental policy, Switzerland had remarkably integrated environmental protection and sustainability issues into a wide range of areas and launched studies aimed at reconciling the goals of sustainability and economic development. She developed

cross-sectoral strategies, focusing on issues including sustainability, biodiversity, climate change adaptation and forest management. In 2011, the federal government phased out the use of nuclear power for the next several decades. In 2017, she adopted the “Energy Strategy 2050” that would significantly enable energy efficiency and exploit the potential of water power and other renewable energies. She also invested quite considerably in environmental protection and sustainability. In 2012, public spending on environmental protection was 2.5% of total public expenditure, (Stiftung, 2018). On her many environmental policy measures, Germany had put in place the adoption of the “20-20-20 Goals” by EU heads of state in 2007. In these goals, carbon monoxide emissions would be reduced by 20% in comparison to 1990s levels, increase energy efficiency by 20% and the share of renewables to total energy consumption also by 20%, (Hubner, 2014).

Japan had a turning point in environmental policy in 1989 when she actualized the concept of sustainable development. By this, she established a council of ministers for global environmental conservation. This council outlined six directions for global environmental conservation. These directions included positive participation in formulating an international framework for protecting the global environment. It also promoted observation and research of the global environment to expedite the formulation of global environmental protection. This was measured on the basis of scientific understanding of the effects of human activities on the global environment. Still the council ensured pursuit of the development and transfer of technology for global protection by contributing to various international efforts. Such was done by expanding official development assistance for environmental protection through development and transfer of appropriate technology for developing countries. The directions also

comprised of the training of human resources in environmental sector and strengthening of environmental consideration regarding the implementation of official development assistance. All these directions ensured that economic activities are carried out in a manner that is less burdensome on the global environment. This was made possible by promoting resource and energy conservation, raising awareness and improving education in all segments of the promotion, (Gotoh, 1997).

According to the 2017 Africa Sustainable Development Report, approximately six out of every ten SDGs indicators cannot be tracked in Africa. This was due to severe data limitations. There were deficiencies in statistical information that hamper Africa's development and transformation processes to achieve SDGs. Among other challenges, there was lack of regular credible surveys to capture changes; there was inadequate funding and limited autonomy of the national statistical offices to generate accurate, credible, timely and neutral data; there was poor data quality with countries' efforts not making it possible to achieve anticipated improvements. These limitations led to persistent data gaps in key development indicators. These gaps were mainly in social, environmental, and governance indicators. The data gaps impeded the establishment of baselines for measuring progress on development frameworks, including the SDGs and compound the challenge relating to monitoring the targets. Ultimately, this meant that policy-making in the African region was neither well informed by adequate neither data, nor the effect of policies adequately monitored, (UNEP, 2019). There was therefore need to provide an assessment of the effectiveness of the educational goal and policy measures, especially those touching on the protection of physical environment.

In Rwanda, some of the national environmental policy strategy measures included the use of widespread awareness and capacity building on environmental protection and sustainability. This strategy enhanced the fight against environmental degradation, integration of modern agricultural methods and the use of programmes that were appropriate to environmental protection and management. In Rwanda, learners were involved in programmes that aimed at environmental protection and management. Thus, the learners were trained on how to acquire skills that made them environmentally friendly, among others. Environmental protection and sustainability stakeholders also held continuous consultations with the local communities about strategies that promoted a healthy environment, (Safer Rwanda, 2008).

Tanzania adopted its national environment policy in 1997 whose objective was to ensure environmental sustainability, security and equitable use of natural resources. Tanzania's policy called for the need to undertake climate change studies with a view of identifying mitigation options. It laid emphasis on the need to develop ways for encouraging a holistic multi-sectoral approach to environmental management by integrating environmental concerns in sectoral policies, strategies and decisions. It created the context for cross-sectoral planning and coordination, (Janssen, 2006).

Kenya has an ecocentric goal of education on sustainable environmental protection and national policy statements on use of natural environment. However, despite all these, Kenya continued to witness incessant environmental degradation that resulted in erratic weather conditions, floods, polluted water bodies and atmosphere, dirty neighbourhoods, encroached forests, and a myriad of related health hazards, among others, (NECC, 2018).

The pictures below were indicators of how the environment has been degraded through various human activities in Kenya:-

**Figure 1.1: A truck emitting petroleum exhaust fumes into the atmosphere against air quality regulations along a Street in Kericho town, Kenya, on 12/7/2018**



Source: nation.co.ke

**Figure 1.2: Inappropriate disposal of solid waste in Nairobi's Dandora Slums, on 16/4/2017**



Source: Reuters, 2018

Figures 1.1 and 1.2 indicated human activities that caused air and water pollution in Kenya. With the existence of an ecocentric goal of education and policies on environmental protection, these and other indicators were the basic reasons that the study sought to explicate by way of questioning the effectiveness of the ecocentric goal of education and policies on environmental protection and sustainability in Kenya. This explication was compelling given Kenya's low performance index on the global ranking.

The global Environmental Performance Index (EPI) ranks countries on 24 performance indicators across ten issue categories covering environmental health and ecosystem vitality. These metrics provided a gauge at a national scale of how close countries are to environmental policy goals. The EPI thus offers a scorecard that gives insight on best practices, and provides guidance for countries that aspire to be leaders on environmental sustainability, (Yale University, 2018).

In 2018, Switzerland, Germany, Japan and China were positions 1, 13, 20 and 120 respectively in EPI rankings while Kenya was in position 130/180. Some African countries ranked as follows: Morocco (54), Tunisia (58), Egypt (66), Equatorial Guinea (71), Namibia (79), Mauritius (90), Nigeria (100), Sudan (115) and Tanzania (119), (Yale University, 2018). This was an indicator that Kenya's implementation of the ecocentric goal of education and policies on sustainable environmental protection are not effectively mitigating on environmental degradation.

### **1.2.1 Ecocentrism and Education in Kenya**

Ecocentrism is reflected within the Kenyan goal of education that seeks to promote positive attitudes towards good health and environmental protection, (National Education Sector Plan, 2015). This was with an intention to promote environmental preservation and conservation, including animal welfare.

### **1.2.2 The Constitutionality and Policies on Natural Environment in Kenya**

One of the bills of rights in chapter 4 of the Kenyan Constitution 2010 is the right to a clean environment. The environment is to be protected for the benefit of the present and

future generations through legislation and other measures. Among other things, the government is to ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources. This is to ensure an equitable sharing of the accruing benefits through, among other ways:

achieving and maintaining a tree cover of at least ten per cent of the land area of Kenya; protecting and enhancing intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities; encouraging public participation in the management, protection and conservation of the environment; protecting genetic resources and biological diversity; establishing systems of environmental impact assessment, environmental audit and monitoring of the environment; eliminating processes and activities that are likely to endanger the environment; and utilising the environment and natural resources for the benefit of the people of Kenya, (Kariuki Muigua, FCI Arb - July 2016, p.3).

In 2013, Kenyan Government through the Ministry of Environment, Water and Natural Environment, formulated the Natural Environment Policy. The policy proposes a broad range of measures and actions responding to key environmental issues and challenges. It seeks to provide the framework for an integrated approach to planning and sustainable management of natural resources in the country. It recognises the various vulnerable ecosystems and proposes various policy measures not only to mainstream sound environmental management practices in all sectors of society throughout the country but also to recommend strong institutional and governance measures to support the achievement of the desired objectives and goals, (MoEWN, 2013).

In reference to the policy on Education for Sustainable Development (ESD) in Kenya, numerous sustainable development challenges that ranged from climate change, loss of biodiversity, food insecurity, and high levels of poverty, among others, were highlighted. To address these challenges required provision of quality education that enables development of values, knowledge, skills and competencies for sustainable living and participation in society, (MoE, 2017). Over and above the contribution of educational

practice, Kenya has state agencies that are vested with the responsibility to ensure sustainable environmental protection. The lead ministry is that of environment and forestry. Others include but not limited to Kenya Forest Service, Kenya Wildlife Service and the county governments' responsible ministries. The government's lead agency in environmental protection, NEMA, and other state organs have a general purpose and guiding principles to ensure a clear, healthy, safe and sustainably managed environment and natural resources, (MoENR, 2018).

### **1.2.3 Parameters for Environmental Policy Effectiveness**

Once a policy has been put in place, it becomes necessary to monitor and evaluate the effectiveness of its implementation, to determine whether it is successfully achieving the objectives or intended outcomes, (Australia Bureau of Statistics, 2010). The monitoring and evaluation involve an insight into the policy process and its outcomes, (Amouzou, et al, 2011). Judging policy implementation effectiveness on the outcome and output dimensions focuses on how the transposition and practical application correspond to the objectives defined by the policy under investigation, (Knill, et al, 2013). Also, from McGrath's (2007) *How to evaluate the effectiveness of an environmental legal system*, a legal system is effective if it is achieving or likely to achieve its objectives. Therefore, for an environmental legal system, it means achieving sustainable development. This understanding formed the basis of this study, that is, to investigate the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya.

In addition, according to Mukherjee and Bali (2019) in their study on *Policy effectiveness and capacity: Two sides of the design coin*, “the fundamental goal of public policy is to address or solve societal problems or improve policy outcomes through a deliberative process”. As noted above, the environment plays a very vital role in human lives. To ensure a clean, healthy and sustainable protected physical environment, Kenya has an ecocentric goal of education and policies to that regard. A deliberate and effective implementation of the goal and policies is expected to beget societal benefits of a clean, healthy and sustainable protected physical environment. In the words of Howes et al (2017) in their article on *Environmental Sustainability: A Case of Policy Implementation Failure?*:

One way of measuring the effectiveness of sustainability policies is to track changes in the state of the environment since their implementation. While there have been some patchy improvements in selected indicators for a few locations, the overall decline in environmental quality has continued unabated and no country has achieved environmental sustainability, (*Sustainability*, 9(2), 165).

Hence, there was need to interrogate institutional reports and respondents’ experiences on the state of the environment in Kenya in order to assess the effectiveness of her ecocentric goal of education and policies on sustainable environmental protection.

### **1.3 Statement of the Problem**

Despite having an ecocentric goal of education and policy frameworks on environmental protection and sustainability, Kenya has continued to witness incessant environmental degradation. The process and practice of education and the implementation of environmental policies was expected to have developed skills, values and attitudes among Kenyans that should result in individual and collective awareness, commitment and participatory actions for sustainable environmental protection in Kenya. Contrary to the

anticipated result, incessant degradation persists. Thus, this study investigated the effectiveness of the implementation of the ecocentric goal of education and policies on sustainable environmental protection, in order to identify the underlying factors for the phenomenon of environmental degradation in Kenya. It was undertaken with a view of postulating alternative measures thought to be more effective in attaining sustainable environmental protection. These, among other considerations, would inculcate a sense of environmental ethics and cognitive orientations necessary for the development of environmentally responsible Kenyan citizens.

#### **1.4 Purpose of the Study**

Awareness and clarity of understanding are critical aspects of effective implementation of any goal and policy strategies. Kenya has an ecocentric goal of education and policies intended to promote citizenry awareness, commitment and participation in sustainable environmental protection. The purpose of this study was therefore to investigate the effectiveness of the ecocentric goal of education and policies in relation to sustainable environmental protection in Kenya.

#### **1.5 Objectives of the Study**

This study sought to achieve the following objectives:

- i. To explore the nature of the ecocentric goal of education and policies for sustainable environmental protection in Kenya.
- ii. To assess the effectiveness of the implementation of the ecocentric goal of education and policies on sustainable environmental protection in Kenya.

- iii. To determine the underlying factors for incessant environmental degradation, notwithstanding the existence of an ecocentric goal of education and policies on sustainable environmental protection in Kenya.
- iv. To recommend alternative measures for effective implementation of the ecocentric goal of education and policies on sustainable environmental protection in Kenya.

### **1.6 Research Questions**

This study was guided by the following research questions:-

- i. What is the nature of the ecocentric goal of education and policies on sustainable environmental protection in Kenya?
- ii. How effective have the ecocentric goal of education and policies on sustainable environmental protection been in Kenya?
- iii. What are the underlying factors for incessant environmental degradation in Kenya al-beit the existence of ecocentric goal of education and policies on sustainable environmental protection?
- iv. What are the alternative measures that can be deployed for effective implementation of the ecocentric goal of education and policy strategies for sustainable environmental protection in Kenya?

### **1.7 Significance of the Study**

The findings of the study would provide basis for reflection for the Ministries of Environment and Forestry and Education on their mandate to oversee an effective implementation of policies and strategies geared towards environmental protection and

sustainability. Since public resources have been and would continue to be committed through these ministries and other multi-sectoral agencies, those vested with such responsibility need to ensure public value for the money. The agents of implementation, by adopting the study's recommendations, would embrace approaches that guarantee citizenry acquisition and execution of environmental ethics: values, attitudes, beliefs, knowledge and skills on sustainable environmental protection. This would significantly improve Kenya's EPI ranking. Finally, the study formed a base for further research into human relationship with the physical environment for more mutual benefits.

## **1.8 Limitations and Delimitations**

This study faced the following limitations and delimitations:

### **1.8.1 Limitations**

The study locale was vast. This being a study in Kenya, the choosing of the sample counties had to be significantly representative of the country, notwithstanding the physical distances between them and the time required to reach the counties. Such movements for data collection was unavoidable since local citizens were to be interviewed at the sites of their involvement in activities deemed destructive to the environment. The institutional officers were to be found in their official setups. There is no universally accepted framework for assessing policy effectiveness, especially on environmental parameters. Earnest study debates are on-going. The study adopted the expressed and observed achievement of the ecocentric goal of education and policy objective outcomes as the measure for effectiveness. There was no available data for citizens involved in environmentally destructive activities in Kenya. The sample of citizens involved in degradation activities were identified through snowballing.

### **1.8.2 Delimitations**

Kenya has eight national goals of education but this study was confined to the ecocentric goal of education that seeks to develop positive attitudes towards good health and environmental protection. The ESD and natural environmental policies have a variety of objectives touching on social, economic and environmental dimensions and a number of objective statements under each of the three. This study confined itself only to policy and institutional objectives touching on air, water and land characteristics of the physical environment.

The study adopted purposive sampling technique for representative counties, institutional officers and documents, and snowballing of local citizens. This was due to the specificity of study objectives and variables, and relevance of sampled documents. This being a study in education, it could not investigate all inhibitions against and necessary interventions towards environmental protection and sustainability but greatly owed Immanuel Kant's idea that "a man only becomes a man through education. He is nothing more than what education makes him". This study therefore, sought to access the effectiveness of education and policy measures to develop human values and skills in as far as sustainable environmental protection is concerned.

### **1.9 Assumptions of the Study**

This study was guided by the following assumptions:

Matters of climate change and environmental protection and sustainability, as envisioned in SDGs, were of grave concern to all nations, including Kenya. Secondly, the respondents would answer the interview questions in an honest and candid manner.

Lastly, an effective implementation of the ecocentric goal of education and policies on sustainable environmental protection, by responsible state agencies, would avert human life threats that are resultant of climate change.

### **1.10 The Theoretical Framework of the Study**

Theories are developed to explain, predict, and enhance the understanding of phenomena. Theories explain and extend the frontiers of knowledge within boundaries of critical bounding and assumptions, (Akintunde, 2017). The theoretical design adopted in this study was therefore informed by what is generally called *Environmental Citizenship Theory*. One of the principles of sustainability is developing initiatives that are effective in engaging citizens in responsible environmental behaviour, (Rodrigues, 2012).

#### **Development of Environmental Citizenship Theory**

Environmentalism as a concern for environmental degradation and the need for sustainable environmental protection began in Europe in the 1800s. At its onset, it was a response to the effects of the industrial revolution which had ushered in both air and water pollution. The environmental movement (Environmentalism) and its calls for environmental sustainability led to the formation of what is currently called Earth's Day, following the first UN Environmental Conference in the 1970s and The Green Medium. These were concerted concerns of the Green Movement with a clear message that "the environment's capacity to support human and other forms of life were being supervened, and that if nothing was done, there would be imminent environmental collapse perhaps within 100 years would be inevitable", (Wiley & Sons, 2007).

Predominantly, *Environmental Citizenship Model* began as a significant debate element in environmental politics and policies in western democracies. In such debates, broader issues of political engagement and process played out. The concept of environmental citizenship was conceived along the civic republican tradition and civic environmentalism tradition. In the two traditions, individuals were taken as participating in a collective work towards the common good, (Schild, 2015). Discussions on the concept of environmental citizenship date back to the conservation movements of the late 19<sup>th</sup> Century, with its political expression on environmentalism emerging strongly from the 1960's onwards. Western debates have evolved from the civil citizenship rights of the 18<sup>th</sup> Century through the emergence of political citizenship rights of the 19<sup>th</sup> Century to the onset of social rights (free speech and self-expression) and later to the reproductive rights. In the 21<sup>st</sup> Century, the debates have witnessed discussions and inception of environmental virtues and responsibilities, (Richardson, 2017).

Additionally, through re-construction, the term, environmental citizenship, as a theoretical concept, has become key facet of sustainable development policies from the mid-1980s, evoking citizen engagement with sustainable technologies and infrastructures, environmental science and other forms of environmental knowledge, and environmental policy making itself. As a model, Environmental Citizenship was proposed by Hangerford and Volt in 1990, (Akintunde, 2017). Since the 1990s, the creation of environmental citizens has also become a central tenet of pro-environmental behaviour change policies, which alongside the development of more efficient technologies have been a significant component of sustainability policies (Schild, 2015; Pallet, 2017).

## **The Proponents of Environmental Citizenship Theory**

In shaping the Environmental Citizenship Model and its tenets, Hungerford and Volt identified three variables that influence a person's sustainable relationship with the environment, categorised as follows: First, the general sensitivity to and knowledge of environmental issues. Second, in-depth knowledge of, personal commitment and resolute to sustainable protection of the environment. Finally, the possession of action skills and intention to act towards sustainable environmental protection, (Akintunde, 2017). While appreciating that the ultimate aim of education is to shape human behaviour, United Nations (1990) World Conference on *Education for Meeting All Basic Learning Needs*, emphasized that societies throughout the world should establish education systems that develop citizens who behave in desirable ways. In the conference, Hungerford, et al (1990) presented a paper that questioned the effectiveness of environmental education in matters of enhancing responsible citizenship behaviour, observing that there are too few environmental education programmes that incorporate serious efforts to develop ownership and empowerment quality in learners.

## **Tenets of Environmental Citizenship Theory**

Environmental Citizenship theory is a model about responsible pro-environmental behaviour of citizens who are expected to act and participate in society as agents of change in the private and public sphere, on local, national and global scale, through individual and collective actions, in the direction of solving contemporary environmental problems, preventing the creation of new environmental problems, achieving sustainability as well as developing healthy human relationship with nature. In this

theoretical consideration, citizens are driven by a belief in fairness of distribution of environmental goods and participation in sustainability, (Smederevac-Lalic, et al, 2020).

Environmental Citizenship includes the exercise of environmental rights and duties, as well as the identification of the underlying structural causes of environmental degradation and environmental problems, the development of the willingness and the competences for critical and active engagement and civic participation to address those structural causes, acting individually and collectively within democratic means, and taking into account inter-and intra-generational justice, (European Network for Environmental Citizenship, 2018).

In recognizing the tenets of Environmental Citizenship as a theory, Hungerford and Volk wondered if environmental education would ever help resolve the many environmental issues and challenges that have faced humanity for over 20 years now. To Hungerford and Volk, alleviating environmental degradation requires an enhanced sustainable environmental protection. This calls for personal sensitivity to environmental issues, knowledge and use of citizenship action skills, and personal investment in and commitment to environmental issues. They observed the need to help learners, and citizens in general, become capable decision makers, willing to address environmental problems and issues. As such, citizens are to be helped to develop sense of personal ownership in environmental issues and empowerment to work towards the solution of these issues, (Hungerford & Volk, 2003).

Environmental Citizenship, as a model, postulates that citizens should take responsibility for their interaction with the environment, (Law and Your Environment, 2017). Therefore, an environmental citizen is an individual, group, business, organization or government that is significantly aware of and who fulfils their responsibility to live, work and operate in a manner that is not harmful to the environment and humanity. Citizens, in this context, should demonstrate intentional and meaningful behaviour that protect and improve the environment. Basically, the theory involves active encouragement, support and empowering of the community (citizens), business and organisations to create lasting pro-environmental behaviour change, driven by accessibility, participation, responsibility, environmental equity and restorative action backed up by strong environmental leadership, (EEA, 2012).

### **Limitation of the Environmental Citizenship Theory**

Environmental Citizenship theory has the following limitation: The concept “environmental citizenship” has no precise definition. The term is an aggregate of the concepts of environment and citizenship intertwined. Interestingly, the terms ‘environment’ and ‘citizenship’ are concepts that are highly contestable. The notion of citizenship has far reaching range and changed over time. It has invoked ideas on governance, civil, social and reproductive rights, responsibilities and freedoms, access to state services, among many others, (Pallet, 2017). On the other hand, the concept of environment depends on the context, whether in reference to the notion of the physical surrounding and human interaction with it or both. That is why this research study adopted a version of ‘Environmental Citizenship’ in theory that envisioned the development of the citizens’ skills, values and attitudes that are oriented towards

sustainable environmental protection in the physical sense of the term environment. This version is in line with the definition given by European Network for Environmental Citizenship (2018), where; Environmental Citizenship includes the exercise of environmental rights and duties. In this exercise, citizens are able to consciously identify underlying structural causes of environmental degradation and environmental problems. Consequently, they develop the willingness and competences for critical and active engagement and civic participation to address those structural causes. As such, they act individually and collectively within democratic means to relate with the environment, taking into account inter-and intra-generational justice.

### **Application of the Environmental Citizenship Theory to this Study**

This study adopted Hungerford and Volt's perspective of Environmental Citizenship Theory since it best reflects the desired relationship between society and the natural or built environments: the idea that human beings act towards phenomena depending on the knowledge and or information they have on the phenomena, and their resolve to act in a desired and considered direction, coupled with full awareness of the consequences of their actions, (Rodrigues, 2012).

The desired relationship would be developed through formal and non-formal education practices. This is possible since education is a systematic process by which a child or an adult acquires knowledge, experience, skills and sound attitudes. The aim of education is to make individual person perfect. It is the key to solve the various problems of life. Education in this consideration is taken as the process of awaking people up to life. As such, people are woken up to the inter-dependencies of all things: the threat of our global

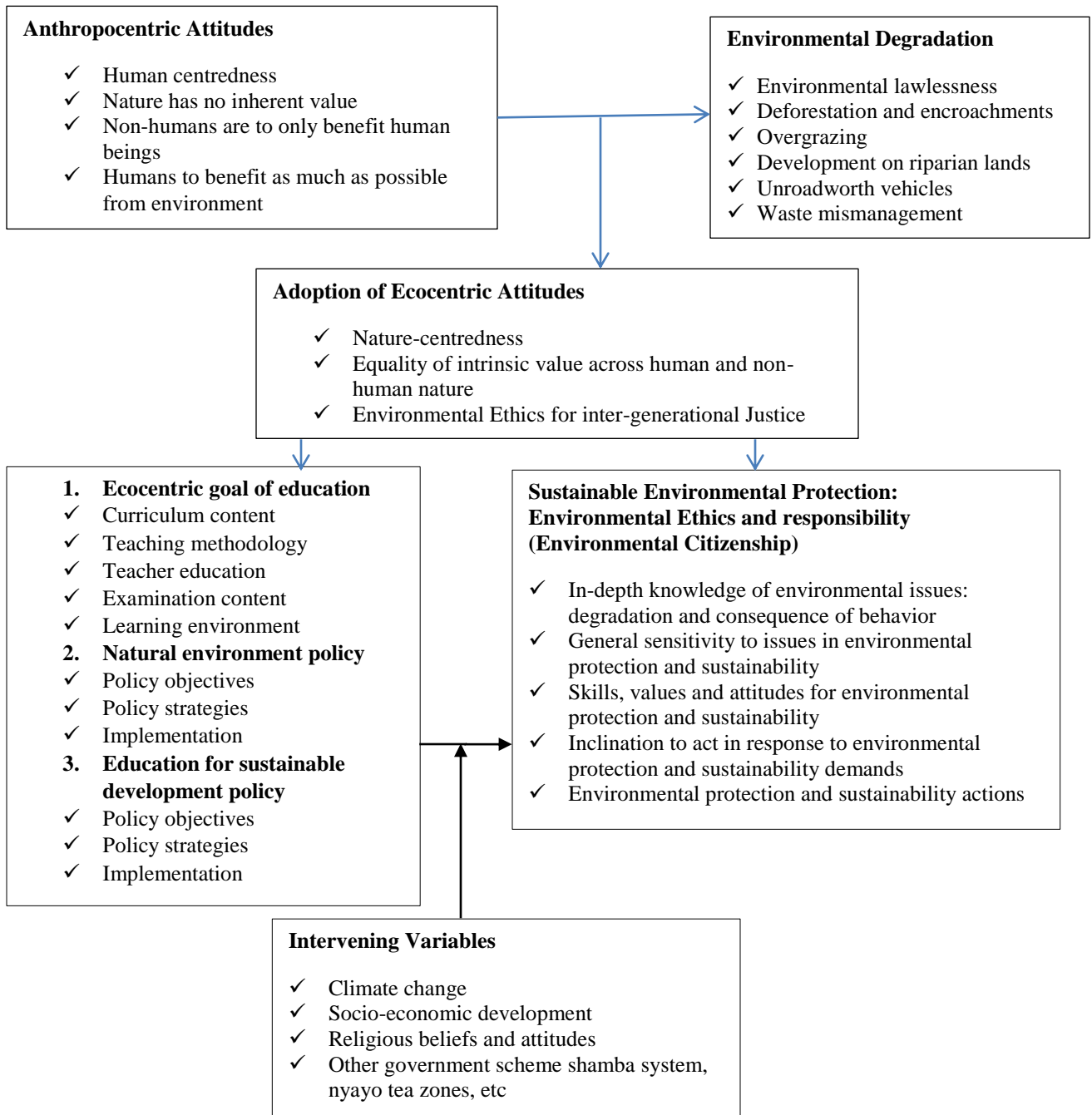
village, the power within human race to create alternatives, the obstacles entrenched in economic, social and political structures that prevent our waking up, (Parankimlal, 2012). Again, in the words of Rabindranath Tagore (1861-1941), a humanist and contextual modernist, “The highest education is that which does not merely give us information but makes our life in harmony with all existence”, (Pushpanathan, 2013). For citizens to act and be effective in sustainable environmental protection, the theory and practice of education, both formally and non-formally, should develop in the knowledge, values, attitudes and skills that enable their commitment and participation. This ensures human harmony with nature and thus, sustainability.

Environmental Citizenship theory guided this study by providing strategic background for understanding both the natural environment and educational process for Kenyan citizens. The basis for this is entailed in the assumption that it is education that shapes the character and behaviour of human beings. Education therefore makes it easier in embracing policy outlines and strategies that involve actions and reactions of the citizens’ engagements in environmental protection and sustainability, (MoE, 2013). Practically, it is the interaction between human moral conscience and action that ultimately persuade and constitute desired human behaviour. In this respect, formal and non-formal education and training are expected to play the role of enabling the development of environmental ethics among citizens. Presumably, the knowledge and sensitivity that citizens bear on environmental issues determines how environmentally responsible and sustainable their behaviour will be (Priadi et al, 2018). As a result therefore, the study sought Kenyan citizens’ awareness of the nature {content and purpose} of the ecocentric goal of education and policies on sustainable environmental protection. It sought their responses

to the phenomenon of environmental degradation and interrogated their conscious expressions of values and skills for commitment to and participation in sustainable environmental protection.

In Kenya, the citizens were observed as they involved in environmental degradation activities. Since they are still the beneficiaries of a sustainably protected environment {as observed by Pradhan et al, (2017)}, they then are to play a critical and leading role in sustainable environmental protection. In other words, since they are the agents of environmental degradation, they will require adopting behavioural change patterns that enable them to play as the central agents of sustainable environmental protection. Such a change is possible with the development of citizenry willingness and competencies through which citizens actively engage and participate individually and collectively, within democratic means, to ensure sustainable environmental protection for inter-and-intra-generational justice.

## 1.11 The Conceptual Framework of the Study



**Figure 1.3: A schematic diagram illustrating effects of the Ecocentric Goal of Education and Policies on Environmental Protection via a development of Environmental Ethics and Responsibility (Environmental Citizenship) vis-à-vis environmental effects of anthropocentric attitudes**

The schematic representation showed the effects of anthropocentrism vis-a-vis ecocentrism on the physical environment. It indicated the impact of acquired citizenry values, attitudes, skills and actions in relation to environmental protection. To develop ecocentric knowledge, beliefs, attitudes, values and skills, environmental issues should be integrated into the curriculum. In respect to the ecocentric goal of education, the natural environment and education for sustainable development policies are displayed in that if implemented would enable development of Environmental Citizenship among citizens. By such the citizens would exhibit environmental concerns while at the same time understand how their actions or inactions affect their environment. To address environmental degradation, the diagram indicated citizenry need to acquire sufficient knowledge, values, beliefs, skills and attitudes that can enable them resolve and commit themselves to act responsibly towards both biotic and abiotic environments, thereby avoiding activities that lead to environmental degradation but engaging in sustainable environmental protection. Unlike an ecocentric perspective in human-environment interrelationship, anthropocentric tendencies present an interrelationship that does not guarantee sustainable environmental protection.

### **1.12 Operational Definitions of Terms**

The following terms were defined as below:

**Anthropocentrism:** Human-centred set of values that human beings are superior to all other elements of the universe.

**Corruption:** Dishonesty or criminal activity undertaken by a person or organisation entrusted with a position or authority of influence. It involves diverting

resources to activities not intended, especially for preferential self-purposes or making self-centered decisions; that do not serve public good.

**Ecocentrism:** An existential belief and ethical claim for a nature-centred set of values that places importance to ecosystem as whole: that all elements of the universe have intrinsic value.

**Education for Sustainable Development:** A dynamic concept that aims at exploiting existing opportunities in all aspects of public awareness, learning and training to create or enhance an understanding of the linkages among the issues of sustainable development.

**Environment:** The physical and biological systems that provide basic life support and contribute to human psychological well-being. It incorporates air, water, land, plant and animal life including human life.

**Environmental Citizenship:** A conceptualisation that people take responsibility to sustainably relate with the natural environment

**Environmental Ethics:** Applied philosophy that proposes human behavioural reconstruction to protect natural and ecosystem elements within a sustainable use of natural resources.

**Environmental Philosophy:** A discipline that conceptualises the relationship between humankind and the natural environment.

**Phenomenon:** An occurrence as it appears and is experienced by humans.

**Policy:** A position taken and communicated by government in recognition of a problem and how it should be resolved.

**Strategy:** A set of planned activities to achieve the objectives of a policy.

**Sustainable Development:** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs,

**Sustainable Environmental Protection:** Protection of the environment for the benefit of present and future generations.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### 2.1 Introduction

This chapter outlined the literatures that are related to the study objectives. The review started with the nature and account of the ecocentric goal of education and policies on sustainable environmental protection. An outline for studies that showed the locus of human characteristics and their responsibility, participation and commitment to sustainable environmental protection: the essence of *Environmental Citizenship*, was given. A reflection on the need for human measures to ensure sustainable environmental protection was pointed out. Lastly, a summary of the above related literature is given, prior to pinpointing the study gaps from the available literature.

#### 2.2 The Ecocentric Goal of Education and Policies on Sustainable Environment Protection

Kenya has an educational goal and corresponding policies that are ecocentric in outlook. They focus on sustainable environmental protection. This anticipated focus is intended to develop environmental ethics and sense of responsibilities among learners and the general citizenry in Kenya. Such would enable them to commit and participate in sustainable environmental protection.

##### 2.2.1 The Ecocentric Goal of Education

Ecocentrism is derived from two Greek words: *oikos*, which means "house" and *kentron*, meaning "center". It is a term used in ecological philosophy to denote a nature-centered (ecocentrism) as contrasted with human-centred (anthropocentrism) system of values.

The justification for ecocentrism usually consists of an ontological belief and subsequent ethical claim that denies that there are any existential divisions between human and non-human nature. It further claims that humans are neither the sole bearers of intrinsic value nor do they possess greater intrinsic value than non-human nature. Thus the subsequent ethical claim posits that there is equality in intrinsic value across human and non-human nature. This is technically referred to as ‘biospherical egalitarianism’, (Kopnina, 2014).

Albert Schweitzer (1875-1965), a 1952 noble peace prize winner and an ecological philosopher, put it that “until he extends his circle of compassion to include all living things, man will not himself find peace”. On ecocentrism and in his book, *The Ethic for Reverence for Life*, Schweitzer advocated for respect for ethical life. To him, maintaining life is a good idea and to destroy or impede life is bad. The principle behind the respect for life encompasses respect for all living things, including insects and plants. Man’s ethics should not end with man, but should extend to the universe. Human beings must regain the consciousness of the great chain of life from which they cannot be separated, (Bekoff, 2011; Niebuhr, 2013). Ecocentrists believe that in order to live our life in a peaceful way, one must care about what is surrounding us since we are part of the ecosystem, (Cryer, et al, 2017). Paul Taylor (1986), while clamouring for ecocentrism in his *Respect for Nature*, emphasised the recognition that one cannot draw a sharp line between natural ecosystems and those that are not natural, (Ching Wu, 2015).

Kopnina (2019) in a study on *Ecocentric Education: Student Reflections on Anthropocentrism–Ecocentrism Continuum and Justice in Netherlands* sought to establish the liberal arts college students’ perceptions of environmental and ecological

justice. She scrutinized students' assignments related to debates on social/environmental and ecological justice written as part of the course 'Environment and Development'. Student assignments are analysed with the aim of gauging their view on the environment and society, identifying reasoning patterns about the anthropocentrism–ecocentrism continuum. From the students' views, Kopnina observed variance in perception and awareness on environmental issues. As a result, there was need for students to rethink environmental ethics in relation to justice. In her conclusion, Kopnina distilled recommendations for the design of a university curriculum that can facilitate the development of a non-anthropocentric worldview.

Kopnina (2019) analysed college students' assignments and debates to establish their perceptions on environmental and ecological justice. The researcher in this current study broadened the scope by establishing institutional officers' and citizens' awareness of environmental issues (as advocated for through the ecocentric goal of education and policies on sustainable environmental protection in Kenya) and analysed their perceptions and experiences on the phenomenon of environmental degradation and sustainable environmental protection. This was necessary since the time spent in school is minimal compared to citizens' lifetime after conventional schooling. In pre-independent Kenya, the colonial goal of education was to qualify Africans for manual jobs. It was only about literacy and vocational training for Africans in order to provide cheap labour to white settlers, (Mackatiani et al 2015; Kamau, 2018). This kind of education had no focus on environmental protection given the main interest of the colonialists was to exploit the natural resources from Kenya and the whole of Africa (Gareth, 2010).

After independence, the Ominde Report, 1964, drew the focus in education to African socialism, national cohesion, unity and economic development. For a unified system of education, the report recommended six goals of education to include: national development, international consciousness, social equality, individual growth and self-fulfilment, national unity, respect and development of cultural heritage (Kwach, 2018). As indicated, the focus again was on unity and development but critically, no emphasis on environment and sustainability. Interestingly, these goals continued to form the basis for all the other education commissions in post independent Kenya such as:

**The Ndegwa Commission of 1971:** With a surging need for specialist workforce in Kenya, this commission suggested a revision of the education system to improve its relevance to both industrial and commercial sectors of the economy; **The Gachathi Commission of 1976:** This report focused on diversification of the school curriculum to serve the economic and social needs of the people. It had a major concern on learner activities; **The Mackay Commission of 1981:** This report only recommended the restructuring of the education system to 8-4-4 and expansion of educational facilities including technical colleges; **The Kamunge Report of 1988** proposed extension of training opportunities like in-service courses and payment of school fees for learning; and **The Koech Commission of 1999,** emphasized the introduction of more practical subjects and proposed a totally integrated quality education and expanded education opportunities like the modular learning (Ibid.)

Kenya, in her National Education Sector Plan (2013-2018) committed to implement international, regional and national commitments to education. These commitments

included the MDGs, EFA goals, post 2015 Educational targets, the Sessional Paper No. 14 of 2012 on reforming education and training, the Basic Education Act (2013) and the 2010 Constitutional provision for free and compulsory basic education to all children. All these statutes called for provision of quality basic education for sustainability and development.

In response, the government had undertaken to do all the above commitments guided by the national goals of education as revised and explained by the then Kenya Institute of Education in 2002, as including: to foster nationalism, patriotism and promote national unity, to promote the social, economic, technological and industrial needs for national development, to promote individual development and self-fulfilment, to promote sound moral and religious values, to promote social equality and responsibility, to promote respect for and development of Kenya's rich and varied cultures, to promote international consciousness and foster positive attitudes towards other nations, to promote positive attitudes towards good health and environmental protection, (Mwaka, 2013). The lastly outlined national goal of education reflects the ecocentric instincts that Kenyans are expected to develop within the tenets of Environmental Citizenship.

Mwaka et al (2013) in his study on *The National Goals of Education in Kenya: Interrogating the Achievement of National Unity*, investigated the extent to which education has promoted national unity. They underscored the critical role that education plays in providing an all-round development of its recipients to enable them overcome prevailing challenges and therefore play effective roles in their immediate society. To him,

Kenya as a country has made efforts to direct its educational endeavours towards its national goals; however, an examination of products of this system and a critical analysis of the state of the society points to the need for more effort... The happenings witnessed in the country especially during the post-election violence of 2007- 2008 and the elusive attainment of nationalism and patriotism seem to suggest that this goal is far from being achieved, and as such, the promotion of nationalism, patriotism and national unity so falls short, (Page 149).

Mwaka appreciated that the effectiveness of a national goal of education is measured by citizenry exhibition of the goal's envisioned characteristics. By this observation, Mwaka concluded that, what is taking place in Kenya is essentially a "reflection of the level of achievement of the national goals of education", (page 151). Mwaka's conclusion formed the backbone of this study: Is the observed incessant environmental degradation in Kenya a reflection of the level of effectiveness (or otherwise) of the ecocentric goal of education and policies on sustainable environmental protection? While Mwaka investigated the effectiveness of the implementation of the national goal on national unity as exhibited by citizenry actions and involvement, the study hereby investigated citizenry awareness of and effectiveness of the national ecocentric goal of education and policies on sustainable environmental protection (a clean and healthy environment).

Nicolai et al (2014) in their development progress case study report titled *Beyond Basic: The Growth of Post Primary Education in Kenya* observed a highly remarkable progress in education access at the post-primary level in Kenya in the last decade. They noted that "Kenya's expansion of secondary and tertiary is a trajectory that will be seen in other developing countries in coming years". They observed that school net enrolment rates have consistently increased from 2000 to 2015 and beyond. It is no wonder that Kenya's adult literacy level stands above 78% currently, (Knoema, 2015). The current study sought to find out if such remarkable access to and progress in education has translated to

citizenry awareness of environmental issues, acquisition of environmental ethics, commitment to and participation in sustainable environmental protection.

### **2.2.2 The National Environment Policy and Its Objectives**

Rabindranath Tagore (1861-1941), an Indian poet, humanist and philosopher, advocated for environmental consciousness among people in his numerous writings. To him, consciousness should change people from their excessive materialistic attitude to avoid an ecologically troubled world, (Nayak, 2008). Tagore proposed an ecological approach which is sufficiently dynamic and creative, synthetic and holistic, biotic and life-centred, as well as prudent and sustainable enough to accommodate various forms of changes and diverse needs of the individual, society and the whole universe, (Ibid. p. 19). To enable such an ecological approach in Kenya, a concern on environment management and planning in Kenya is traced to the Rio Earth Summit of 1992. It helped to raise the understanding of the link between environment and development. In response, Kenya initiated the National Environment Action Plan (NEAP) process. This was completed in 1994. It recommended the need for a national policy and law on the environment (MoEWNR, 2013).

Accordingly, in light of the SDG, Kenya Government developed and adopted the natural environment policy in 2013. The objectives of this policy are to provide:

a framework for an integrated approach to planning and sustainable management of Kenya's environment and natural resources, to strengthen the legal and institutional framework for good governance, effective coordination and management of the environment and natural resources, to ensure sustainable management of the environment and natural resources (such as unique terrestrial and aquatic ecosystems, for national economic growth and improved livelihoods), to promote and support research and capacity development as well as use of innovative environmental management tools {such as incentives, disincentives, total economic valuation, indicators of sustainable development,

strategic Environmental Assessments (SEAs), Environmental Impact Assessments (EIAs), Environmental Audits (EA) and Payment for Environmental Services (PES)), promote and enhance cooperation, collaboration, synergy, partnerships and participation in the protection, conservation, sustainable management of the environment and natural resources, ensure inclusion of cross-cutting and emerging issues such as poverty reduction, gender, disability, HIV&AIDS and other diseases in the management of the environment and natural resources, promote domestication, coordination and maximisation of benefit from strategic multilateral environmental agreements (MoEWN, 2013).

The study sought to account for citizenry and institutional officers' awareness of the national environment policy and its objectives as outlined above. The researcher obtained institutional officers' and citizenry's responses on their awareness about the existence and objectives of the natural environment policy through the interview schedule administered. Such was informed by the notion that awareness and consciousness about a human phenomenon are both a prerequisite and consequence of human action, (Funke, 2017).

### **2.2.3 The Education for Sustainable Development Policy and Its Objectives**

Education for Sustainable Development as a concept is broadly interpreted as holistic and transformational education that addresses learning content and outcomes, pedagogy and the learning environment to achieve societal transformation. It also incorporates key sustainable developmental issues such as: climate change, disaster risk reduction, gender equality, biodiversity, poverty reduction and sustainable consumption, into teaching and learning (MoE, 2017). The overall aim of Education for Sustainable Development (ESD) is to empower citizens to be actors for positive environmental and social change once given the relevant skills, knowledge and values that would help them find new solutions to their social, economic and environmental issues. ESD also targets the implementation of programmes that are locally relevant and culturally appropriate, taking into

consideration the local environmental, economic and societal conditions. It also aims at enhancing the knowledge, skills, perspectives and values to empower people of all ages to assume responsibility for creating and enjoying a sustainable future (Alkhayyal, 2019).

The main focus of ESD policy is to re-orient education and learning towards sustainable development through strengthening policy development and integration of ESD at all levels of education and government; transforming learning and training environments in formal, non-formal and informal education and learning settings for sustainable development; strengthening the capacity of educators, trainers and other change agents to become learning facilitators for ESD; recognizing the role and capacity of youth as change agents towards a better society; integrating ESD programmes and perspectives into the planning and decision-making processes of the local community; and monitoring and evaluating progress in implementing ESD within the education sector and beyond (MoE, 2017).

Funke (2017) in his discussion on “*How much Knowledge is Necessary for Action?*” observed knowledge (basically constituting awareness of and consciousness about a human phenomenon) as not only a prerequisite for human action but also a consequence of action. In this context, action is a goal-directed human action in which awareness and consciousness is a means-end connection. This current study sought to establish Kenyans’ awareness of the nature and existence of the education for sustainable development policy and its objectives. Oyero et al (2018) on their study titled, “*Strategic Communication for Climate Change Awareness and Behavioural Change in Ota Local Government of Ogun State*”, investigated the practices surrounding climate change and

its awareness in Ado Odo/Ota Local Government of Ogun State in Nigeria. Their study design included survey research method, non-participant observations and unstructured in-depth interviews. That study underscored the use of multi-sectoral communication strategies for human handling of environmental processes. To them, multi-sectoral communication plays a crucial role and is a factor in winning the war against climate change and its attendant problems of greenhouse pollution, global warming and destruction of lives and properties. Their study findings showed the behaviours surrounding climate change in the study location included burning of waste and bushes, indiscriminate disposal of waste, the use of kerosene, firewood and coal for domestic purposes. They recommended a multi-sectoral communication strategy (MCS) and the use of television for effective climate change awareness campaign for behaviour modification.

While appreciating the role that multi-sectoral communication strategies would play in creating awareness of the existence and objectives of the ecocentric goal of education and policies on sustainable environmental protection, this study sought to account for citizenry the awareness of the said goal and policies in Kenya. Unlike the unstructured interview used by Oyero et al (2018), this study used structured interview schedules because of the specificity of the study objective.

Ngota (2019), in his study on *The Role of Education for Sustainable Development in Enhancing Sustainability Awareness among Learners in Secondary Schools in Nairobi County, Kenya*, underscored the role of schools in helping learners to understand the impact they have on Earth. His study sought to establish the effectiveness of ESD in

enhancing awareness of environmental sustainability among school learners in Langata Sub County, Nairobi, Kenya. To Ngota, schools can promote good practices and serve as centres through which young people and even local communities learn to appreciate sustainable living and working. He observed that the ESD done in schools did not translate to knowledge to be utilised in sustainable environmental protection by the learners. He sighted lack of funds and busy school schedules as reasons for ineffectiveness of ESD in schools. He recommended a change in curriculum design, designing programmes that involve both students and local community, and creation of awareness on income generating activities.

In Ngota's (2019) study, students in the schools were the target population. This study widened the scope by obtaining the views of institutional officers and citizens as they interacted with the environment. They would also relate with their formal and non-formal experiences in as far as these experiences created or did not create citizenry environmental awareness through the implementation of the ecocentric goal of education and the related policies. This study also sought to determine other underlying factors for citizenry involvement in environmental degradation and alternative measures to ensure sustainable environmental protection in Kenya.

### **2.3 Effectiveness of the Ecocentric Goal of Education and Policies on Sustainable Environmental Protection**

During the Rio Declaration on Environment and Development (1992), there was a clarion call for governments and societies to take the responsibility and educate new generations and their citizens to adopt ways of living and behaviour that support sustainable balance in the human-environment relationship. Such was with the understanding that most

human activities have deleterious effects on nature, (UNESCO, 1992; Denchak, 2018). Governmental and or societal response to mitigate adverse effects of human activities on the physical environment has included educational goals and other legal frameworks. These are to enable development of prerequisite awareness, attitudes, values and skills among all stakeholders whose engagement is to ensure sustainable environmental protection.

### **2.3.1 The Necessity for Assessing the Effectiveness of the Ecocentric Goal of Education and Policies on Sustainable Environmental Protection**

In taking up the Rio Declaration responsibility, governments and societies have instituted educational and policy practice frameworks to ensure sustainable environmental protection. There was, therefore, the need to assess the effectiveness of these frameworks, (Nevin, 2008). McGrath (2007), in his Ph.D. thesis at the Queensland University of Technology (Australia) on *How to Evaluate the Effectiveness of an Environmental Legal System*, states that a legal system is effective if it is achieving or likely to achieve its objectives. The natural environment policy in Kenya is a legal system or statutory framework, deliberately formulated as a means for achieving sustainable environmental protection and development. Thus, with the incessant environmental degradation that has continued to be witnessed in Kenya, the purpose and achievement of the natural environment policy objectives appeared questionable. Therefore, the study hereby engaged in a critical questioning of the effectiveness of ecocentric goal of education, the natural environment and education for sustainable development policies' strategies on sustainable environmental protection in Kenya.

Pradhan et al (2017), in their study titled “*Analysing the Effectiveness of Policy Implementation at the Local Level: A Case Study of Management of the 2009-2010 Drought in Yunnan Province, China*”, sought to assess the effectiveness of policy implementation by defining policy, practice and performance in respect to water and agriculture in Yunnan Province in China. They analysed the effectiveness from farmers’ perspective, who are the intended beneficiaries. They stated that the effectiveness of policies is measured by short-term, immediate and tangible benefits rather than long-term adaptation strategies. Although this study was about policies on water and agricultural projects in China, its approach in assessing policy effectiveness was applicable in assessing the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. This required an observation as to whether tangible benefits of the goals and policies were (or not) realised within the foreseeable time frames.

McGrath (2007) and Pradhan et al (2017) studies were case studies. This current study used a mixed research design to provide broader, deeper and complimentary information on the phenomenon of environmental degradation in Kenya, its underlying factors and alternative measures for sustainable environmental protection. Such is unlike a single design. It also broadened the research data source, enhanced corroboration and ensured that study findings are grounded in participants’ experiences.

Morgans, et al (2018) did a study titled, “*Evaluating the Effectiveness of Palm Oil Certification in Delivering Multiple Sustainability Objectives*” in South East Asia. Industrial oil palm plantations had caused significant biodiversity losses and perverse

social outcomes. To address these concerns and to improve sustainability through market mechanisms, civil society organizations and industry representatives had developed the Roundtable on Sustainable Palm Oil Initiative (RSPO) in 2004. This study was undertaken to assess the effectiveness of the RSPO Initiative in delivering the social, economic and environmental sustainability outcomes. Morgans et al (2018) employed causal analysis methodologies to evaluate the social, economic and environmental sustainability of the industry. They observed the need for substantial improvement and rigorous enforcement if the RSPO principles and criteria were to achieve its intended outcomes, (Morgans et al, 2018).

Unlike Morgans et al (2018) who investigated the effectiveness of one intervention initiative (the RSPO) in enabling environmental sustainability, our study investigated a broader spectrum of the effectiveness of the initiatives. These initiatives included the ecocentric goal of education and policies on sustainable environmental protection in Kenya. Descriptive and recurring themes from respondents' voiced experiences and institutional reports (unlike the causal analysis methodologies used by Morgans et al 2018) were used for the assessment. This was because environmental degradation is more of a human experiential phenomenon.

Haward (2018) in his article on *Plastic Pollution of the World's Seas and Oceans as a Contemporary Challenge in Ocean Governance*, observed how marine pollution had threatened development in ocean governance. The problem of plastic pollution in the world's seas and oceans had attracted increasing scientific concern, with calls for international agreement to address the issue. To Haward, majority of marine plastic

pollution derived from land-based sources (4.8–12.7 million metric tonnes of plastic annually). The sources of such plastics were equally diverse, from commercial and recreational ships and vessels, fishing and aquaculture operations (rope, waste, fishing gear, nets) to land based sources, street litter, dumping, packaging (including plastic bags), plastic sheeting and production waste. Given the intensity of the problem, attention has focused on international action with measurable targets to reduce macro-plastic and micro-plastic marine pollution. The global community had risen to similar challenges in the past. Fifty years ago, Arvid Pardo, the then Malta's Ambassador to the United Nations, called for concerted actions to address what he saw as the potential for uncontrolled exploitation of the world's oceans, threatening what he recognised as areas of the 'common heritage of mankind'. Pardo's calls for action led to changes in ocean governance, most notably the Third United Nations Conference on the Law of the Sea that concluded with the drafting and eventual entry into force of the United Nations Law of the Sea Convention (Haward, 2018). Kenya, being a signatory to similar international laws and conventions on marine conservation, there was, therefore, need for research to check the effectiveness of such legal interventions.

Haward investigated water pollution at the seas and oceans, which is a single aspect of both the phenomenon of water pollution and general environmental pollution and degradation. The study hereby heightened broader elements of environmental degradation: water pollution, air pollution, deforestation, waste mismanagement, and contraventions to land use guidelines. It investigated the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection.

Sibanda et al (2017), in their article titled *Challenges of Solid Waste Management in Kisumu, Kenya*, observed that many urban areas of developing countries grapple with increasing waste generation, an overflowing dumpsite and pollution from uncontrolled discarding of waste. To them, sustainable solid waste management had remained elusive due to a number of reasons: inadequate funding, lack of adequate skilled personnel and poor public attitude towards waste management. They recommended a sustainable solid waste management system supported by a suitably relocated Kachok dumpsite. This study sought to establish if the implementation of the ecocentric goal of education and policies had effectively (or not) enabled sustainable environmental protection. This was done by determining if waste mismanagement and other environmentally degrading activities were experienced in Kisumu and other counties in Kenya.

### **2.3.2 The Phenomenon of Environmental Degradation**

The effectiveness of the ecocentric goal of education and policies on sustainable environmental protection is assessed by observing the state of environmental protection (or otherwise) in a country. In Kenya, the National Environmental Complaints Committee is a body established under the provisions of EMCA of 1999 (sections 31-36). The body is charged with the task of investigating complaints or allegations regarding the conditions of the environment and suspected cases of environmental degradation. In its state of environment 2018 report, NECC gave the scenarios of how Kenyan citizens had destructively related with their natural environment, (NECC, 2018). It was partly on the basis of this report that our study narrated the phenomenon of environmental degradation by highlighting citizenry activities on the physical environment. Such would help to assess how effective, or otherwise, the ecocentric goal of education and policies have

been in ensuring sustainable environmental protection. This was done by observing environmental protection (or not) within the premises of physical environmental characteristics of water, land and air in Kenya as follows:

### **Deforestation**

Deforestation is simply the cutting down of trees, whose effects include soil erosion, landslides, silting, loss of wild habitat, pollution and climate change (Perez, 2017). In most of the world, deforestation, caused by escalating demand for food, fibre and fuel, was degrading ecosystems, diminishing water availability, and limiting the collection of wood fuel (Bambo, 2018). Deforestation in Kenya was as a result of people clearing the land for farms, timber merchants over-logging, government selling or giving away large tracks of forests in corrupt deals, and other forms of mismanagement (VOA, 2009). This was witnessed through the following pictorial reports shown below:-

**Figure 2.1: An Erratic and Illegal Clearing of Forest within the Mau Conservancy.**

**Clearing of forest land within the Mau**



Source: NECC, 2018 (Photo taken at the Mau Conservancy, August 2017).

Mau Forest is Kenya's largest closed-canopy forest ecosystem. It is a very important water catchment in the Rift Valley and to the west of Kenya. The forest complex is the upper catchment of most of the rivers on the west side of the Rift Valley. These rivers

carry the Mau waters all the way to Lake Turkana in the north, Lake Natron in the south, as well as Kenya's most populous rural areas in the Lake Victoria basin. They therefore support tourism, agriculture, rural livelihoods and wildlife habitat, among others, (Mwaniki, 2016). Any destruction to this conservancy would imply cutting short human livelihoods and wildlife habitat in Kenya. The destruction of Mau Conservancy continued while NEMA, KFS and county government officials have the responsibility to ensure its sustained conservation.

**Figure 2.2: Illegal Logging of Trees in Tarakit Hills, Kaptolomwon and Korokon Forests in West Pokot County**



**Source: NECC, 2018 (Photo taken at Kaptolomwon Forest, West Pokot County, March 2017)**

The picture above showed how Kenyan citizens had haphazardly cleared forest covers even in government-designated forest lands. They did such for farming and uncoordinated human settlements. Forests and trees store carbon and help militate against climate change. They regulate temperature and water flows, provide nutritious foods and shelter, cleanse the air and foster community cohesion and individual wellbeing. Kenya was considered a low forest country with a forest cover of less than 10% of the total land mass, the internationally recommended threshold. A continued destruction of forests as witnessed above would make the attainment of the required forest cover impossible. The

benefits that accrue to human life would also not be tenable (Bambo, 2018; Olayide et al, 2018).

Major towns had water rationing programmes. This was so because Kenyans were cutting down more trees than they would plant, some of them in key water towers. From Nairobi's Karura forest to the swathes of forested lands in South Nandi, forests had been incorporated into patronage networks that continuously shrunk forest cover (Wesangula, 2018). Various reports has indicated that Kakamega Forest, the only tropical rainforest in Kenya, was facing extinction due to deforestation by the neighbouring community and illegal loggers. The rate of forest degradation was estimated to be 180 ha per annum, (NECC, 2018). A taskforce was appointed in 2018 by the then Cabinet Secretary for Ministry of Environment and Forestry, to inquire into the Forest Resources Management and Logging Activities in Kenya. This was necessitated by an observation that,

In recent years, Kenya's forests have been depleted at an alarming rate of about 5,000 hectares per annum. This is estimated to lead to an annual reduction in water availability of approximately 62 million cubic metres, translating to an economic loss of over USD 19 million (Taskforce Report, p.5).

The terms of reference, among others and to the interest of this study, were to determine the scale of illegal logging, destruction, degradation and encroachment of public and community forests, water towers and other catchment areas as well as the associated impacts, to review and determine the effectiveness of the monitoring and verification procedures to ensure compliance with the license conditions, replanting, to determine their adequacy and effectiveness, to determine the institutional and technical capacity of the Kenya Forest Service and other agencies involved in the management of forests to enforce compliance with forest laws and regulations, to determine the effectiveness and efficiency of inter and intra-agency collaboration amongst all agencies involved in the

management of forests, to review and determine the effectiveness of participatory forest management programmes, including the operational and governance structures of Community Forest Associations, to make recommendations on short-term, medium-term, and long-term actions to ensure sustainable management, restoration and protection of forests and water catchment (MoEF, 2018). In some of its findings, the Taskforce noted:

The Board and Management of the Kenya Forest Service has been unable to stem and in some instances have directly participated in, abated, and systemized rampant corruption and abuse of office. By so doing, they have overseen wanton destruction of our forests, have systematically executed plunder and pillaging of our water towers, and bear the responsibility of bringing our environment to the precipice....The Kenya Forest Service has institutionalized corruption, and the system is replete with deep-rooted corruptive practices, lack of accountability and unethical behaviour, (page 6).

The taskforce did not find out the underlying reasons for these observations; such was not in its terms of reference. The researcher therefore sought to establish the awareness and commitment levels of the KFS employees and citizens to matters on sustainable environmental protection in respect to forest use and conservation: their awareness and commitment to environmental ethics and responsibility. The study also sought to suggest other measures that would ensure sustainable protection of Kenyan forest and improve on its cover. The study observed that it is only development of Environmental Citizenship among Kenyan citizens that would enable accountability and ethical behaviour that the taskforce found lacking.

Filho et al (2018), in their study titled “*The Role of Transformation in Learning and Education for Sustainability*” in seven countries: Brazil, Serbia, Latvia, South Africa, Spain, Syria, United Kingdom, noted that a people’s behaviour is a reflection of their values, beliefs, attitudes and skills they acquire in their schooling or training. They acknowledged paucity of studies which examine the extent to which transformation and

learning on matters related to sustainable development. Their findings revealed that the concept of education for sustainable development has not been sufficiently integrated into the concept of transformation in higher education institutions. They also found that to enhance sustainability in the curricula, academics should develop collaborative approaches, and discuss how to redesign their own disciplines, and how to appreciate the epistemology and multicultural vision of sustainability, both as a topic, and as a field of education research. To them, reflections of the academics on their own values are crucial for developing the transformative potential of students as agents of a sustainable future (Filho et al, 2018).

Firstly, the study hereby provided literature on the assessment of the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. Secondly, whereas the study by Filho et al (2018) had a target population of students at higher education institutions, our study appreciated that environmental degradation and the required sustainable environmental protection was a cross-cutting phenomenon. Thus, there was the need to target a broader segment of the Kenyan society, especially those directly involved in environmental conservation and or degradation: the institutional officers and general citizens, as was the case in this study. The figure below was a pictorial representation of the Kenyan society that is outside the bracket targeted by Filho et al (2018) in their study.

**Figure 2.3: Charcoal burning in Kitui County, a major cause of deforestation**



**Source: Capital FM News, 2018 (Photo picture taken at Voo location of Kitui County, February 2018).**

The pictorial presentation above showed Kenyan citizenry's involvement in deforestation through charcoal burning; their environmental ethics and responsibility or lack of it, notwithstanding. The local citizens' involvement was an expression of their being oblivious (or not) of the connection between rainfall and a healthy or degraded environment. The citizens had involved in charcoal burning that threatened to wipe out the skimpy forest cover in the vast dry county (Muraya, 2018).

Such trends of citizenry involvement in environmentally degrading activities were witnessed despite Kenya's forest laws being among the most stringent in the world, (Birundu et al, 2017). These laws are intended to protect our forests and ensure that sustainable forest management practices are followed across the country. The legislative reforms in this light included the repeal of the Forest Act 385 of 1968, the enactment of the Forest Act 2005, which established the Kenya Forest Service as a semi-autonomous State Corporation in 2007 and the then newly formed Forest Conservation and Management Act 2016 (Wasonga, 2017). The study therefore sought to find out, from the voiced experiences of institutional officers and citizens, and from institutional reports,

how effectively (or otherwise) the ecocentric goal of education and policies (together with respective guidelines) were implemented to curb deforestation.

### **Water and Air Pollution**

Water pollution is the contamination of water bodies such as lakes, rivers, oceans, aquifers and groundwater. Water pollution occurs when pollutants are directly or indirectly discharged into water bodies without adequate treatment to remove harmful substances. It is harmful to humans, animals and aquatic life, (Manyi-Loh et al, 2018). The effects can be catastrophic, depending on the kind of chemicals and concentrations of the pollutants.

Many water bodies near urban areas (cities and towns) were highly polluted. This was the result of both garbage dumped by individuals and dangerous chemicals dumped by manufacturing industries, health centres, schools and market places. Dead fish, crabs, birds and sea gulls, dolphins, and many other animals often wound up on beaches, killed by pollutants in their habitat, (Informationcradle, 2018). As highlighted in Haward's (2018) article, water pollution is a threat to sustainable development and environmental protection in Kenya as pictorially shown below:

**Figure 2.4: Sea Animals have died due to sea pollution found along the Kenyan Coastal line in Aril, 2017**



Source: NECC, 2018.

Irresponsibly disposed plastic containers and bags along coastal lines are washed into the sea. The containers and bags then swallowed by the sea animals. Since they are indigestible, the animals die as shown in the figure 2.4 above.

In highlighting how intense the phenomenon of citizenry involvement in water pollution is in Kenya, Wafula (2020) in his Daily Nation Newspaper's article titled *The Shame of Kisumu water firm that is ruining the very Lake it's supposed to protect* observed how poisonous effluence is vomited into Kisat River, which empties into Lake Victoria. To Wafula, Kisumu Water and Sewerage Company (Kiwasco), lacks the capacity to clean the toxic waste it receives daily and instead pumps the poison into Lake Victoria, "hoping that the lake can dilute it on its behalf". In one of the biggest scandals that rocked the water industry, Wafula observed, Kiwasco is pumping at least seven dangerous chemicals into Lake Victoria, chemicals that cause all manner of diseases ranging from cancer to those that damage human respiratory systems. That partly explained why respiratory diseases have overtaken malaria as the deadliest diseases in Nyanza. The picture below explained Wafula's observation in Kisumu County.

**Figure 2.5: Untreated Industrial Effluence being emptied into L. Victoria**



**Source:** Nation Prime, February 20 2020

Ironically, the same company was harvesting water from the same lake, not too far away from where it released its waste. This was the water it cleaned and distributed to hundreds of thousands of residents in the region, thus a double tragedy. Wafula further observed that the polluters of Lake Victoria were not just the small light industries. They are also not just residents from low-income settlements like Obunga slums. Beer maker East African Breweries (EABL) and Equator Bottlers Limited, which manufactures Coca-Cola and other soft drinks for Nyanza region, were named among the list of industries that routinely failed to meet standards for treating their waste before dumping it into public sewer lines. These allegations were refuted by the said business entities. A one-year report that documented compliance levels of various industries using Kiwasco sewer system showed that the entities, together with Kibos Sugar, PECHE industries and East African Sea Foods, had a case to answer though they denied the accusations (Wafula, 2020). To further show how Kenyan citizens were involved in environmental degradation, Waste Aid, (a charitable organisation that trains communities in simple and affordable waste management and recycling skills) observed a phenomenological challenge with waste management in Nakuru County. Such was showed by the following photographic representation:

**Figure 2.6: Solid waste pileups at Kwa Muhia on the shores of Lake Naivasha in Nakuru County.**



**Source:** Waste Aid, 2018 (April, 2017).

The solid waste pile-up in Figure 2.6 caused several environmental hazards: smoke from burning piles of waste permeates the air, the open dumping attracted wild animals, domestic animal plastic indigestion, and disease and rain water washed the waste into the lake, (Mugambi et al, 2020). This was a case for both water and air pollution. Air pollution occurs when gases, dust particles, fumes (or smoke) or odour are introduced into the atmosphere in a way that makes it harmful to humans, animals and plant. Air pollution threatens the health of humans and other living beings in our planet. It creates smog and acid rain, causes cancer and respiratory diseases, reduces the ozone layer atmosphere and contributes to global warming (Choudhary & Garg, 2015). Air pollution was a visible problem in Kenya’s capital, Nairobi. The city’s poor air quality was evident in its congested streets where passenger vehicles, trucks and motorcycle taxis jostled for space while belching clouds of black smoke. In the absence of collection of waste by municipal authorities, communities in Kibera slums were forced to burn the waste in public, which fouled up the air, (Priyanka de Souza, 2018) as indicated in Figure 2.7:

**Figure 2.7: Public burning of solid waste next to residential areas, with hazardous effects on human health in Nairobi County**



**Source: NECC, 2018 (Photo taken from Kibra in September, 2017)**

The picture above showed Kenyan citizens burning solid waste that included plastic containers and bags in public, oblivious of the negative effects that the smoke would have on their human health. It was also a failure on the part of NEMA and County Government of Nairobi to effectively ensure proper waste management implementation and policy guidelines. Some households even resorted to burning plastic bags and containers when they cannot buy charcoal or kerosene. Burning these fuels released pollutants such as carbon monoxide, sulphur dioxide, nitrogen dioxide, poly-aromatic hydrocarbons as well as particulate matter of varying sizes. Wood smoke has been shown to have similar pollutants as cigarette smoke, but at higher concentrations. This had health implications for firewood users. Poor ventilation in homes because of concerns about security or outdoor air pollution added to the levels of pollution. The pollutants were associated with respiratory diseases, cancers and adverse maternal and child outcomes (Muindi & Mberu, 2017). Governments have developed, and continue to develop, guidelines for air quality and ordinances to restrict emissions in an effort to control air pollution, (Choudhary & Garg, 2013).

Muindi and Mberu (2017) in their study titled *Invisible and Ignored: Air Pollution inside the Homes of Nairobi's Residents: A Case Study of Korogocho and Viwandani, Nairobi-Kenya*, indicated that average levels of fine particulate matter within households are approximately 76  $\mu\text{g}/\text{m}^3$ . This is over three times more than the WHO recommended maximum level of 25 $\mu\text{g}/\text{m}^3$ . Their other findings included, that price controls may be initially effective in controlling air pollution but sustaining gains in air quality and health outcomes required a combination of different measures and that, to control indoor air pollution required control of outdoor air pollutants. They therefore recommended that the

challenges of both indoor and outdoor air pollution be monitored and addressed by policymakers.

The researcher observed that mitigating destruction of environmental elements and sustainable conservation of the same requires a multifaceted approach of measures. With environmental degradation as witnessed in Kenya {see figures 2.3.2b and 2.3.2c above for instance}, the study sought to find out if there were any underlying factors for such and consequently recommend a myriad of measures to ensure sustainable environmental protection.

Through the legal notice No. 34 of 2013, and with the mandate of the EMCA 1999, the Environment Management and Co-ordination (Air Quality) Regulations 2013 were established. The objective for these regulations was to provide for the prevention, control and abatement of air pollution to ensure clean and healthy ambient air (NEMA, 2013). Hence, this current research observed that there were policy frameworks and even an ecocentric goal of education to monitor and address issues on environmental protection in Kenya, including air pollution. Thus, it was not for lack of educational and policymakers' framework that Kenya continued to witness incessant environmental degradation. The study hereby sought to assess the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya, in light of observed citizenry involvement in environmental degradation. It also sought to determine the underlying factors for the observed incessant environmental destruction in Kenya, despite the existence of an ecocentric goal of education and policies on sustainable environmental

protection. Finally, the study sought to suggest alternative measures to ensure sustainable environmental protection in Kenya.

### **The Garbage Challenge and Its Impact on Sustainable Environment**

Uncollected solid waste was one of Nairobi's and other counties' most visible environmental problems. Many parts of urban areas, especially the low and middle-income areas, don't even have waste collection systems in place. In high income areas, private waste collection companies are booming, where the residents pay handsomely without knowing where the waste will end up (The Conversation, 2018). The following captions from NECC 2018 report was an indicator of how dire the situation was across the country:-

**Figure 2.8: An undesignated dumpsite in Narok town, a breeding site for pathogens and a source of Air Pollution**



**Source: NECC, 2018 (Photo taken from Narok Town in August 2017)**

The picture above, taken from Narok Town, indicated how solid waste was dumped in undesignated sites in Kenya. Such sites were breeding places for pathogenic agents like mosquitoes. The stench emanating from such also polluted the air for the surrounding human settlements. This phenomenon was also indicated by the picture below.

**Figure 2.9: Undesignated dumpsite in Langata, Nairobi County, a breeding site for pathogens, a source of air pollution and a risk to motorists and animal health**



Source: NECC 2018 (Photo from Langata, Nairobi County, February, 2017)

The above undesignated dumpsite observed in Langata Sub-County was also a pathogen-breeding site. The waste would be blown to the road next to it and thus become an unnecessary risk to motorists. Once the waste was washed to the surrounding water ways, it also caused a great deal of water pollution. The observation above resonated with NEMA's Kenya Environmental Performance Index, 2018 assertion that:

Data on solid waste management for most counties is lacking, as cities have inefficient waste collection and disposal systems....The majority of counties collect less than 40% of the total solid wastes that are generated in urban areas, (NEMA-KEPI, 2018, p. 24 & 25)

The phenomena of deforestation, water pollution, air pollution and waste mismanagement highlighted above were a contravention of the national environment policy objectives (b), (c) and (d), (National Environment Policy, 2013, page 8) and the EMCA Waste Management Regulations of 2006.

#### **2.4 Underlying Factors for Incessant Environmental Degradation**

Cherdymova et al (2018) in their study on *Student Ecological Consciousness as Determining Component of Ecological-Oriented Activity, in Russia*, targeted students taking a variety of courses at the universities in Moscow. Their main method of research

was testing by use of psycho-diagnostic techniques with mathematical methods and computer data processing. They observed that students' phenomenological actions and reactions, that reflected their environmental behaviour, are determined by their acquired attitudes, beliefs, values and skills acquired in respect to the phenomenon.

Their other findings included: that certain incentives led to the promotion of certain human environmental actions, and the more the incentives are similar to the past ones, the more likely the person is to perform the same environmental actions or some similar actions in relation to the environment; the more often one person encouraged the environmental actions of another one over a period of time, the more often that other person exhibited environmental actions; the more valuable another person's environmental actions were to a person, the more often one performed an environmental actions encouraged by the action of another. Finally, the more people in the recent past accepted incentives from other people, the less valuable each further unit of such environmental activity became. They concluded that the students experienced a variety of feelings in relation to natural objects and phenomena and that they could express themselves through emotions: see, empathize, contemplate, and enjoy the beauty of nature.

From the study by Cherdymova et al (2018), human consciousness on environmental issues underlies people's behaviour to the natural environment. Hence, with an observed incessant environmental degradation in Kenya, the study hereby sought for the underlying factors to this phenomenon. Secondly, environmental destruction and the required sustainable environmental protection practices are human phenomena. Thus, our

study used citizens' first-hand voiced real experiences to generate themes that outlined the underlying factors to environmental degradation in Kenya. This was unlike Cherdymova et al (2018) who employed psycho-diagnostic techniques with mathematical methods and computer data processing that delineates the real human contributory reflection. Finally, Cherdymova et al (2018) targeted university students who are a small segment of the society while the general citizens are the agents of environmental degradation and still, the beneficiaries of a sustainable protected environment. Our study targeted the institutional officers and general citizens who had both school and out-of-school experiences on environmental issues.

Barbier and Hochard (2018) in their study titled, *Land Degradation and Poverty*, observed a highly positive correlational interaction between degrading agricultural land and low-income populations in Sub-Saharan Africa (SSA) and South Asia. To Barbier and Hochard (2018) this interaction was actually conditioned by key economic, social and environmental factors in SSA and South Asia. They therefore suggested a comprehensive development strategy with investments that improved the livelihoods of affected populations and regions, and facilitates outmigration in severely impacted areas.

Several aspects were pointed out in Barbier and Hochard's study: there were underlying factors that determined citizenry interaction with their physical environment, these factors were multi-faceted, and there is required intervention measures that ensured sustainable human-environment interaction. Therefore, this research study sought to establish the underlying factors for the incessant environmental destruction in Kenya, despite an ecocentric goal of education and policies on sustainable environmental

protection. It also sought to suggest measures that would ensure sustainable environmental protection.

On the factors that would underlie incessant environmental destruction, Sekrafi and Sghaier (2018) did a study titled *Examining the Relationship between Corruption, Economic Growth, Environmental Degradation, and Energy Consumption: A Panel Analysis in MENA Region*. They investigated the relationship between energy consumption, corruption, environmental quality, political instability and economic growth in 13 Middle East and North African (MENA) countries over the period 1981-2012. They employed both static and dynamic panel data approaches in their investigation. Their empirical results showed that increased corruption adversely affected economic growth, environmental quality and energy consumption. Policymakers were to help build economic policies that sustained economic development and ensure environmental quality.

The study hereby sought to determine if other factors, including corruption (and the type of corruption) underlay the phenomenon of environmental degradation in Kenya. Commonly recurrent themes from respondents' voiced experiences were used to establish the factors and suggest alternative measures that ensured sustainable environmental protection in Kenya. It broadened the scope of the study.

Kinyi (2015) in her study on *Factors Influencing Awareness and Participation of Secondary School Students in Environmental Education Activities in Dagoretti West Sub-County, Kenya*, sought to establish the relationship between teachers' awareness of environmental education and students' understanding and participation in environmental

activities. It was observed that teachers' awareness positively influenced students' understanding of environmental issues, that is, students' understanding and participation in environmental activities increased with teachers' awareness. To her, teachers' levels of awareness of environmental issues and or aspects, influenced levels of learners' understanding, attitudes and participation in environmental protection. Kinyi's study also observed teachers' inadequacy and challenges on capacity, preparedness, access to information and teaching materials. This had an effect on the teachers' impact on influencing learners' awareness, commitment and participation in environmental protection.

There was therefore the need to widen the scope by establishing factors that affected Kenyan citizens' acquisition of environmental ethics and their development as environmental citizens with a commitment and participation in sustainable environmental protection. This would be done by interrogating their formal and non-formal experiences on sustainable environmental protection.

## **2.5 Alternative Approaches for Effective and Sustainable Environmental Protection**

As shown in the background of the study, the United Nations' SDGs are a set of globally agreed objectives to end poverty, protect and ensure that the planet is habitable and that all people enjoy peace and prosperity, (Morton et al, 2019). Such postulates the concept of biospherical egalitarianism that ensures intergenerational justice (Steele, 2011; Koprina, 2014). This was the basic understanding upon which the ecocentric goal of education and policies on sustainable environmental protection were or needed to be

constructed. Consequently, it was only an effective implementation of this goal and policies that can ensure sustainable environmental protection in Kenya.

With observed incessant environmental degradation in Kenya despite her ecocentric goal of education and policies on sustainable environmental protection, there was need for measures that would ensure their effective implementation. Such measures would enable a clean and healthy environment as constitutional right to Kenyan citizens. Interestingly, Campbell et al 2019, in their UNEP (2019) Report titled *Measuring Progress: Towards Achieving the Environmental Dimension of the SDGs* observed that:

There is either no data or no progress towards all 12 of the SDGs targets related to the state of the environment. There is very little data that can be used to assess biodiversity, ecosystem health, the concentration of pollution and waste in the environment, and other environmental threats with only five of these SDGs targets having available data. However, based on the information that is available, many of the planet's resources and ecosystems are at risk...there remain challenges in terms of achieving sustainability for these targets. There is not enough data to assess progress on water efficiency management and generation of waste and hazardous waste, food waste, recycling, corporate sustainability reporting, and research and promotion of sustainable lifestyles. Many of these aspects of development have received little attention and, without additional focus, it is unlikely that these targets will be achieved. Additionally, as some of these targets have a 2020 timeframe, it is unlikely that they will be met, (Campbell, et al, 2019, P. 6 & 7).

This report generally indicated how governments, the world over, have given little or no attention and commitment to sustainable environmental protection. Specifically, there is no research study in Kenya that has assessed the effectiveness of the ecocentric goal of education and policies on environmental protection. The study hereby investigated the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. For such, it highlighted the impact of pollution and destruction of biodiversity as a measure of the effectiveness. In its report, UNEP, being the United Nations' wing that leads matters on environmentalism, painted an obscure

future on sustainable environmental protection. Such was the basis for this study's clarion call for alternative measures to ensure effective and sustainable environmental protection.

### **2.5.1 The Need to Disregard Anthropocentric Tendencies**

The anthropocentric perspective postulates that the world exists for humanity. Its believers hold the view that humans should rightfully benefit as much as possible from the environment: human centredness (Minty, 1999). This belief presupposes that nature has no inherent value beyond its use to mankind. The value of non-humans is only insofar as they benefit human beings (Snauwaert, 1996).

One of the greatest anthropocentric effects on the planet earth is overpopulation. A greater number of people consume more items that need more energy to make, drive more cars that do more exhaust emissions and create more waste and garbage (Mutua, 2011). Carbon dioxide emissions had grown dramatically in the past one century because of human activity, chiefly the use of fossil fuels and changes in land use such as cutting down of forests. These emissions contributed to climate change: rising temperatures, extreme weather patterns, spread of infectious diseases, and more stress on the environment, (Haub, 2007). Humans had, in their endeavour to 'rule' the universe engaged themselves in very hazardous activities which threatened even their own life on earth. Introduction of chlorofluorocarbons, halocarbons and other gases, industrialization, deforestation, explosion on agriculture and increased demand for human settlement had heightened the greenhouse effect (Nelson & Stolterman, 2014).

Mthethwa (2012) in his study on *Critical Dimensions for Policy Implementation in South Africa* sought to describe and explain the effectiveness of public policy implementation and the factors that act as barriers to effective implementation. To him, policies are influenced by the contexts in which they are developed such as the content of the policy, the nature of the policy process, the actors involved in the process and implementation. He argued that a supportive policy environment is regarded as one of the cornerstones of improved and effective implementation. The human actors were the agents to provide the supportive policy environment. A supportive policy environment requires that the actors disregard anthropocentric attitudes. This study sought to determine, especially through the interviews conducted, the contextual human factors that underlie incessant environmental degradation in Kenya.

### **2.5.2 The Moral Will as a Prelude to Environmental Citizenship**

Human beings are naturally in control of their moral commands or wills, as classically postulated by Thomas Aquinas as tenets of the *Natural Moral Theory* (Murphy, 2019). What educational and policy implementation strategies do is to fashion or package the control in a desired direction. This is so because moral worth depends on acting from duty, from respect for law in accordance with the categorical imperative (Goldier, 2009). A moral will is exhibited in human character traits and or actions. A character trait is a disposition to take certain types of considerations as reasons (or as motivational) for actions or emotions under certain types of circumstances, (LaFollette, 2013). Education for sustainable development is expected to enable development of environmental virtues and character traits that assures a commitment on the part of the citizens to act

responsibly and sustainably towards the environment. Such is the focus in *Environmental Citizenship* through inculcating environmental ethics.

Morse (2006), a control theorist, in his study titled *Is Corruption Bad for Environmental Sustainability? A Cross-National Analysis* observed that higher levels of corruption are detrimental to environmental sustainability. To Morse, corruption reduces any positive contribution from response indicators towards environmental sustainability. This was indicated as so in appendix (vii) on environmental protection success and low corruption perception indices.

Morse (2006) used a regression analysis of the corruption perception and environmental sustainability indices to address the cause-effect relationship between corruption and environmental sustainability. He concluded that the relationship between corruption and environmental sustainability requires more qualitative case studies that could generate insights that would help with the interpretation of national studies. The study hereby filled this gap through the use of qualitative analysis of the respondents' lived experiences and views on the phenomenon of environmental degradation. The respondents also suggested alternative measures that would enable sustainable environmental protection in Kenya.

Corruption, as a practice, is both an ethical and moral issue. It is especially exhibited by institutional employees based on corporate or individual motives (Gorsira et al, 2018). Corruption that occurs in the environment sector is devastating, as noted by the taskforce report on forest management and logging activities in Kenya (page 6). Such practice included embezzlement during the implementation of environmental programmes, grand corruption in the issuance of permits and licenses for natural resources' exploitation, and

petty bribery of law enforcers. Corruption can happen during the initial stages of the resource exploitation process as well as during operation. These offences, when committed at the individual or local levels, would result in loss of resources, habitats and general degradation of ecosystems, with direct or indirect effects on the livelihoods of local communities (Fabricius, 2013). With human development and settlements witnessed on riparian lands and conservation-designated areas like forests, the researcher could only purpose to determine what factors underlain citizenry involvement in environmental destruction as shown in Figure 2.10.

**Figure 2.10: Residential houses constructed on a Wetland, against the National Land Use Guideline (ILUG), 2011.**



Houses constructed on an area with riparian vegetation in Juja, Kiambu County  
Source: NECC, 2018 (Photo taken in March, 2016).

The picture in Figure 2.10 showed human construction on a wetland. The National Land Use Guidelines instituted by NEMA in 2011 allows any construction within a buffer zone of thirty metres from a water body and that “a wetland shall under no circumstance be drained”, (ILUG, 3.1.1/3.1.2 Guidelines, p. 6 & 8). The construction shown in the pictorial representation above either had all the statutory approvals and or took place at the watch of institutional officers who are required to ensure compliance to the said guidelines. Either way, it was an indication of compromised moral wills (failure to

morally be committed to follow the rule of law) by the institutional officers or individual developers or both.

In 2018, Kenya ranked 143 out of 180 in global corruption index. Kimeu, the then Director of Transparency International (TI) Kenya observed that “there was no proper law enforcement to corruption in Kenya compared to Rwanda”, (Chepkwony, 2018). Kenya being the 143<sup>rd</sup> least corrupt country, had averaged 124.43 from 1996 until 2017, reaching an all-time high of 154 in 2010 and a low record of 52 in 1996 (Economics, 2018). With a strong correlation between corruption and environmental degradation and the observation by Kimeu, the ecocentric goal of education and policies objectives to ensure sustainable environmental protection in Kenya appeared a great challenge. There was therefore the need to suggest measures that would enable acquisition of moral wills that govern human-nature interrelationship to ensure sustainable environmental protection.

### **2.5.3 Environmental Ethics and Responsibility as a Prelude to Environmental Citizenship**

In laying the foundation for Environmental Citizenship, Aristotle, 384-322 B.C, reiterated that Citizenship and ethics are one. Ethics is from the standpoint of the individual. Citizenship is from the standpoint of the group. The moral character of an ethical person is the same set of characteristics or virtues needed to be a good citizen, (Cohen-Almagor, 2017). In support of environmental ethics, Aldo Leopold, a game management expert and ecological ethicist 1886-1948, in his *land ethic* says that “... a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of

it. It implies respect for his fellow-members, and also respect for the community as such”, (Leopold, 2017). This should be the basic principle for an ecocentric goal of education and its corresponding policies on environment, put up to achieve expected values, beliefs, attitudes and skills among Kenyan citizens.

However, educational reformers had identified a gap between what is taught and the skills and knowledge that is necessary for an interconnected 21<sup>st</sup> century (Ngobia, 2015). During the 2<sup>nd</sup> UNESCO’s forum on global citizenship, 2015, Irina Bokova, the then director general, underscored the role of education in shaping human behaviour for solution of the post-2015 problems. In his words, “...*we need new skills for new times – to foster greater respect and understanding between cultures, to give learners tools to make the most of diversity, to develop new values and behaviours of solidarity and responsibility, to harness the energy of young women and men for the benefit of all*”, (UNESCO, 2015). It was the gap for “new skills for new times” that this study sought to fill by seeking for respondents’ views for ethical or otherwise alternative measures to ensure sustainable environmental protection in Kenya.

Jordan and Kristjansson (2017) in their study titled “Sustainability, Virtue Ethics, and the Virtue of Harmony with Nature” observed that dominant sustainable development approaches have failed to acknowledge the interconnectedness and interrelatedness of social and environmental issues. To Jordan and Kristjansson, issues on sustainability required a transformational approach that involved fundamental change in how humans relate to each other and nature. They proposed an approach involving virtue ethics. These are ethics grounded in Aristotle’s Nicomachean Ethics, where he underscored the essence

of moral virtues that are guided by practical wisdom, (Reeve, 2013). Borrowing from this view, these expected moral virtues were to be guided by practical wisdom reflecting sustainable environmental protection actions intended through the ecocentric goal of education and policies. The moral values postulate a framework that tackles the required transformation that addresses the human-nature interrelationship and fosters a strong ecological perspective. This framework also facilitates a holistic and integrative understanding of sustainability. The study hereby sought alternative measures that are ethical and transformative in approach to ensure sustainable environmental protection within the Kenyan context, in light of Jordan and Kristjansson's (2017) observation.

Okewu et al (2017) did a study on *Optimizing Green Computing Awareness for Environmental Sustainability and Economic Security as a Stochastic Optimization Problem* using Nigeria as a test case. They gauged green computing awareness levels of Africans via sample surveys. They observed the need for an optimal level of awareness that enables the use of environmentally friendly web-based multi-tier e-Green computing system that educates computer users on innovative techniques of managing computers and accessories. They called for institutionalization of green computing maturity model to optimize the level of citizens' awareness where timely conversations on electronic waste (e-waste) management and energy saving techniques among the citizenry should be a cutting edge.

Firstly, the sample survey used was stochastic in determination. Stochastic processes are widely mathematical models of systems in research. The current study used purposive sampling coupled with snowballing techniques and data were analysed as recurring

themes from respondents' experiences and institutional reports of the phenomenon of environmental degradation in respect to its sustainable protection. This was necessary since environmental degradation is a human phenomenon that arises from human actions. These actions are dependent on humans' awareness, attitudes, values and formally or non-formally acquired skills through educational practice and corresponding implementation strategies of policies. Also, an optimal level of citizenry awareness on the appropriate e-waste management for environmental conservation was a viable idea in this study. Nevertheless, the conversation on the use of on innovative techniques of managing computers and accessories was a narrow way of looking at sustainable environmental protection measures. This study sought a broader spectrum of alternative measures to ensure development of Environmental Citizenship among Kenyan citizens.

Finally, Karanja (2010) evaluated the achievement of environmental education objectives, in a case of secondary schools in Nairobi. He underscored the Kenyan Government's recognition of the importance of environmental education and the multidisciplinary approach to environmental education in schools; both primary and secondary schools. He interrogated the effectiveness of environment related activities in enhancing learners' awareness, knowledge, attitudes and skills for environmental management.

Karanja observed that learners' awareness, knowledge, attitudes and skills for and participation in environmental management within Nairobi was inadequate. In his study, he appreciated learners' awareness, knowledge, attitudes and skills on environmental issues as a determinant of their commitment and participation in environmental

management. In order to achieve the objectives of Environmental Education, he recommended an educational policy review to make it be taught as a practical subject.

The study hereby sought to interrogate the effectiveness of the ecocentric goal of education and related policies on sustainable environmental protection in Kenya. Thus, it sought to determine the underlying reasons for observed incessant environmental degradation in Kenya. It also sought to recommend alternative measures to inculcate Environmental Citizenship, that is, development of transformative knowledge, attitudes and skills among Kenyan citizens, to enable effective participation in sustainable environmental protection. Such transformation would be necessary for effective implementation of the ecocentric goal of education and policies on sustainable environmental protection.

## **2.6 Summary and Study Gaps**

This chapter reviewed reports and literature related to the study objectives and identified the study gaps. The reviewed studies showed existing connection between human awareness of a given environmental phenomenon and human actions in response to the same. In the review, it was noted that despite Kenya's ecocentric goal of education and policies on sustainable environmental protection, there remains an incessant environmental degradation. With regard to paucity of data, none of the reviewed literature was on the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection, not even in Kenya (Funke, 2017; Filho et al, 2018; Campbell et al, 2019).

A gap existed in that, quite a number of the reviewed studies targeted a small segment of the society as far as the phenomena of environmental degradation and that of environmental sustainability is concerned, majorly the students, (Kopnina, 2014; Karanja, 2017; Filho et al, 2018; Ngota, 2019). This study broadened the target population scope to include institutional officers and general citizens since they were directly involved in environmental degradation and or sustainable environmental protection in Kenya. The target population would also relate with both their formal and non-formal educational experiences in respect to acquisition of environmental ethics, commitment to and participation in sustainable environmental protection in Kenya. With increased access to education by the Kenyan citizens, a gap existed to investigate if this increased access had translated to awareness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya (Mwaka et al, 2013; Nicolai et al, 2014).

Environmental degradation and sustainability are human phenomena and an investigation on the same would require an adequate qualitative analysis of participants' lived experiences in respect to the phenomena, their underlying factors and solution measures. Unlike this study, quite a number of reviewed studies mainly used mathematical methods of analysis (Okewo, 2017; Oyero, 2018). Most of the reviewed studies investigated a single environmental challenge and or intervention measure and by use of a single research design. That considerably narrowed the scope especially for environmental protection and sustainability issues (Morse, 2006; McGrath, 2007; Karanja, 2010; Mthethwa, 2012; Kinyi, 2015; Ngobia, 2015; Jordan & Kristjansson, 2017; Muindi & Mberu, 2017; Pradhan et. al., 2017; Sibanda, 2017; Barbier & Hochard, 2018; Cherdymova, 2018; Haward, 2018; Morgans et. al., 2018; Sekrafi & Sghaier, 2018). This

study employed a mixed research approach to obtain broader, deeper and complimentary data and analysis and investigated three environmental intervention measures on sustainable environmental protection in Kenya, that is, the ecocentric goal of education and two policies. It gave a broader outlook into the phenomena of environmental degradation and the required sustainable environmental protection in Kenya.

## **CHAPTER THREE**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **3.1 Introduction**

This chapter focused on the research design and methods that were applied in the study. The main sections are the research design, research methods including descriptive method with its components like: target population, sample size and sampling procedure, data collection and analysis procedure and ethical considerations in the research.

#### **3.2 Research Design**

The study design was a mixture of both philosophical and descriptive approaches. In its philosophical approach, it involved both conceptual and phenomenological analyses of documents and respondents' voices. This was in order to get clarity on the effectiveness of the ecocentric goal of education and policy strategies on sustainable environmental protection. In its descriptive approach, interview schedules were used in order to obtain the actual state of the phenomenon of sustainable environmental protection from the participants' perceptions and experiences on the subject. The field visits enabled an encounter with the actual state of affairs and provided findings that were processed for integration as viable part of the study resources and analysed to obtain recurring patterns or themes.

The mixture of study approach was necessary due to the nature of the problem under investigation. Environmental protection requires a multifaceted approach based on clarity of understanding and purpose. It was therefore important to encounter documentary

evidence of institutional practices and qualitative perspectives of officers and citizens who are the primary agents of sustainable environmental protection.

### **3.3 Research Methods**

The study employed three methods, that is, conceptual analysis, phenomenological analysis and descriptive approach.

#### **3.3.1 Conceptual Analytical Method**

Analysis is a traditional characteristic of philosophy and philosophical inquiries. Usually, it is only the subject of analysis (the *analysandum*) that often varies. Among the philosophical traditions of analyses, the most prominent is arguably the analysis of concepts, that is, conceptual analysis (Novaes, 2015). In conceptual analytic method, the concept is broken down into its constituent parts in order to gain knowledge and or better understanding of a philosophical issue, problem or phenomenon, in which the concept(s) is involved. The focus here is to seek to understand the interaction of the concepts that appertain to the issue, problem or phenomenon.

Basically, concepts are the building blocks of any scientific knowledge and form the theoretical frameworks for any discipline. As a philosophical method of investigation, conceptual analysis is associated with the research design of philosophical inquiry whose purpose is to venture into research using intellectual analysis, to clarify meaning of concepts. As hinted above, conceptual analysis gives meaning, develops, delineates, compares, classifies, corrects, refines and validates concepts that are in use in any intellectual activity (Botes, 2002).

Originally, Bertrand Russel employed conceptual analysis in his famous *Theory of Descriptions*. In this theory, Russel analysed the propositions that involved both definite and indefinite descriptions. The basic idea in his theory was that a proposition is true if and only if the subject is in the extension of the predicate (Kamp, 2013). Recent advocates of conceptual analysis include George Bealer, David Chalmers, Frank Jackson and David Lewis, among others (Laurence & Margolis, 2003).

### **The Weakness in Conceptual Analytic Method and Its Applicability in the Study**

Conceptual analysis has its greatest controversy in its definitional structure of concepts. This requires one, in its analytic use, to provide both necessary and sufficient conditions for the application of the concept(s). Practically, not all cases in which the so-called necessary and sufficient conditions would apply. This is so because language serves different purposes and can be used in an indefinite number of ways. Also, words mean different things in different contexts of use. Nevertheless, citizens' clarity of awareness and understanding of environmental issues, of the impact of their actions on the environment and the need for their commitment and participation to ensure sustainable environmental protection was the focus of this study. For this reason therefore, the use of conceptual analysis was found imperative. In addition, the use of conceptual analysis in this study laid in the observation by Jabareen in his *Building a Conceptual Framework: Philosophy, Definitions and Procedure* that:

The texts selected for conceptual framework analysis should effectively represent the relevant social, cultural, political and environmental phenomenon or social behaviour, and the multidisciplinary literature that focuses on the phenomenon under study. An important point is that they should also represent practices that are related to the phenomenon. The data should therefore come from a variety of types, such as books, articles, newspapers, essays, interviews, and practices. Most texts and much data represent theories that belong to specific disciplines (*International Journal of Qualitative Methods*, 2009, Vol.8, Issue 4, p.60)

Since the Kenyan ecocentric goal of education and environmental policies were expected to inculcate in learners and citizens ethics that determine their interaction with their physical environment, this research qualified to be a study about concepts in environmental philosophy. Environmental Philosophy is the study of the concepts and principles relating to human interactions with nature and the natural environment, to related presuppositions about the relation of humanity and nature, and to practical implications for both individuals and societies (Attfield, 2018). Both formal and non-formal educational practices greatly determine these human interactions. Environmental Ethics studies principles of value and obligation, the concepts involved, the status of these principles, and their application to practical issues such as the preservation of biodiversity, ecological restoration and the mitigation of climate change (Ibid. p. 2).

This study sought to interrogate several concepts and the understanding that Kenyan citizens hold on these concepts. Although there has been a continuous scholarly debate on the link between human knowledge and action, rationality and clarity of ideas and concepts have always been a minimum threshold for knowledge that is necessary for human action. As a result, there is a wide consensus that knowledge is required for action and that action begets knowledge (Funke, 2017). Therefore, clarity of understanding that begets awareness and consciousness in respect to environmental issues and concepts are necessity for citizenry commitment and participation in sustainable environmental protection. These concepts included: ecocentric goal of education, environment, sustainability, Environmental Citizenship, sustainable environmental protection and policy effectiveness. The effectiveness was analysed by use of institutional reports of

relevantly considered statutory bodies in Kenya and recurrent themes from respondents' voices. The study analysed the way in which the ecocentric goal of education and policies on sustainable environmental protection have been implemented, with an attempt to identify measures that enhance their effectiveness. This analysis and the interpretation undertaken were done from respondents' experiences and the reports of statutory organizations like NECC, and others that the researcher deemed necessary in the course of the research period, including media reports and narratives. The choice of these documents and that of conceptual analysis as a method was done due to the need to bring out a clear understanding of the questions raised in the study.

As such, in the analysis of the documents (as explicated in section 3.6.2), recurring themes that identified with the study objectives were established to inform the findings. Such was possible since, qualitatively, conceptual analysis principally assesses the occurrence and presence of certain words, phrases, themes, metaphors, or constructs and concepts within a given text, issue, problem or phenomenon (Jabareen, 2009). This study also employed conceptual analysis as a method because of its popularity in the international debate on the concept and phenomenon of climate change, environmental degradation and their mitigation measures. The concept of physical environment as it relates to all aspects of human environments: social, cultural, political, economic, technological, scientific and religious environments, is best understood through conceptual analysis.

The effectiveness of a policy or goal, for instance on sustainable environmental protection, requires a clear understanding of its purpose or objectives. It is in this respect

therefore, that conceptual analysis helped interrogate the extent of awareness and understanding held by officers and citizens in as far as Environmental Citizenship is concerned. Lastly, education, both as a theory and practice, is a human concept that calls for the researcher's attention since the study investigates its goal on environmental protection and sustainability. The study investigated the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection and therefore conceptual analysis was appropriate in creating clear understanding of these parameters. Such was important because lack of conceptual clarity threatens construct validity, hampers theory development and prevents individuals, in light of this study, involved in sustainable environmental protection and its respective educational goal and policies, from focusing on the precise skills they wish to study and promote (Kahn & Zeidler, 2016).

### **3.3.2 Phenomenological Analytical Method**

The term "Phenomenology" is derived from two Greek words: '*phainomenon*' which means "that which appears" and '*logos*' which means "study". Phenomenology as a method of philosophical inquiry basically studies the structure of experience or consciousness. It studies phenomena which are literally understood as appearance of things, or things as they appear in human experience, or the ways human beings experience things and the meanings things have in human experiences (Smith, 2009). Phenomenology though rooted in ancient Greek language, is basically a 20th Century philosophical method. Its modern form was initially founded by Edmund Husserl, who saw it as a concern with the systematic reflection, analysis of the consciousness, and the phenomena which appears in acts of consciousness (Stanford Encyclopedia, 2008).

Modern philosophers point out that philosophical reflection must start from ordinary human experience; it is through experience that we know the world around us, that things in this world appear to us and show themselves (Njoroge and Bennaars, 1986). Phenomenological analysis studies the structure of various types of experiences ranging from perception, thought, memory, imagination, emotion, desire, and volition to bodily awareness, embodied action, and social activity, including linguistic activity (Stanford Encyclopedia, 2008).

Major contributions to this method were done by G.W.F. Hegel, Edmund Husserl in 1920 and Martin Heidegger in 1927 where according to Hegel, phenomenology is an approach to philosophy that begins with an exploration of phenomena: which presents itself to us in conscious experience, as a means to finally grasp the absolute, logical, ontological and metaphysical spirit that is behind phenomena, usually referred to as dialectical phenomenology, (Wikipedia, 2011).

For Edmund Husserl, phenomenology is the “reflective study of the essence of consciousness as experienced from the first-person point of view” (Stanford Encyclopedia of philosophy, 2008). Phenomenology takes the intuitive experience of phenomena (what presents itself to us in phenomenological reflexion) as its starting point and tries to extract from it the essential features of experiences and the essence of what one experiences. Such is the transcendental phenomenology.

To Martin Heidegger, the structural features of both the subject and object of experience (which he called the ‘Being’) is overlooked in the above perceptions and therefore he expands phenomenological inquiry to encompass the understanding and experience of

being itself and to him therefore, phenomenology is the study of being, ontology (Wikipedia, 2011).

In recent philosophy of mind, the term “phenomenology” is often restricted to the characterization of sensory qualities of seeing, hearing, etc: what it is like to have sensations of various kinds. However, our experience is normally much richer in content than mere sensation. Accordingly, in the phenomenological tradition, phenomenology is given a much wider range, addressing the meaning things have in our experience, notably, the significance of objects, events, tools, the flow of time, the self, and others, as these things arise and are experienced in our “life-world”, ( Smith , 2009).

The phenomenological method was adopted as a complementary method in this study. In the light of the assumption that in Environmental Citizenship, human beings act and react as a result of values and attitudes that they developed through life experiences, education, as a human phenomenon, is expected to inculcate the sense of environmental ethics and responsibility in learners. This would enable their effective participation in sustainable environmental protection. The implementation strategies of environmental policies are also expected to develop citizenry awareness, skills and participatory actions on sustainable environmental protection. Climate change and its adverse effects on the environment is a phenomenon that informs the greatest focus in the 21<sup>st</sup> Century and beyond. As observed, citizenry involvement in environmental destruction and the call for an ethically-motivated participated in sustainable environmental protection, necessitated a phenomenological interrogation.

Accordingly, the phenomenological approach demanded actual research field visits in which the researcher had to encounter the participants who have real lived experiences on

environmental issues like awareness, degradation and necessity of protection. Thus, the researcher had to incorporate social scientific methodological procedures. However, the data garnered using the social science technique are appended to the thesis and effectively utilized as reference materials. This was done in order to separate primary data from the second order philosophical reflection.

### **3.3.3 Descriptive Approach**

In research, a descriptive approach in investigation aims to accurately and systematically describe a population, situation or phenomenon, (McCombes, 2019). Although descriptive research approach is a quantitative research method, it is also used in qualitative research for qualitative descriptive purposes. As a method, it concerns itself with present phenomena in terms of conditions, processes, beliefs, trends and relationships. Subsequently, it only concerns itself with individual characteristics but also the characteristics of representative samples and whole populations. It therefore provides information useful in finding solutions to local issues and problems since it obtains practical information (Salaria, 2012). Environmental ethics are exhibited in awareness, attitudes, beliefs, values and skills that enables citizenry commitment to and participation in sustainable environmental protection. For this study also, institutional and citizenry dialogue responses were obtained from their most uninterrupted circumstances and involvement. This made a descriptive component necessary in this study. As such, institutional officers and citizenry awareness on environmental issues and assessment of the effectiveness of intervention measures were descriptively established. The approach enabled the researcher to determine factors underlying the phenomenon of environmental destruction in Kenya. Their perceptions, attitudes, beliefs, values and skills on sustainable

environmental protection and suggestions on alternative measures to effectively ensure the same were sought through this method.

As a research method, a descriptive approach has its greatest advantage in that the research object is observed in its complete and unchanged natural environment, without affecting its normal behaviour, (Shuttleworth, 2008). Such enables identification of real characteristics of the phenomenon under investigation. Environmental degradation is a real human phenomenon in Kenya and the world over. As a result, its solutions would require human interventions that are based on an effectively developed Environmental Citizenship. Despite the above said advantage and justification for the use of descriptive approach in this study, the approach has limitations. Firstly, descriptive reports are likely to overstep the data. For instance, due to the open-endedness of scheduled dialogues, respondents may provide responses that are outside the study's thematic interests. This required that the researcher deliberately and appropriately structures the dialogue schedule within the study objectives. Again, the researcher needed to clearly and simply put forward the dialogue questions to the respondents. As a result, responses obtained would be within the thematic premises of the study objectives.

Secondly, studies which do not have comparison groups provide no inferences to be drawn about associations, causal or otherwise (Grimes, 2002). To counter such, the study employed document analysis as a complementary source for secondary data. That was also a provision for triangulation, thus improving the study's viability and reliability. As is the norm, the descriptive approach made use of social scientific procedures that involve target populations, sampling techniques and sample size, research instruments,

the validity and reliability of the instruments, data analysis procedures, logical and ethical considerations of the research study.

### **3.4 Target Population**

Kara-Junior (2014) defines a given research population as the subjects to which the researcher wants to sample the targeted population. This research study targeted the environmental and supporting directors of Kenya's head offices of national and county governments together with their corresponding physical planners, licensing and enforcement/inspection/compliance officers at the counties. These directors and officers are from the environment line ministry and lead conservationists and protection agencies, that is, Kenya's Ministry of Environment and Forestry, NEMA, KFS, KWS, WRA and the forty seven counties in Kenya as was found applicable. The study also targeted ordinary citizens who were involved in economic activities that negatively impact the environment in all the 47 counties.

### **3.5 Sampling Techniques and Sample Size**

Kothari et al (2008) defines a sample as a representative part of a targeted population. Thus by studying the sample, one can be able to know more about the population without having to study the entire population. The study employed purposive sampling. Purposive sampling was used to select eight counties prone to environmental degradation (as of NEMA State of the Environment 2018 Reports), and also a geographical representation of the country that included: Kisumu County, Machakos County, Narok County, Mombasa County, Turkana County, Murang'a County, Embu County and Nairobi County, together with Kitui and Nakuru Counties that were used for piloting the instruments. The study further purposively sampled officers per institution (as logistically

as was viable for the period of study) that included the directors of environment/wildlife, and compliance/ enforcement/inspection, monitoring and evaluation/auditing and licensing officers at MoEF, NEMA, KFS, KWS, WRA, and their equivalents per sampled county as indicated in the table below:-

**Table 3.1: Summary of the Target Population and Sample Size of the Study**

Agency	Target Population	Sample Size
MoEF (National Head Office)	4 Directos: Environment, Climate Change, Forest Conservation, Administration & Support Services	2 Directors: Environment & Forestry Conservation
NEMA (County Directors)	47	8
NEMA (3 County Environmental Officers: Licensing, Compliance & Auditing)	141	24
KFS(National Head Office)	4 Deputy Chief Conservators	2 Deputy Chief Conservators
KFS(Regional Offices)	10 Heads of Conservancies	6 Heads of Conservancies
KWS(National Head Office)	9 Deputy Directors	3 Deputy Directors
KWS(Regional Offices)	8 Heads of Conservancies: Field Assistant Directors	5 Heads of Conservancies: Field Assistant Directors
WRA(Regional Offices)	6 Basin Area Directors	4 Basin Area Directors
County Government Directors of Environment	47	8
County Government Officers: Licensing, Physical Planning, Enforcement/Compliance/Inspection	141	24
Local Citizens	30	30
<b>TOTALS</b>	<b>447</b>	<b>119</b>

Interrogated institutional reports and officers were purposively sampled. For the citizens, there was no data available on the population involved in environmental degradation activities and therefore snowball sampling was employed to identify them.

### 3.6 Research Instruments

Research instruments are tools of measurements that are designed to obtain data on a topic of research interest. The tools are developed to enable a researcher achieve his or

her stated study objectives. They aid in the collection of data for the purpose of analysis, (Moser et al, 2018; Stark et al, 2020). Although there are various research instruments, this study employed interview schedules and document analysis to investigate the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya.

### **Interview Schedules**

In both qualitative and quantitative research studies that involve people, data on lived experiences is recorded or collected through interviews, undeviating comments and print credentials. In the use of interview schedules as a research instrument, information is capitulated in straight reference from the respondents about their practice, view, thoughts and awareness on the subject and or object (phenomenon) of the research study. There are various types of interviews that include: personal interviews, unstructured interviews, focused interviews, clinical interviews, telephone interviews, stress interviews and behaviour-based interviews (Buriro et al, 2017).

This research study used a personal interview schedule which was administered in a face-to-face contact. A personal or face-to-face interview employs a standard questionnaire or interview schedule that ensures that all respondents are asked the same set of questions in the same sequence. Research study methods where people are interviewed are referred to as surveys, where the surveyed people are a representative of the larger targeted population. In surveys, the number of questions and their wordings are incorporated in questionnaires which are identical to all the respondents and are specified in advance, (Groves et al, 2011). Advantages for the use of sample surveys include: flexibility that

enables probing for specific answers and clarifying of questions that may be misunderstood by respondents, higher response rates than mailed questionnaires, observation of non-verbal behaviour that allows assessment of validity, possibility to control interview environment that allows for privacy, completeness in answering all survey questions and spontaneity, among others (Cohen et. al, 2013). Personal interviews are not without limitations. They include: high cost for training, travelling and accommodation, lacks anonymity, interviewer bias and prolonging of interview time, (Morris, 2015).

Nevertheless, environmental degradation and required sustainable protection interventions are human phenomena. Their inquiry therefore, called for human interaction in order to obtain practical phenomenological experiences to assess the effectiveness of intervening measures, determine underlying factors for the phenomenon and suggest alternative measures that would ensure sustainable environmental protection. For this research study, an interview schedule was therefore used to get data primary from the respondents, who included the officers in the county governments, KWS, NEMA, KFS, WRA and Ministry of Environment and Forestry at the head offices and county levels and the local citizens.

As such, the researcher compiled a list of interview questions and physically conducted the interview exercise to all the sampled institutions and local citizens. This enabled the researcher to get detailed data which were not available in secondary data. Interview questions were also flexible as the interviewer adapted to the situation in order to get as much information as possible. The interviewer was also able to clarify and elaborate the reason of the research to the respondents. The interview schedule that was administered

to obtain the study's primary data of lived experiences of the respondents is appended in Appendix I.

### **Document Analysis**

Governmental agencies and statutory bodies involved in environmental conservation and management give annual reports on the state of the environment. An inquiry into effectiveness of sustainable environment protection, in the considered opinion of the researcher, would be incomplete without an analysis of these reports, together with media narratives on the same. Document analysis, as a research instrument, was employed to obtain secondary data from the institutional reports.

Document analysis is a systematic procedure for reviewing and evaluating documents. As an analytical method in qualitative research, document analysis allows information obtained from sampled documents to be examined and interpreted to elicit meaning, get understanding and knowledge, (Bowen, 2009; Mackieson et al, 2019). The advantage is that documents contain words and images that are recorded without the researcher's involvement. Analysed documents may include advertisements, agendas, attendance registers, manuals, organizational and institutional reports, minutes of meetings, books, brochures, diaries, journals, newspapers, public records, among others. Although document analysis is majorly combined with other qualitative research methods, like interviews and observation, for triangulation, it has also been used as a stand-alone method. Such occurs when some specialized forms of qualitative research rely solely on the analysis of documents (Owen, 2014; Rapley, 2018).

Merriam (1988) points out that, ‘Documents of all types can help the researcher uncover meaning, develop understanding, and discover insights that are relevant to the research problem’ (p. 118). Angers and Machtmes (2005) carried their study by analysing documents as part of their ethnographic case study, which explored the beliefs, context factors, and practices of middle-school teachers that led exemplarily to a technology-enriched curriculum. Similarly, this study also ended up benefitting and getting the advantage of document analysis in a qualitative study research design.

The advantages of document analysis as a method of data collection include: efficiency of collection time, ease of availability since the documents are in the public domain, cost effectiveness, lacks obtrusiveness that may be a stumbling block in research, exactness, stability and broad coverage. Despite these itemized advantages, document analysis has limitations, which include: insufficiency of details, irretrievability of documents which could be deliberately blocked or hidden to conceal information and biased in selection.

Nevertheless, it was used in this study to triangulate the voiced respondent experiences on the phenomenon of environmental degradation in Kenya. Also, its use validated and corroborated the study findings. Still and considering the vitality of the physical environment in Kenya, NEMA was established. This is the statutory government lead agency in the coordination and management of the environment together with other key agencies such as KFS, KWS, WRA and corresponding county governments’ departments on natural resources and environmental protection. These agencies publish annual reports on the state of the environment and their mandates. Therefore, there would be no study on sustainable environmental protection done comprehensively without reference to and

analysis of these reports. This was the reason document analysis was incorporated in this study as a complementary method for data collection and analysis.

The documents referred to in this study included NEMA's 2018 State of the Environment reports, annual reports of both KFS and KWS, and the constitution of Kenya, 2010. These reports provided appropriate insight information on the observed state of the environment within the context of sustainable environmental protection. Such information formed the secondary data for the study, whereas primary data were descriptively obtained from the dialogue responses of the institutional officers and local citizens. Due critical diligence and caution were applied in the selection and extraction of necessary thematic data from the documents. The documents were selected on the basis of their reporting on the state of environmental issues in recognition of the statutory institutional mandate to sustainably manage the environment.

### **3.7 Pilot study**

Piloting is necessary since it ensures validity, reliability and consistency (Mugenda and Mugenda, (1999). A pilot study is the small version of the main study and is used to identify flaws in the rationalisation of the independent variables, identify imprecise items, and establish the feasibility of data collection methods and procedures (Thabane, 2010).

A preliminary study was carried out to examine the relevance of the framework chosen for research into the effectiveness of the implementation of policy strategies on environmental protection and sustainability as reflected in the ecocentric goal of education in Kenya and to explore the feasibility, comprehension and understanding of the interview schedule questions for the research. The aim of the Pilot study was to help the researcher in improving data collecting routines, and checking the appropriateness of

standard measures, gaining the overview of the expected findings and areas of improvements. First, the study had to explore the manifestation of how educational practice and respective environmental policies have enhanced (or otherwise) development of environmental ethics and responsibility for sustainable environmental protection in Kenya; identify whether the chosen framework contained relevant issues for diagnosing the effectiveness of the implementation of policy strategies on environmental protection and sustainability. Finally, the preliminary study had to identify whether the tool and methodology chosen, i.e. the interview schedule was valid compared to other methodologies. To address these various aspects, it was decided to perform two separate preliminary studies, one in Kitui County and the second in Nakuru County, since they bare common characteristics with the sampled population (Asiamah et al, 2017). The target population for the preliminary study consisted of NEMA, KFS, WRA and KWS county/regional offices and local citizens. From the pilot study, identified errors and ambiguities were eliminated, interview guides restructured, and unforeseen problems revealed, which helped in redesigning and modifying those areas for the final study. It helped to realise the need for conceptual clarity in pointing out scheduled questions during the interviews. The preliminary study also identified gaps in knowledge and practice in respect to environmental protection. This confirmed the need to conduct a comprehensive study to interrogate the effectiveness of the ecocentric goal of education and policies in relation to sustainable environmental protection in Kenya.

## **3.8 Validity and Reliability**

### **3.8.1 Validity**

A research study is valid if it measures to its major study objective and that the results are dependable. It is the extent to which a concept is accurately measured in a research study, (Heale & Twycross, 2015). For both face and content validity, all items of observation and information from official documents were deemed authentic and valid. Triangulation ensured validity of the research study with the use of multiple research methods and data sources for both primary and secondary data. A mixed research design of both qualitative and quantitative approaches also enhanced the research validity. Discussion and review of the research instruments, findings and interpretations by the researcher with the university supervisors enhanced this research validity. There was convergence of themes or categories of thematic patterns of responses from respondents sampled from different locations of sampled counties.

### **3.8.2 Reliability**

Reliability is the degree to which an assessment tool produces stable and consistent results. If the same result can be consistently achieved by using the same methods under the same circumstances, the measurement is considered reliable (Joppe, 2000; Middleton, 2019). In this study, documents and reports analysed were from statutory institutions vested with the responsibility to ensure sustainable environmental protection. Recurrent thematic patterns were obtained from the documents, reports and narratives. The same dialogue schedule was administered to all the respondents to obtain data that informed the findings, interpretations, conclusions and recommendations of the study. To enhance reliability of the research still, respondents were sampled in their most natural setups of

official contexts for the institutional officers while the local citizens were sampled within the involvement contexts of economic activities that have adverse impacts on the physical environment.

### **3.9 Data analysis**

Data analysis in this majorly qualitative study research began with the documentation which was in form of notes and recorded voices of the respondents. These voices were in form of comments, observation and feelings in response to the research and dialogue questions. This was followed by the analysis elements of conceptualisation, coding and categorisation in respect to the study thematic areas by use of summary tables. Thematic relationships were identified from the dialogue responses. Also, information obtained from the purposively sampled documents was skimmed, read and interpreted. The process involved content analysis and thematic analysis. Within content analysis, the information was organized into categories related to the research questions. Thematically, pattern forms of information recognised as corresponding to the emerging themes of the dialogue responses became the categories of analysis. The recurring and related thematic patterns from the dialogue and documents informed the findings, conclusions and recommendations of the study. For the explication, see the introduction to the filed research survey appended to this thesis.

### **3.10 Logistical and Ethical Considerations**

Before embarking on the actual fieldwork, a letter of introduction from the Graduate School, Kenyatta University was provided. This letter was a key requirement in applying for the research permit from the National Commission for Science, Technology and Innovation (NACOSTI) so as to be allowed to carry out research in selected institutions

and request for relevant documents. The researcher then sought consent of each respondent, explaining the nature and purpose of the research study. A commitment was made to the respondents on the confidentiality and anonymity of the involved persons and the assurance that the data collected would only serve the purpose of the research study.

### **3.11 Summary**

This research study used a mixed design approach with both qualitative and quantitative perspectives employed to assess the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. This being the case therefore, research methods included: conceptual analytical method, phenomenological analytic method and descriptive method. The target population for empirical data included 417 institutional officers from both national and county governments. The purposively sampled respondents were 89 together with 30 snowballed citizens. The study's primary data were obtained by use of interview dialogue schedules administered to the sampled respondents. The study's secondary data were obtained from sampled institutional reports and media narratives. Recurrent and convergent thematic responses and documentary patterns formed the research categories which contributed towards the study findings.

The next chapter presented a reflection on the ecocentric goal of education and policies on sustainable environmental protection in Kenya

## **CHAPTER FOUR**

### **A REFLECTION ON THE ECOCENTRIC GOAL OF EDUCATION AND POLICIES ON SUSTAINABLE ENVIRONMENTAL PROTECTION IN KENYA**

#### **4.1 Introduction**

This chapter was an exploration of the prevailing states of the natural environment in Kenya, against the background of her ecocentric goal of education and policies on sustainable environmental protection. The exploration was guided by the first and the second objectives of this study. It reminisce the views on the findings obtained from field survey. Thus, the characteristics of respondents, their voices, opinions, views and discussions in relation to their awareness and judgment on the effectiveness of Kenya's ecocentric goal of education and policy strategies on sustainable environmental protection were presented in this chapter. It thus contained the demographic information of the respondents, nature of the ecocentric goal of education and policies on sustainable environmental protection in Kenya, effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya and finally, the summary of the chapter.

#### **4.2 Demographic Information of Respondents**

The respondents' information started with giving the interview response success rate. The demographic information on the respondents included gender, the age, county, economic length of service in the institution, activity of the respondent, duration in the activity, and level of education of the respondent. The information was summarized in the table below:

**Table 4.1: Success Rate and Sampling Units**

Category	No of planned interviews	Actual interview schedules	Remarks
NEMA	32	20	Personnel/Logistical limitation
MoEF	2	1	Sufficient
KWS	8	5	Personnel/Logistical limitation
KFS	8	6	Personnel limitation
WRA	4	1	Logistical limitation
8 COUNTIES	32	19	Personnel limitation
LOCAL CITIZENS	30	30	All sampled target included
<b>Total</b>	<b>119</b>	<b>82</b>	<b>Significant response rate</b>

Out of a sampled population of 119 respondents , the study interviewed 82 respondents, giving a response rate of 68.9 % which is within what Thornhill ( 2012 ) prescribed as a significant response rate for statistical analysis established at a minimal value of 50%, as indicated in table 4.1 above. Demographic information of the institutional officers is presented in table 4.2 that followed below:

**Table 4.2: General Information for Institutional Officers**

Institution	Job Position	Actual Interviewed	Gender		AGE in Years		EDUCATION LEVEL			Length of Service in Current Position		
			M	F	25-36	≥37	Diploma	Graduate	Post Graduate	0-5	6-10	≥10
MoEF	Director of Environment	1	1	0	0	1	0	0	1	0	1	0
NEMA	County Directors	6	4	2	1	5	0	0	6	2	4	0
	Environmental Officers	14	9	5	10	4	2	10	2	2	8	4
KWS	Deputy Directors	2	2	0	0	2	0	0	2	1	1	0
	Heads of Conservancies	3	3	0	1	2	0	2	1	1	1	1
KFS	Deputy Chief Conservators	2	1	1	0	2	0	0	2	1	1	0
	Heads of Conservancies(ADs)	4	3	1	1	3	0	3	1	1	2	1
WRA	Regional Director	1	1	0	0	1	0	0	1	1	0	0
Sampled County Governments	Directors of Environment	5	4	1	1	4	0	2	3	2	3	0
	Physical Planner	4	4	0	1	3	1	2	1	1	2	1
	Licensing/ Enforcement	10	7	3	3	7	9	1	0	7	3	0
	<b>Totals</b>	<b>52</b>	<b>39</b>	<b>13</b>	<b>18</b>	<b>34</b>	<b>12</b>	<b>20</b>	<b>20</b>	<b>19</b>	<b>26</b>	<b>7</b>

Observations

- i. All the officers have a post-secondary training, implying over 16 years of formal education
- ii. Over 63% of the institutional officers have served for more than 5 years in their capacity to ensure environmental sustainability practices

The table above presented demographic information for the institutional respondents in terms of the agency worked for, job description, gender, age, level of education and length of service. All the institutional officers had over 16 years of formal education and 63% of them with more than 5 years of institutional engagement to ensure sustainable environmental protection. The researcher hereby considered that duration sufficient for the officers to acquire, practice and instill environmental ethics among themselves and

the citizens through stakeholder engagement. With the education and training they had and the other institutional resources expectedly provided, the officers had the platform to ensure effective implementation of the policies on sustainable environmental protection. 84% of the institutional respondents (officers at national and county governments namely; MoEF, KWS, KFS, NEMA, WRA and devolved units) were aware of ESD issues and the natural environment policy aspects as amplified in EMCA 1999. They appreciated the necessity for sustainable environmental protection in Kenya. Nevertheless, over 50% of the institutional officers were not aware of ESD and natural environment policies' specific objectives. None of the institutional respondents was aware of the ecocentric goal of education but all were aware of other goals of education, (see table 4.4). Demographic information of the general citizens is presented in table 4.3 that follows below.

**Table 4.3: General Information for Citizens**

County	Actual Number interviewed	Gender		Age in Years			Education Level			Length of Involvement In Activity in Years		
		M	F	Below 18	18-35	≥36	Primary	Secondary	Post Secondary	0-5	6-10	≥10
Mombasa	5	4	1	0	5	0	1	3	1	2	1	3
Machakos	4	3	1	0	3	1	0	4	0	0	3	1
Nairobi	5	3	2	1	4	0	1	3	1	1	1	2
Narok	3	3	0		3	0	1	2	0	1	1	1
Kisumu	4	3	1	0	3	1	0	4	0	1	1	2
Turkana	3	3	0	0	3	0	1	2	0	0	1	2
Embu	4	3	1	1	2	1	0	3	1	1	1	2
Murang'a	2	2	0	0	2	0	0	2	0	0	1	1
<b>Totals</b>	<b>30</b>	<b>24</b>	<b>6</b>	<b>2</b>	<b>25</b>	<b>3</b>	<b>4</b>	<b>23</b>	<b>3</b>	<b>6</b>	<b>10</b>	<b>14</b>

Observations:

- i. Citizenry representation that had attained post-primary education: 86.7%
- ii. Citizenry involvement in environmental degradation activity for over five years: 80%

- iii. Youth composition of respondents: 83.3%
- iv. Respondents aged above 18years: 93.3%

The table above presented demographic information of the general citizens on gender composition, age, level of education attained and the number of years of respondent involvement in activities which were environmentally destructive in Kenya. This information served to Supplement the deficiency of statistical data that has hampered the understanding of the processes that are involved in achieving SDGs (key of them sustainable environmental protection), as observed in the 2017 Africa Sustainable Development Report.

The data in table 4.3 indicated that 86.7% of the representative respondents had attained post-primary education. This implied that the respondents had sufficient opportunity during formal schooling to acquire prerequisite knowledge about environmental issues. They should have developed attitudes, beliefs, values and skills necessary for commitment to and participation in sustainable environmental protection. With 93.3% of respondents being over 18 years of age, government agencies involved in creating awareness on environmental issues and enforcing compliance to land-use guidelines, have had access to a significant citizenry segment in Kenya for effective stakeholder engagement.

#### **4.3 The Nature of the Ecocentric Goal of Education and Policies on Sustainable Environmental Protection in Kenya**

The first task of this study was to explore the nature of the ecocentric goal of education and policy strategies for sustainable environmental protection in Kenya. To explore institutional officers' and citizens' awareness of the nature of the ecocentric goal of

education and policies on sustainable environmental protection, responses were obtained from purposively sampled institutional officers and citizens who were sampled through snowballing. They expressed their experiences, in response to the first study question that reflected their awareness of the existence, nature and purpose of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. The result is indicated in table 4.3.1 as a summary of descriptive narratives from interviews conducted with various respondents as below.

**Table 4.4: Exploratory Account of the Awareness of Ecocentric Goal of Education and Policies on Sustainable Environmental Protection in Kenya**

<b>Respondents' Institution/ County</b>	<b>Ecocentric Educational goal &amp; policies on Environmental protection</b>	<b>Reasons for existence of ecocentric goal and policies</b>	<b>% of respondents aware of the ecocentric goal of education</b>	<b>% of respondents aware of any aspects of ESD &amp; Natural Environment Policies</b>
NEMA	not aware of the ecocentric goal of education but of others like international integration but aware of a few elements of ESD & Natural Environment policy	ESD & EMCA ensures understanding of environmental aspects & protection	(0%):None of the respondents was aware of the ecocentric goal of education but knew about other goals of education	90% mentioned some aspects of the policies
KWS	Do not know about an ecocentric goal of education but other goals like national cohesion etc, Aware of APSECTS OF ESD & Environment policy	Managing environment sustainably especially wildlife	(0%): None aware of the ecocentric goal of education. 78% gave examples of other goals of education	80% mentioned aspects of the policies
KFS	unawares of the ecocentric goal of education but aware of the general focus of ESD	Generally for Environmental protection and	(0%):None of the respondents was aware of	80% mentioned some aspects of the policies, knew of

	& natural Environment policies	tree/forest cover	the ecocentric goal of education but 90% knew about other goals of education	EMCA
MoEF	Not aware of the ecocentric goal of education goal but of ESD & Natural environment policies generally	To enable clean & healthy Environment	0% but gave examples of other goals of education	100%
Mombasa	aware of EMCA & ESD generally , not aware of other Sustainable Environment Protection policies	Conserve and protect the environment	0% but gave examples of other goals of education	80% aware of the ESD and Natural Environment Policy, but not specifics
Machakos	Not Aware of educational goal, but some of aspects EMCA and ESD	Sustainable management of the environment & natural resources,	0% but mentioned other goals of education	90% aware of the ESD and Natural Environment Policy, but not specifics
Nairobi	Not aware of ecocentric goal of education but aware of EMCA	The environment needs protection	0% but gave examples of other goals of education	80% recalled some aspects of ESD and Natural Environment policies
Narok	aware of ESD , aware of EMCA & Natural environment policy	General environment protection	0% but gave examples of other goals of education	86% recalled some aspects of ESD and Natural Environment policies
Kisumu	Cannot remember the specifics but has ideas on EMCA & ESD, could not recall any educational goal on environmental protection	concerns Environmental protection	0%, some mentioned other goals of education	80% aware of ESD and Natural Environment policy aspects but not specifics
Turkana	Not aware of ecocentric goal of education but EMCA & Environment	they are on environmental	0%, some mentioned other goals of	70% aware of ESD and Natural Environment policy

	policy	protection	education	aspects but not specifics
Embu	Cannot remember the specifics of ESD and Natural Environment Policies but knows EMCA	Environment matters and there is need for its sustainable protection	0%, some mentioned other goals of education	85% recalled some aspects of ESD and Natural Environment policies
Murang'a	Aware of educational practices on environmental protection, EMCA & ESD, few ideas on Natural environment policy	Sustainable Environmental Protection	0%, some mentioned other goals of education	70% recalled some aspects of ESD and Natural Environment policies
WRA	Aware of ESD issues and some aspects of the natural environment policy but not ecocentric goal of education	Environment protection is necessary	0%, some mentioned other goals of education	100%: mentioned aspects of the policies
LOCAL CITEZENS	Not aware of Ecocentric goal of education and policies, but 40% knew about environmental degradation and its effects	Over 50% feel environment needs protection	0%	0%
<b>Remarks</b>	Evidence of disconnect between acquired and practical knowledge on environmental issues and protection, school practices and community involvement in sustainable protecting the physical environment. General lack of awareness on the specifics of the ecocentric goal of education and policies on sustainable environmental protection.			

The respondents' lived experiences and institutional reports indicated the extent to which formal and non-formal education and policy implementation practices had (or not) enabled citizenry awareness of the existence and nature of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. It showed the specifics, if any, of the ecocentric goal of education and policies on sustainable environmental protection they were aware of.

### **4.3.1 Ecocentric Goal of Education**

The ecocentric goal of education objectifies citizenry commitment and participation for a clean and healthy environment. Learners' and citizenry awareness of the ecocentric goal of education is exhibited through acquisition and execution of environmental ethics. As a result, citizens develop: through formal and non-formal educational practices; beliefs, values, and skills that enable commitment and participation in sustainable environmental protection. They would, therefore, not engage in activities that are detrimental to their mental and physical health and the environment in general. In response to the awareness of the existence and nature of the ecocentric goal of education Dodman, a director of environment at the Ministry of Environment and Forestry expressed it thus:

During my schooling I never heard about the ecocentric goal of education At least we knew about “a philosophy” of love, peace and unity, goals on national cohesion and international integration, (Respondent A<sub>1</sub>).

Dodman expressed that formal education practices did not include awareness of the existence and nature of the ecocentric goal of education on sustainable environmental protection. It was however, noted that he was aware of other goals of education like national cohesion and international consciousness. Schools and schooling experiences are expected to enable acquisition of knowledge and create awareness among learners and subsequent citizens that would help them to appreciate the intrinsic value of the physical environment and manage it for their survival. Ngota (2019) underscored the role of education theory and practices of schooling as that of helping learners to be aware of environmental issues and the impact of human actions on the Earth. To Ngota, schools are expected to facilitate development of effective environmental ethics (attitudes, values and skills) among learners through corresponding practices, and even act as Centres where

young people and the larger community can learn to appreciate sustainable environmental protection.

From Dodman's voiced schooling experience, it is clear that school curriculum implementers (especially the teachers) did not pass the knowledge and or create awareness on environmental ethics and practices. It was of interest to note that the respondents (both institutional officers and ordinary citizens as later exemplified) were aware of other educational goals. That indicated the critical role education theory and practice plays in developing learner and citizenry perspectives on life issues. The practice of education in Kenya would be required to ensure that ecocentric values, attitudes, beliefs, knowledge and skills are effectively developed in learners and citizens, who are to be involved in sustainable environmental protection. It was also necessary to know if there were other opportunities for learners or citizens to learn about the ecocentric goal and policies on sustainable environmental protection in schools. Mwiga, NEMA county director at Embu County had this to say:

I have no idea about an ecocentric goal of education on environment protection. May be it was taught in History and Government, which was optional in our school and most boys did not like it. There was no environmental club in our school, (Respondent B<sub>8.1</sub>).

Mwiga expressed cases where not all subjects' content may involve issues on environment. Consequently, not all learners would be aware of the existence, nature and purpose of the ecocentric goal of education on sustainable environmental protection. To Mwiga, opportunities to learn environmental issues and protection like environmental clubs are not found in all schools. As such, Mwiga's experience indicated the non-universality of environmental issues' awareness creation either through curriculum

content or school practices or both. Jollin, a local citizen who was a mangrove wood dealer in Mombasa had the following to say:

We were not taught about any goal of education on environmental protection in school. Even when we go for barazas these days, we are only told about *Nyumba kumi* initiative and security. We are not told on conservation, but I know the environment is good for humans, (Respondent L<sub>1,1</sub>)

Jollin's experience was that formal and non-formal educational opportunities had not enabled citizenry awareness and knowledge of the existence and nature of the ecocentric goal of education on sustainable environmental protection. Although some citizens might have been be aware of the necessity of a sustainably protected environment, that level of awareness had not translated to development of values, attitudes and skills necessary for commitment and participation in sustainable environmental protection. Therefore, from Jollin's response, schools had not helped learners, and ultimately the citizens, to be aware of the existence and purpose of the ecocentric goal of education on environmental protection.

As a result, they had inadequate knowledge of environmental issues and understanding of the impact of their actions on the environment and their role in ensuring sustainable environmental protection, as observed by Ngota (2019). Jollin's voiced experience was also an indicator that opportunities presented in public interactions had not helped to create awareness on the nature of the ecocentric goal of education and its correspondence on environmental issues. Institutional officers vested with the responsibility to create awareness on environmental issues and foster sustainable human-nature interrelationship stakeholder engagements had not utilized opportunities like public barazas. On further probing on how environmental awareness was articulated in schools, Mwiano, a local citizen in Kisumu County who was sampled while burning solid waste in public at

Kachok and William who was found harvesting sand along River Thwake in Machakos County narrated respectively, as below.

One of my Kiswahili teachers, (in Form 2) would ask us to do poems and songs on *Ubora wa Mazingara* but then nothing more. We had a wildlife club but I remember we had no teacher patron and only a few students were members, (Respondent L<sub>18,1</sub>).

Mwiano's experience was that school teachers' attempt to create awareness on environmental issues was limited to their choice of subject assignments. Other than such, there were no other opportunities, in some schools, like wildlife and environment clubs for learners to know of the existence and purpose of the ecocentric goal of education on sustainable environmental protection.

I think it is only those students who took Geography who probably were taught about goal of education on sustainable environmental protection. The rest of us were never taught. I only recall the goals of education on love peace and unity and on international integration. The only thing I remember is when the Principal congratulated the environment club members for cleaning the local market, (Respondent L<sub>7,1</sub>).

William voiced cases where awareness of the nature of the ecocentric goal of education on sustainable environmental protection may have been done in some subjects. In the probable event that awareness of environmental issues was integrated in some subjects and not others, the learners who missed on those subjects would not be aware of the nature of ecocentric goal of education on sustainable environmental protection. Interestingly, this might have been a case where the respondents thought that learner and or citizenry awareness on the ecocentric goal of education on sustainable environmental protection was enabled through the "other" subjects or stakeholder engagements they were not involved in. Both Mwiano's and Williams' experiences were an indicator that Kenyan education system and educational practice, both formally and non-formally, had not created learners' and citizens' awareness of the nature of ecocentric goal of education

on sustainable environmental protection. The stakeholder engagements that state agencies had put in place had also not helped to create awareness of the same.

The study took cognizance of how respondents could remember and relate to national goals on national love, peace and unity, national cohesion and international integration. Yet, they were not aware of the ecocentric goal of education on environmental conservation and protection. This was also indication that the opportunities and experiences that formal and non-formal education present to learners inform their awareness and character traits even long after. Nazlin, a KFS Head of Mau Conservancy also expressed inadequate citizenry lack of awareness on environmental issues in that:-

I don't think the educational system in Kenya has been able to adequately create awareness on environmental protection and the need for citizens' participation in sustainable interaction. My school experiences did not emphasize such. Our efforts as institutions has not helped the situation, (Respondent G<sub>1,1</sub>)

Nazlin's response pointed to the failure of our school practices to instill environmental ethics among learners. It also showed how our institutions that are vested with the responsibility to ensure vested have, despite all the underlying reasons, failed to adequately help the situation. As observed by Nayak (2008) while referring to Tagore's (1861-1941) advocacy for environmental consciousness, citizens should adopt ecological consciousness and approach as result of school experiences and citizenry environmental engagements. This approach should be sufficiently dynamic and creative, synthetic and holistic, biotic and life-centred. It should as well as be prudent and sustainable enough to accommodate various forms of changes and diverse needs of the individual, society and the whole universe. The phenomenon of environmental degradation creates a universal concern due to its effects on human survival on Earth. Consequently, the need for education to be structured and practiced to address such a concern is paramount. Nazlin's

and other respondents' voiced experiences pointed to this need for the educational structure and practice. Such reflected Mwaka's (2013) observation that "Kenya as a country has made efforts to direct its educational endeavours towards its national goals; however, an examination of products of this system and a critical analysis of the state of the society points to the need for more effort".

Under the first theme, all the respondents demonstrated existing gaps in awareness of the ecocentric goal of education sustainable environmental protection (see for instance Respondents A<sub>1</sub> and B<sub>8.1</sub>). There was also evidence of existing disconnect between acquired level of schooling and the practical application of awareness and knowledge on sustainable environmental protection in Kenya. To most respondents, many teachers did not express awareness, knowledge and commitment to issues in sustainable environmental protection. Such is also compounded by the voiced scenario where information on sustainability was rare and optional in terms of subject content and practice during their life in school (see Respondents G<sub>3.1</sub>, L<sub>1.1</sub> and L<sub>7.2</sub>, among others).

Awareness and assimilation of the ecocentric goal of education was expected to develop knowledge, attitudes, beliefs, values and skills to enable learner and citizenry awareness of, commitment to, and participation in sustainable environment protection. As a reflection of Emmanuel Kant's inference that "man is what education makes of him", Kenyan citizens were involved in sustainable environment protection as effectively, or not, to the extent that the theory and practice of education had enabled them. The lived experiences of the respondents indicated that Kenyan educational endeavours to develop environmental ethics' prerequisite attributes have not been successful. This is the reason

that none of the general citizenry and institutional respondents was aware of the existence, nature and purpose of the ecocentric goal of education (see table 4.4).

#### **4.3.2 ESD and Natural Environment Policies**

The ESD policy is a holistic and transformational policy on education that addresses learning content and learning outcomes, pedagogy and the learning environment to achieve societal transformation. To this end, learning content involves integrating critical issues like climate change, poverty reduction, gender equality, biodiversity, disaster risk reduction and sustainable consumption and production. Learning outcomes includes promotion of core competences like critical and systematic thinking, collaborative decision-making, and being responsible for present and future generations. Pedagogy and learning environments involves designing teaching and learning in an interactive learner-centred manner that enables exploratory, action-oriented and transformative learning. Learning environments that includes physical, virtual and online platforms are reorganized to inspire learners to act for sustainability, (MoE, 2017). The situation envisioned in ESD is realized when knowledge, skills, attitudes and values are developed in learners in order to secure a just, peaceful, tolerant, inclusive and resilient societies. Such results to and can only be possible in a clean and healthy environment; the focus of the ecocentric goal of education.

On the other hand, the **natural environment policy** was a response to sessional paper no. 6 of 1999 titled *Environment and Development* which led to Environmental Management and Coordination Act (EMCA) no. 8 of 1999 and the ‘green’ constitution of 2010. It was

adopted in 2003 with the main goal being “better quality of life for present and future generations through sustainable management and use of the environment and natural resources”. Formal and non-formal educational practices were expected to enable citizenry awareness of the need for and participation in sustainable environmental protection as a reflection of the natural environment policy and its objectives.

As the basis for environmental citizenship, awareness on the phenomenon of environmental issues and consequences of human actions on environment are necessary for a commitment to act responsibly and sustainably on environmental protection. As observed by Funke (2017), the awareness enables conscious and sustainable interaction with the environment. For the citizens, the awareness of environmental issues, the phenomenon of environmental degradation and the commitment to act responsibly and sustainably on environmental protection would only be possible through formal or non-formal educational practices. Apart from school practices, public stakeholder engagements are the only opportunities for creating citizenry awareness on environmental issues and need for human commitment to act and relate sustainably with the environment. In establishing institutional officers’ and citizenry awareness of the existence, nature and purpose of policies on sustainable environmental protection, Dodman, a director of environment at the Ministry of Environment and Forestry said:

In my school days, I did not hear about policies on sustainable environmental protection or anything related to them. It is only during my environmental training and practice that I became acquainted with ESD and natural environment policies and their objectives on environmental protection, although the specifics may not be clear to most of us, (Respondent A<sub>1</sub>).

Dodman expressed that formal educational practices did not include awareness of the existence, nature and purpose of policies on sustainable environmental protection. It was during his professional training that he was acquainted with the existence and objectives of both the ESD and natural environment policies. He also indicated that officers who are vested with the responsibility to implement the policy strategies are not conversant with their specifics. It was also necessary to know if there were other opportunities for learners or citizens to know of policies on sustainable environmental protection. Mwiga, NEMA county director at Embu County, had this to say:

Articulation on issues on the environment is rare. I know ESD and the policy on environmental protection and EMCA from my training and practice here, not in my schooling, (Respondent B<sub>8.1</sub>).

Just like Dodman, Mwiga expressed cases where it was only in particular post-secondary training that a learner/citizen would know about the policies on sustainable environmental protection. Jollin, a local citizen who was a mangrove wood dealer in Mombasa had the following to say:

We were not taught policies on environmental protection in school. Even when we go for barazas these days, we are only told about *Nyumba kumi* initiative and security. We are not told on conservation, but I know the environment is good for humans, (Respondent L<sub>1.1</sub>)

From Jollin's experience, schooling and community engagement opportunities had not enabled citizenry awareness and knowledge of the existence and purpose of the policies on environmental protection. To her, institutions vested with the responsibility to publicly create citizenry knowledge of policy objectives and practices on sustainable environmental protection had not lived to their mandate. This was unfortunate considering that human beings act towards phenomena depending on the knowledge and or information they have on the phenomena, and their resolve to act in a desired or

considered direction, coupled with full awareness of the consequences of their actions, (Rodrigues, 2012). Moreover, the knowledge and sensitivity that citizens bear on environmental issues determines how environmentally responsible and sustainable their behaviour will be, (Priadi et al, 2018). Jollin appreciated that the environment plays a critical role for human. She indicated that some citizens would be aware of the need for a sustainably protected environment, but that level of awareness had not translated to values, attitudes and skills necessary for commitment and participation in sustainable environmental protection. This acceded to Duress' (a NEMA compliance officer in Nairobi County) highlight that:-

To most of these citizens, a clean environment means nothing as long they get their way out. No wonder they even build into rivers and develop on gazetted lands like national and game reserves, (Respondent C<sub>4.1</sub>)

Duress' voiced experience showed the extent to which Kenyan citizens were involved in incessant environmental degradation: constructing on riparian lands and encroaching gazetted lands. They had inadequate knowledge of environmental issues and understanding on the impact of their actions on the environment and their role in ensuring sustainable environmental protection as observed by Ngota (2019).

Dodman's, Mwiga's, Jollin's and Duress' voiced experiences were indicators of inadequate awareness of the policies on sustainable environmental protection. They expressed the hope that formal school practices and public community engagement platforms would have created citizenry awareness on the existence and purpose of the policies. This brought into the fore the necessity for citizens to learn about environmental issues and related sustainable protection in their early years of and basic schooling. Early years of schooling are the foundation for citizenry development in issues of life

(including environmental citizenship). These years form strong base for lifelong abilities that include cognitive and social development in cognizance of sustainable environmental protection, (Shonkoff et al, 2012; Yogman et al, 2018).

Figures 2.1 (given earlier) and 4.1 given below were further indicators of environmentally activities that Kenyan citizens were involved in. Such showed that citizens had not appropriated the consciousness and commitment required for sustainable environmental protection. They cut down more trees than they would plant, even in water towers as shown in the figure 2.1. They are heedless to impact on the forest ecosystems and future human generations. Kenya has a forest cover of less than 10% of total land mass. As earlier noted, forests and trees regulate temperature and water flows, provide nutritious foods and shelter, cleanses the air and foster community cohesion and individual wellbeing, (Bambo, 2018). It thus required citizenry awareness and understanding of the benefits of a sustainably protected environment, as subsumed in the policies' objectives and strategies, to deter their involvement as shown by figure 4.1 and as expressed by Duress. The above respondents' voiced experiences were corroborated by the National Environment Complaints' Committee (NECC) Report of 2018 where adult citizens were captured as in the figure below, washing vehicles at the shores of Lake Victoria in Kisumu County, oblivious of the danger the detergents and petroleum wastes being remitted into the lake water posed for both human beings and aquatic life.

**Figure 4.1: Vehicles being washed at the shore of Lake Victoria with detergents and petroleum wastes contaminating the water, making it unfit for human and aquatic life.**



Vehicles being washed at Lwang'ni Beach, Kisumu County

Source: NECC, 23-4-2018

The pictorial representation above was a case of Kenyan citizens who were using aquatic-human life-hazardous detergents as they washed vehicles at the shores of Lake Victoria. They involved in such activities oblivious of the environmental harm and health hazard that such activities posed. With a Kenyan population which was generally unawares of environmental issues, impact of their activities on environment and of necessity for sustainable environmental protection, it was no wonder that the cases represented in figures 4.1 and 4.2 were a common phenomenon. The figures showed citizenry involvement in environmental degradation activities that consistently threaten human livelihoods. Institutional officers expressed missed opportunities and inadequacy of attempts to create public awareness on the existence and nature of the ESD and natural environment policies. This was voiced by, among others, Dingima, a NEMA County Director in Turkana in that:-

Conducting public awareness campaigns on natural environment and ESD issues is greatly hampered by lack of funds. We get inadequate funds and even their disbursement is so irregular. We rarely do awareness campaigns. As you see, I have only one environment officer. How do we manage to do campaigns in all the seven sub-counties? Turkana County is very large. I will leave this station without stepping my feet in some areas, (Respondent B<sub>6.1</sub>).

Dingima expressed inadequacy of citizenry awareness on environmental issues and of their commitment to and participation in sustainable environmental protection. From Dingima's response and others, it was clear that the institutions vested with the responsibility to create awareness and ensure compliance to environmental management and the corresponding policy utility guidelines had not lived to their mandate. NEMA is a lead national agency on environmental management and conservation. With county directors like Dingima expressing inadequacy in their attempt to create such awareness (notwithstanding the underlying reasons), citizenry commitment and participation in sustainable environmental protection, as envisioned in ESD and natural environment policies, became unlikely. Nazlin, a KFS Head of Mau Conservancy also expressed inadequate citizenry lack of awareness on environmental issues in that:-

I don't think the education system in Kenya has been able to create awareness on environmental protection policies and the need for citizens' participation in sustainable interaction. My school experiences did not emphasize such. Our efforts as institutions has not helped the situation, (Respondent G<sub>1,1</sub>)

Nazlin's pointed to the failure of our school practices to create awareness on the existence and nature of ESD and natural environment policies. She also added to the admission that institutions responsible to create awareness on the nature and practices of the policies on sustainable environmental protection in Kenya have not been successful.

#### **4.3.3 A Reflection on the Level of Awareness of the Ecocentric Goal of Education and Policies on Sustainable Environmental Protection**

There are classical and modern philosophical debates on the concept of human awareness. Both the platonic and Aristotelian traditions admit the self-awareness or consciousness where the human mind gains knowledge of oneself: awareness that one exists or awareness of one's essence, (Smith, 2017). Dretske (1999) in his "The Mind's

Awareness of Itself” expressed the notion that one cannot be conscious of one’s internal affairs {one’s experiences} without being aware of these experiences themselves or the properties that give them their phenomenal character (page 104).

Drestske’s conceptualization of awareness brings out three forms of awareness: object-awareness, fact-awareness and property-awareness, (page 106). Without describing the distinction between these “awarenesses”, Drestske advocates for an awareness that involves a consciousness of things and experiences by human beings. By such, human beings become conscious and or aware of themselves and their surroundings, as advanced by Hashim and Ramadhan (2019) in their “*The Need for Developing a Fourth Level of Awareness in Human Consciousness: Unconsciousness, Pre Consciousness, Consciousness and Post Consciousness.*” Essentially, in the light of the above debates and many others, human awareness involves one’s consciousness of both their individual and collective “essences”. This is in terms of their necessary placement within, their participation and contributions to the wellbeing of their various environments.

Since human beings exist within their physical environment, their experiences within this environment, that is, the human-nature interrelationship, requires their awareness of constitute environmental issues and their contribution towards environmental sustainability. The phenomenon of environmental degradation and the need for sustainable environmental protection were realities that both institutional officers and citizens needed be aware of. The human response to these realities required citizenry character formation and training of respective rules of conduct. Thus, education, in its theory and practice, should have enabled development of such character and acquisition

of rules of conduct that constitute environmental ethics. These character and the rules of conduct are the bedrock for environmental citizenship, (Cohen, 1999). These rules and ethics constitute the beliefs, values, attitudes and skills that are embedded on the knowledge that human beings should acquire in order to act in respect to sustainable environmental protection as observed by Funke (2017). To enable this, the theory and practice of education (in its forms: formal, informal and non-formal) should expectedly have reflected the presuppositions of the ecocentric goal and policies on sustainable environmental protection.

With 80% of the citizenry respondents having been involved in environmentally degrading activities for over five years, the adverse impact on the physical environment is phenomenal, just as observed in chapter two. Again, with over 83.3% of the representative ordinary citizens being youth, any suggested alternative measure to inculcate environmental citizenship among Kenyan citizens that targets the youth would impact a greater composition of the general population.

Also, the observations in table 4.3 and 4.4 agree with those of Nicolai et al (2014) and UNESCO (2020) on education in Kenya. As it was put, Kenya's adult literacy rate has been well over 78% for over three decades now, with an over 90% of citizens obtaining primary education and an equivalent transition to secondary school. This implied that the represented Kenyan population had the opportunity to be aware of environmental issues in respect to the nature and purpose of the ecocentric goal of education and policies on sustainable environmental protection. Such awareness and consciousness would enhance development of prerequisite knowledge, attitudes, beliefs, values and skills on sustainable environment protection through educational practice and public policy implementation

strategies. As a result, there would be citizenry commitment to and participation in sustainable environmental protection. In other words, school practices (in light of the educational goal for a clean and healthy environment) and the implementation of ESD and natural environment policies (for a clean and healthy environment as a constitutional citizenry right), are expected to develop knowledge, attitudes, beliefs, values and skills that enable public awareness of, commitment to, and participation in sustainable environment protection.

In conclusion, there were gaps in creation of awareness and knowledge of the ecocentric goal of education and corresponding environment protection policies in Kenya. Translation and breakdown or integration of those policies into local context, still remains a challenge largely due to slow intake and adoption of ecocentric values, beliefs, knowledge, skills, attitude and practices among Kenyans. Gaps in Kenya's institutional system were identified where those vested with the responsibility to ensure environment protection were a majority themselves not aware of the ecocentric goal of education and other critical aspects of the sustainable environmental protection policies. More so, their ecocentric values, beliefs, attitudes and actual practices, indicated negative deficiencies on ownership and ignorance on the same policies they are supposed to implement. The study identified knowledge, attitudes and practice gaps in actual implementation of sustainable environmental protection in Kenya. This was in terms of the basic purpose of creating citizenry awareness on the existence, nature and purpose of the ecocentric goal of education and policies on sustainable environmental protection. The respondent citizens expressed unawareness of the existence, nature and purpose of the ecocentric goal of education and policies. These institutional reports were also an indicator that the

citizens and officers lacked the environmental consciousness and commitment envisioned through environmental citizenship.

Ideally though, people's knowledge {awareness and consciousness} on a phenomenon may not necessarily be the only determinant of their action or inaction towards the phenomenon. This is observed to be non-predetermined disconnect. Funke (2017) implied the disconnect {the aspect that people may not necessarily do the good they know} when he wondered "how much knowledge is necessary for action?" In this, Funke appreciated knowledge as a precondition for action. In the same vein, this study underscored the necessity for knowledge on environmental issues as a precondition for citizenry action towards sustainable environmental protection. Such requires knowledge that constitutes awareness and consciousness that enables Kenyan citizens to transcend all "odds" to act for the environment. These "odds" included other underlying reasons {see Table 5.2} for citizens' involvement in environmental degradation.

Nevertheless, the findings were in tandem with the view expressed by Fred Matiangi (2017), the then Cabinet Secretary for Education, when he observed that addressing environmental challenges in Kenya required provision of quality education that creates awareness and inculcates values, knowledge, skills and competencies for sustainable living and participation in society, (MoE, 2017). In essence, Matiangi was lamenting on the relevance of Kenya's education system in the light of the phenomenon of incessant environmental degradation.

#### 4.4 The Effectiveness of the Ecocentric Goal of Education and Policies on Sustainable Environmental Protection in Kenya

As observed by Pradhan et al (2017), the effectiveness of policies is measured by short-term, immediate and tangible benefits rather than long-term adaptation strategies. Also, in the UNEP (2019) Report on “Measuring Progress: Towards Achieving the Environmental Dimension of the SDGs” it was observed that policy-making in the African region is neither well informed by adequate data and the effectiveness of policies is not adequately monitored. The report underscored the need to provide an assessment of the effectiveness of the policy measures, especially those touching on the physical environment. In chapter two, it was noted that both the goal and policies thereof were put in place to create awareness on the benefits of and the need for citizenry commitment and participation in ensuring a clean and healthy environment, through its sustainable protection. It was in this light that this study’s second objective was to assess the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection. The researcher sought respondents’ lived experiences and institutional reports in response to the second research question. These responses, which formed the scorecard for the required assessment, are summarized in table 4.5.

**Table 4.5: Summary of respondents’ scorecard on prevailing environmental degradation in the sampled 8 counties in Kenya (By both Institutional Officers and Citizens)**

s/no	COUNTY	DEGRADATION ACTIVITIES OBSERVED IN THE COUNTY
1.	Nairobi	<ul style="list-style-type: none"> <li>i. Water Pollution: plastics, untreated/effluent industrial and solid wastes emptied into rivers, dams and sewage lines</li> <li>ii. Blocked drainage/sewage lines: the lines are inadequate, poorly constructed with illegally/irresponsibly dumped solid wastes, hence stench &amp; flooding</li> <li>iii. Air Pollution; CFCs from industrial emissions (Oil &amp; Manufacturing industries: Cement manufacturing, cigarette production, incinerators, ferrous and non-ferrous metal recycling facilities; thermal power plants, sugar Factories, galvanized steel production and agricultural products processing e.g. flour, are some of the major emission sources), Non-road worth vehicle petroleum emissions, Undesignated</li> </ul>

		<p>waste dumping sites with stench e.g Dandora, other Estate streets , Public burning of solid waste, Washing of vehicles on rivers and dams,</p> <p>iv. Development/Construction on riparian land and Game reserves; frequent flooding, disruption of animal corridors and migration and disturbance of natural habitats for wildlife</p>
2.	Mombasa	<p>i. Deforestation: Mangrove forest, e.g. along the Tudor Creek, for timber and firewood, charcoal burning</p> <p>ii. Sea/Water Pollution: plastics, untreated/effluent industrial and solid wastes emptied into the sea, Washing of vehicles on the sea shores</p> <p>iii. Air Pollution; CFCs from industries ( Oil &amp; Manufacturing industries: Cement manufacturing, cigarette production, incinerators, ferrous and non-ferrous metal recycling facilities, thermal power plants, galvanized steel production and agricultural products processing e.g. flour, are some of the major emission sources ), Non-road worth vehicle petroleum emissions, Public burning of waste, Undesignated waste dumping sites with stench (Kibarani, mishomoroni, etc)</p> <p>iv. Development/Construction on riparian land; frequent flooding and disruption of natural habitats for wildlife</p>
3.	Machakos	<p>i. Deforestation: for subsistence farming, firewood and timber</p> <p>ii. Charcoal burning</p> <p>iii. Unprecedented sand harvesting</p> <p>iv. Air Pollution; public burning of solid waste, undesignated dumping sites with stench, Non-road worth vehicle petroleum emissions,</p> <p>v. Development/Construction on riparian land; frequent flooding</p> <p>vi. Encroachment; farming and settlement on Rivers Athi and Thwake</p>
4.	Kisumu	<p>i. Deforestation: for subsistence farming, firewood and timber</p> <p>ii. Charcoal burning</p> <p>iii. Water Pollution; plastics, untreated/effluent industrial and solid wastes emptied into L. Victoria and rivers, washing of vehicles along rivers and at the lakeshore</p> <p>v. Air Pollution; Air Pollution; CFCs from industrial emissions (Oil &amp; Manufacturing industries: Cement manufacturing, incinerators, ferrous and non-ferrous metal recycling facilities; thermal power plants, sugar Factories, galvanized steel production and agricultural products processing e.g. flour, are some of the major emission sources), Non-road worth vehicle petroleum emissions, undesignated waste dumping sites with stench, Public burning of solid waste, Washing of vehicles on rivers and dams.</p> <p>iv. Development/Construction on riparian land; frequent flooding</p>
5.	Narok	<p>i. Deforestation; logging, eg Maasai mau,</p> <p>ii. Encroachment; Maasai mau, game reserve and rivers for farming &amp; settlements</p> <p>iii. Air Pollution; public burning of solid waste, undesignated dumping sites with stench, Non-road worth vehicle petroleum emissions</p> <p>iv. Development/Construction on riparian land; frequent flooding, disruption of animal corridors and migration, disturbance of natural habitats for wildlife</p>
6.	Turkana	<p>i. Water Pollution; Solid and liquid wastes, Prevalence of plastics, Petroleum spillages from petrol stations near R. Turkwel and Oil/Gas exploration/Exploitation plants</p> <p>ii. Air Pollution; public burning of solid waste, undesignated dumping sites with stench, Non-road worth vehicle petroleum emissions,</p> <p>iii. Non-rehabilitation of quarrying and mining sites</p>

		<ul style="list-style-type: none"> <li>iv. Deforestation; logging in Loima forest, overgrazing,</li> <li>v. Noise pollution; Mining activities{Oil &amp; Gas Exploration/Exploitation}</li> <li>vi. Charcoal burning</li> </ul>
7.	Muranga	<ul style="list-style-type: none"> <li>i. Deforestation; logging, firewood, charcoal burning</li> <li>ii. Encroachment; development construction and farming on river banks e.g Rivers Mathioya and Murari</li> <li>iii. Air Pollution; public burning of solid waste, undesignated dumping sites with stench, Non-road worth vehicle petroleum emissions,</li> <li>iv. Non-rehabilitation of quarrying and mining sites</li> <li>v. Development/Construction on riparian land; frequent flooding etc</li> </ul>
8.	Embu	<ul style="list-style-type: none"> <li>i. Water Pollution; liquid/solid wastes, Biomedical/Clinical wastes, effluent disposal to rivers and dams</li> <li>ii. Air Pollution; public burning of solid waste, undesignated dumping sites with stench, Non-road worth vehicle petroleum emissions,</li> <li>iii. Deforestation; logging for timber, firewood, farming</li> <li>iv. Charcoal burning</li> <li>v. Sand harvesting especially in Mbeere Sub-county; rivers drying up earlier</li> <li>vi. Encroachment to river banks; farming and settlement</li> <li>vii. Development/Construction on riparian land; frequent flooding</li> </ul>
	<b>General Judgment on the effectiveness</b>	<b>The Implementation of the Ecocentric goal of education and policies on sustainable environment protection in Kenya has not effective</b>

#### 4.4.1 Effectiveness of the Ecocentric Goal of Education

The main goal of an education system is to foster competencies. Competency is the ability to perform the activities within an occupation. It is exhibited by a unique characteristic of effective and creative demonstration and deployment of knowledge, values, attitudes and skills in human situations. It is the capacity to transfer specified knowledge into practice, (Kennedy et al, 2009).

In addition, it is imperative to note that “citizens are not born, they are made”. As such, education develops citizens who “take responsibility for their actions in a series of everyday situations involving various kinds of moral and ethical issues’, (Dahlstedt et al, 2011). Responding to change is the main responsibility of education where the practice of education advances citizenry understanding of multifaceted issues and develop their ability to respond to them effectively, (UNESCO World Conference on Higher

Education, 2009). Hence, in the interest of this study, learning and training should deliver skilled, creative, adaptive citizens who are ethically motivated and globally oriented to respond to emerging environmental issues, (Nikolic & Gledic, 2013).

Thus, the practice of education, as guided by ecocentric goal, was to make Kenyan citizens responsive to the environment. Consequently, they would execute knowledge, values, attitudes and skills for its sustainable protection. Moreover, with increased access to education in Kenya (Nicolei, 2014), Kenyan citizens were to demonstrate competencies in environmental ethics that effectively govern human-nature interrelationship. The citizens' ecological knowledge, values, attitudes and skills were to elicit an ability to respond to the phenomenon of incessant environmental degradation and the call for sustainable environmental protection. Therefore, the effectiveness of the ecocentric goal of education in Kenya was assessed by observing and seeking responses on the institutional officers' and citizens' ability to demonstrate and deploy their knowledge, values, attitudes and skills on sustainable environmental protection.

The study hereby observed citizenry practices as demonstrations of acquired competencies to enable a clean and healthy environment. Responses were obtained from institutional officers and citizens to the question, "how effective has the ecocentric goal of education on sustainable environmental protection been in Kenya?" The conclusion to this question would only be made with an outline of the institutional reports and respondents' voiced experiences on the state of the environment as it was physically observed. The outline and subsequent discussions made the indication of whether, or not, the ecocentric goal of education objectives for a clean, healthy and sustainably protected

environment had been realized. The respondents' voiced experiences gave an indication of how Kenyan citizens are involved in environmental degradation activities, notwithstanding the existence of an ecocentric goal of education on sustainable environmental protection, as also indicated in figure 1.1. The carbon emissions witnessed in figure 1.1 are destructive to both human and animal life.

Kenya has 78% adult literacy, over 90% of citizens have attained primary education and 76.7% of citizenry respondents attained secondary education. Although the minimum qualification for licensing as a driver is 18 years of age, (NTSA, 2018), based on these percentages, the driver of the truck pictured in Figure 1.2a had an opportunity, both in formal schooling and driving training, to appreciate the necessity to protect the environment from such emissions. The institutional officers, with 63% of them having engaged 5 years of responsibility to enforce compliance, did not seem to have lived their mandate. The citizens and the officers, out of this instance and many others, had not deployed their knowledge (if any), under the dictates of environmental ethics as envisioned in the ecocentric goal of education, to save the environment of such negative impact of human activity. Keandu, the NEMA County Director of Environment in Machakos, voiced his view on the effectiveness of the ecocentric goal of education as follows:-

How would you imagine of an effective goal of education on the environment when you witness Kenyans busy destroying their environment with such impunity? They harvest sand from rivers so irresponsibly and recklessly cut down trees even from gazetted forests in this country. We are doing our best but as a country, there is so much we need to do, (Respondent B<sub>2.2</sub>).

The citizenry involvement in environmentally destructive activities as observed by Keandu: uncoordinated sand harvesting and deforestation, indicated lack of prerequisite environmental ethics to enable citizens' commitment and participation in sustainable

environmental protection. These activities compromised the quality of environment for both the current and future generations, thus negating the essence of intergenerational justice. For reasons discussed in Chapter five, Keandu lamented NEMA's failure to stamp out such environmental vices. On the same analysis of the state of the environment, Mwenge, a Deputy Chief Conservator at KFS, put it so candidly that:

If Kenyans knew the importance of the environment, they would not destroy it. Look at the solid waste heaps in our towns, encroachment in riparian and gazetted lands and forests, and our all-time problem of poaching in our animal reserves. Mark you, this is done by people who went to school! What we learn in school does not seem to help us. We even have our officers who are involved in environmental malpractices. We have challenges in managing our environment, (Respondent F<sub>1.2</sub>).

Just like Keandu, Mwenge outlined citizenry involvement in destroying the environment (waste mismanagement, encroachment and poaching), which is the foundation upon which sustainable development is anchored. To Mwenge, schooling (formally or non-formally) should have transformed Kenyan people to citizens who elicit environmental characteristics: attitudes, values and skills to relate responsibly with the physical environment. Schools (the theory and practice of education) should socialise learners and ultimately the citizens, by inculcating in them environmental ethics.

This reflected on Aristotle's promotion of his Nicomachean ethics. Aristotle saw no sense in people studying elements that do not affect their actions, (White, 2021). Therefore, educational practices (implementation of the ecocentric goal of education and policies) on environmental issues should cause an awareness that leads to sustainable environmental protection actions.

Education moulds learners to not only enable them become responsible citizens but also inspire them to work on issues that directly relate to public betterment (an aspect of

intergenerational justice), (The Millennium Schools, 2020). The observation of citizens' involvement in environmentally destructive activities (as voiced by the respondents) indicated that the objective of the ecocentric goal of education has not been achieved. Figure 2.8 alluded to this realization. It was an indication of how solid waste is dumped in undesignated sites in Kenya. Such sites were breeding places for pathogenic agents like mosquitoes and the stench emanating from them pollute the air for the surrounding human settlements.

Mwaka et al (2013) while investigating the extent to which education has promoted national unity, underscored the role that education plays in providing an all-round development of its recipients. Such development enables them overcome life challenges as they play effective roles in their immediate society. To Mwaka et al (2013), the effectiveness of a national goal of education is measured by citizenry exhibition of the goal's envisioned characteristics. Kenyan citizens had not demonstrated characteristic competences that enable their participation towards a clean and healthy environment, as the figures and respondents' lived experiences above have indicated. This showed that the implementation of the ecocentric goal of education in Kenya has not been effective.

#### **4.4.2 Effectiveness of the ESD and Natural Environment Policies**

To assess the effectiveness of the ESD and Natural Environment policies on sustainable environmental protection in Kenya, responses were obtained from institutional officers and citizens to the question, "how effective have the policies on sustainable environmental protection been in Kenya?" Institutional reports and respondents' voiced experiences informed the conclusion to the question. A summary of these responses is

also given in table 4.5. To illustrate the respondents' reaction to the second research question, voices expressing lived experiences were identified and presented thematically.

Mosoti, a Director of Nairobi County Government narrated:

You obviously know about the rampant problem of solid waste management in Nairobi. People throw waste at undesignated places; in the streets and estates. The untreated effluent is emptied into water bodies, that is, rivers and dams. Nairobi River and a dam in Westlands are common victim sites. We have tried to enforce guidelines but it's always met with resistance from all quarters. Am sure you remember the big conservation fight over the Standard Gauge Railway through the park! With such scenaria, it would much more efforts to realize policy objectives on protecting our environment, (Respondent I<sub>3,2</sub>).

Mosoti's narrative was a concern for degraded environment in Nairobi City County in which solid waste mismanagement, emptying of effluent into water bodies and encroachment of conserved lands is common phenomena. Such activities are a threat to human health, fauna and flora. NEMA is the lead governmental agency in environmental management. It is vested with the responsibility to ensure compliance to land-use guidelines that are geared towards a clean, healthy and sustainably protected environment. An example of such responsibility is to designate solid waste disposal sites and ensure citizenry compliance to the same. The cases cited by Mosoti were indicators that NEMA had not lived to its mandate and the citizens involved in such activities lacked sense of environmental ethics. Citizens also posed resistance to enforcement on land-use guidelines in Kenya. That was unlike the situation as cited in Switzerland and Rwanda in section 4.5, as countries with great public support and participation in sustainable environmental protection initiatives. But, with development of environmental citizenship among Kenyans, citizens would exhibit values, attitudes, values and skills to make them environmentally responsible. As a result, they would promote, commit and participate in sustainable environmental protection.

Virtually, all the county headquarter towns that were sampled had serious problem of unlawful dumping sites of solid wastes (where solid waste is burned in public) and that of rampant air and water pollution. Such are big health hazards, particularly of respiratory and other infectious diseases in human beings as noted earlier in the background information by Lu, (2011). Figures 4.1, 4.2, and 4.3 showed human involvement in activities that degrade the environment, in terms of water pollution and in disregard to policy guidelines on land use and protection. The figures attested to Mosoti's and others' responses:-

**Figure 4.2: Untreated industrial waste being emptied into a section of Nairobi River along Industrial area, in Nairobi County.**



**Source: Softkenya, 20/07/2018**

Figure 4.2 showed how some industries discharged untreated effluent into dams and rivers. Untreated industrial effluents degrade surface water and soil along with negative impact on crop, insect pests and animals. The health and proper growth of human, domestic animals and aquatic animals are also affected by awful effects of untreated industrial effluents, (Hossain, 2010). Discharge of untreated effluents into dams and rivers contravenes NEMA's Water Regulations 2006, Legal Notice No. 121. These regulations prohibit discharge of effluent into the environment contrary to established standards. Besides, EMCA (1999) postulates that "Every person shall refrain from any

actions, which directly or indirectly cause water pollution”. NEMA and County Government environment department officers are expected to ensure compliance to these regulations. Observations of such occurrences are indicators of lack environmental ethics and competencies among Kenyan citizens to ensure a clean and healthy environment. Further indicators of citizenry involvement in environmentally destructive activities were observed as below.

**Figure 4.3: A river polluted by Industrial and human wastes with construction right into it, in Embu town, oblivious of human health hazards**



**Source: NECC, 2018; 25/08/2017**

Figure 4.3 indicated human construction right into a river. Such provides opportunities for human waste to be emptied into the river and causes untold contamination as water pollution. That endangers human life especially for human populations downstream and imbalances the river ecosystem. It was an indication of lack of citizenry environmental ethics and inadequate moral and institutional obligation (by NEMA and the other state agents) to ensure compliance to guidelines on land use.

**Figure 4.4: A high-rise building being constructed basically inside River Ngong, 23/06/2017**



Two buildings are under construction on the banks of River Ngong near T-Mall on Mbagati Road (Photo: Courtesy)

**Source: Necc, 2018**

The figure above showed a huge construction of a shopping mall with its structures right across the river. Constructions that are within riparian zone are a risk to human health and safety and also imbalances the river ecosystem. The approvals given by state agencies for such constructions to be undertaken were an indication of lack of environmental ethics and that the institutions have failed their mandate.

**Figure 4.5: A super store constructed on a wetland in Westlands, Nairobi County, where flooding water is seen flowing through its shelves on the 23/11/2017**



Water flowing through the shelves at the Nakumatt Ukay branch in Westlands following flooding incident (Photo: Courtesy)

**Source: NECC, 2018.**

The superstore may have been constructed along a flood plain. In such a case, a construction of that magnitude should not have been approved by state and county agencies due to unsuitability of the location. That indicated poor regulatory mechanism and compliance. The flooding and its effect, as witnessed in the picture, may also have

been due to clogged drainage system, (Kiptum, 2019). When solid waste is irregularly littered in the streets, it is washed into the drainage tunnels which in turn clog and thus cause the floods. It may lead to spread of waterborne diseases like cholera.

The pictures above depicted how rampant water pollution was being accreted. Water pollution in Kenya occurs when pollutants are directly or indirectly released into water bodies without prior treatment to remove harmful compounds. Although many water pollution laws and policy guidelines were in place, the problem continued unabated. Most of Nairobi City Rivers were laden with garbage, mostly plastics. Sewage sludge was based on rivers, giving the illusion that the rivers were non-existent. The pollution of these rivers was due to people who threw garbage into the rivers and along their banks.

In addition to this, there were also several open sewer lines that directed their effluents into the rivers. These sewer pipes carried industrial and domestic waste. As a result, contaminants in urban rivers included plastics, faeces, detergents, disinfectants, chemical wastes, insecticides and petroleum hydrocarbons, among others. Some of these contaminants also seeped into the soil and contaminated aquifers and were a high risk to both human and aquatic life. All these water pollution practices were in contravention of the Integrated National Landuse Guidelines sub-section 3.1.1 on the Protection of Ground Water, Rivers, Lakes and Wetlands, (NEMA 2011, page 6-7). The industrialists and the general population should embrace environmental citizenry practices and as such acting ethically and responsibly on environment. Hence, they would ensure clean water in rivers and other water bodies. When untreated effluence was emptied into water bodies and rivers, as indicated in figures 4.2 and 4.3, it was an indication that oversight

governmental agencies and institutions had not performed their duties effectively. Institutional officers were to ensure regulatory adherence and proper solid waste disposal and management mechanism while the ordinary citizens were to exhibit environmental ethics to avoid such scenarios. It is the responsibility of county and NEMA's departments of inspection and compliance to ensure deterrence from such pollution practices.

The Integrated National Landuse Guidelines sub-section 3.1.1 gives guidelines for rivers and lakes where there is provision for buffer zones. These zones are between 2m - 30m wide measured from the highest water mark for rivers and streams depending on the width, water volume. It depends on whether the river is permanent or seasonal and the use of that water. This 2m-30m area forms the riparian land or zones for rivers and lakes. Where the highest water mark cannot be determined one should consider the width of the river on either side to arrive at an appropriate buffer. Again, according to these guidelines, the management of the riparian areas should be considered. Once these riparian zones are identified, the activities that can be allowed in such areas like bee keeping and indigenous vegetation should be specified. This was not the case in the figure 4.4. NEMA and the other responsible state agencies should ensure compliance. Development of environmental citizenship among the general Kenyan populace would ensure commitment to and participation in sustainable environmental protection. By such development the citizens would be keen to uphold the said guidelines. Physical development construction on riparian and gazetted conservation lands is also a common occurrence in the sampled counties. Adrian, a NEMA Environment Officer in Kisumu put it as follows:-

My friend, when a person brings you construction approvals from the county government for development which you know is close to a river or lake, usually I have very minimal option. When we raise issues with them on the impact on the environment and they put it like 'this is already approved'. We even have people who tell you of how they bought the approvals {implying bribery}. (Respondent C<sub>8.2</sub>).

Adrian voiced a case where NEMA officers had difficulty in disallowing constructions were approved by other state agencies. Adrian's experience indicated cases where institutional officers could not ensure compliance due to the said official patronage. NEMA officers are expected to confirm that physical development plans conform to laid guidelines like "not on riparian lands or wetlands". The situation voiced by Adrian and indicated in figures 4.2-4.4 showed that development constructions would go on without necessary and environmentally sustainable approvals. This indicated lack of environmental ethics among the citizens and institutional or government officers.

Besides water pollution, there was also rampant air pollution. Vidal (2016) observed that air pollution in the Kenyan capital was beyond imagination. Observed irresponsible human activities that significantly caused air pollution included but not limited to: waste mismanagement {uncollected and illegally dumped solid waste}; public burning of solid waste {releases CFCs into the atmosphere}; petroleum emissions into the atmosphere; deforestation {trees absorb elements of CFCs from the atmosphere}, among others as indicated in figures 1.1, 2.6- 2.9, 4.2, and here below.

**Figure 4.6: Public burning of solid waste next to residential area, with hazardous effects on human health in Mombasa**



Source: NECC, 25/04/2018

The above observed case was public burning of solid waste with emission of carbon next to a residential area in Kongowea Mombasa. The citizens were oblivious of the effect of such emissions on their health. This was also a contravention of the NEMA national guidelines on disposal of waste.

**Figure 4.7: Public burning of solid waste next to residential area in Kibera, Nairobi County, with hazardous effects on human health**



Source: NECC, 12/03/2018

Figure 4.7 also indicated public burning of waste in undesignated location. The emissions were obviously affecting the health of the citizens.

The above two figures were cases of unregulated public burning of solid waste in undesignated places. Open burning of waste releases a variety of toxic pollutants into the air and also can exacerbate soil pollution, water pollution and food contamination. Open

waste burning releases significant amounts of greenhouse gases into the atmosphere. Such compounds include carbon dioxide, methane and particulate matter, which are typically associated with air pollution and can lead to severe cases of respiratory disease. Open burning of waste is especially associated with the emission of persistent organic and inorganic pollutants. These pollutants included polycyclic aromatic hydrocarbons, dioxins and furans, all of which are carcinogenic and have been linked to a variety of other diseases. The impacts of these pollutants are especially harmful to unborn fetuses, infants and children who come into contact with the pollutants either through their mothers or through exposure to the pollutants themselves as observed in figure 4.4.2f. Consequently, several of the pollutants emitted by open waste burning can cause severe developmental damage in the young, (Cogut, 2016).

Due to environmentally unsustainable human actions and failure by institutional officers to enforce land use guidelines, industrial and human wastes found their way into the atmosphere. School practices and public awareness creation on environmental issues would enable citizenry consciousness to the environmental health hazards as stated. Citizens would be aware of the impact of their actions on the environment and the need for their commitment and participation to ensure sustainable environmental protection. Such would enable a clean and healthy environment for their present and future generations' wellbeing.

These voiced and observed scenaria were in contravention of the guidelines provided on Agricultural, Industrial and Domestic Waste Management {section 3.12.2}. They include that: NEMA and state agencies like the county environment departments should promote and enforce the provision for the design and construction of adequate waste water

handling facility for a proposed development; manufacturers and/or appointed agents should provide waste management solutions for their products; waste collection points, transfer site and disposal site (landfill or incinerator) should be well designated and properly functioning; waste disposal sites should be secured and manned to discourage scavenging and exposure to hazardous chemicals; provide adequate buffer zone between waste disposal sites and the surrounding communities, {Section 3.12.2(h)}.

On deforestation and encroachment on wetlands, there was a lot of encroachment into gazetted forests and wetlands for human development and settlement, farming and logging as observed in Nairobi, Machakos, Narok, and other counties as represented in figures 2.8, 4.8, 4.9 and 4.10 as well as respondents' experiences, given below.

**Figure 4.8: A gazetted forest degraded, highly interfering with the carbon cycle of the surrounding ecosystem in Machakos County**



**Source: NECC, 2018; 12/04/2017**

The figure above showed unregulated cutting of trees from a gazetted forest in Machakos County. The forest destruction, as witnessed, highly interferes with the surrounding ecosystem, thus negatively human and animal life.

**Figure 4.9: Invasion and destruction of Mau Forest, a major water tower, for farming, logging and settlement**



Source: Necc, 2018; 02/09/2017

The above picture showed how citizens have interfered with Mau catchment area by cutting down trees. Such activity affects the water cycle of the surrounding ecosystem hence adversely affecting animal and human lives.

Large scale cutting of trees, as shown in the figures 4.8 and 4.9 has led to deforestation of gazetted forests, even within gazetted areas like the Mau Conservancy in Narok and Iveti Forest in Machakos, among other locations in Kenya. This causes transformation of an area from forest to a terrain with little vegetation. Plants create oxygen and absorb greenhouse gases. The destruction of trees, therefore, encourages global warming. These changing temperatures alter the organisms that can survive in an ecosystem. Cutting down of trees usually results in the loss of habitat for animal species, which harms ecosystems. As noted by National Geographic, "70 percent of Earth's land animals and plants live in forests, and many cannot survive the deforestation that destroys their homes." Also, forests promote a cycle of evaporation and rainfall received within the affected regions. Further, the loss rain forests result in warmer and drier climates near the tropics, according to NASA, which could destroy ecosystems that many animal and plants depend on, (Hamel, 2017). It would require citizenry acquisition and execution of

environmental citizenship to deter such citizenry involvement as indicated in the figures above. The photo below showed developments done on a wetland in Narok county.

**Figure 4.10: A construction done on a reclaimed wetland in Narok County, which tampered with the original ecosystem as observed, 17/07/2017**



Part of the area that used to be a wetland has been reclaimed and filled with sand for developments next to river Ewaso-Ngiro in Narok County

**Source: NECC, 2018**

Figure 4.10 was a road constructed on a wetland in Narok County. This was done in contravention to the Integrated National Land-use Guidelines sub-section 3.1.1. Both the contractor and the state agencies who oversaw the development abdicated their responsibility to regard the guidelines. It was an indication of lack of environmental ethics on their part. It is only a transmutation of Kenyan citizenry into environmental citizens that would abate such destructive involvement and thus enable adherence to guidelines.

On wildlife conservation and protection, KWS is a state corporation established by an act of parliament (Cap 376) with a mandate to conserve and manage wildlife in Kenya. It should do this by enforcing laws and regulations that are in respect to their mandate. Its goal is to work with other bodies to conserve, protect and sustainably manage wildlife resources. Its operations are anchored on the premise that “if people benefit from wildlife and other natural resources, then they will take care of these resources”. Taking care of an

object is both a relational and moral perspective and undertaking. Moral and relational capacities are elements that enhance environmental citizenship.

Walukoa, a deputy director at KWS lamented that despite efforts to educate the citizens on the benefits of wildlife and human-wildlife conflict resolution and management, some Kenyans still go ahead to kill our animals at the slightest opportunity with impunity. He said:

We hold awareness campaigns among communities next to our parks and game reserves, though not logistically so often, but you always have cases of poaching and conflicts among them. We have also witnessed human development encroaching into our parks also, (Respondent D<sub>1,2</sub>).

Walukoa voiced instances of attempts of state institutions to create citizenry awareness and consciousness on the need to responsibly relate to wildlife. Regrettably even with such attempts, Kenyan citizens still involve in poaching themselves and encroaching the parks. To achieve its mandate, KWS needed to conduct effective stakeholder engagements. Through these engagements, the citizens would be aware of their wildlife benefits. It is only with such awareness that the scenario presented by Walukoa would likely be avoided. When asked about their views on the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya, some sampled local citizens gave the following responses:- Kandanda, a charcoal dealer around Loima Hill (a gazetted forest) in Turkana said:-

If there are any efforts, like you are saying, a goal or policy on environmental protection that the government has put in place, then they are not bearing any good fruits, (Respondent L<sub>23,2</sub>).

Kandanda indicated that educational and policy measures that the Government had ever put in place to curb environmental degradation had not been successful.

Mwaruko of Murang'a, found Quarrying, put it very boldly:-

Environmental protection efforts in Kenya are not successful. For example, look at how forests have been cleared. We have been quarrying all these years, and these quarries are a big risk to our lives and others, (Respondent L<sub>25,2</sub>).

Mwaruko's experience was that citizenry involvement in environmentally destructive and irresponsible activities, like deforestation and undesignated quarrying, indicated ineffective implementation of respective measures.

and Nganyako, a driver of a truck in Kisumu, was found by the researcher emitting thick cloud of petroleum exhaust fumes, and unashamedly voiced that:

We do not see anyone from NEMA or even the county government educating or even questioning us on unroad worthy vehicle. It is only the policemen, who bother us once in a while but we bribe them, (Respondent L<sub>20,2</sub>).

Nganyako expressed a scenario where, as citizens, they did not even interact with institutional officers who were meant to enforce sustainable environmental protection measures. This scenario showed quite a number of possibilities: the institutional personnel numbers are not adequate for them to reach out to all parts of their areas of operations, the officers' motivation to work was low or they are not facilitated to reach out.

These respondents' lived experiences showed not only lack of awareness on sustainable environmental protection policy measures by state agencies. They were also witnesses to shameless plunder of environmental resources. Kandanda was even very categorical when he mentioned that environmental protection measures are not successful at all. Nganyako was of the view that, cases of environmental degradation activities in Kenya, like deforestation and uncontrolled quarrying, indicated lack of implementation of the ecocentric goal of education and policies on the environment. He even voiced that such happens due to unethical practices like bribery and how such practices dissuade

institutional officers from enforcing compliance to land-use guidelines. It is only citizenry development of environmental citizenship that would enable both the officers and general populace to uphold environmental ethics, as envisioned in both ESD and Natural Environment Policies.

#### **4.4.3 Elucidation on the Effectiveness of the Ecocentric Goal of Education and Policies on Sustainable Environmental Protection**

As noted by Mukherjee and Bali (2019), the fundamental goal of any public policy is to address and solve societal problems. The solution comes about by ensuring the realization of policy outcomes based on the respective policy objectives. As such, the ultimate purpose of any national goal and policy design and implementation is to achieve the stated objectives. Consequently, an educational goal and public policy effectiveness is measured by lived experiences as indicator of achievement of the stated objectives, as observed by McGrath (2017).

According to Pradhan et al (2017), if an educational goal and public policy objectives are not achieved, that is, their tangible benefits are not observed and enjoyed by the citizens, then the implementation of the goal and policy is deemed ineffective. Pradhan et al (2017) observation concurs with Homes et al (2017) idea that, to measure the effectiveness of sustainability policies, one tracks or observes the changes in the state of the environment since their implementation. Therefore, this study took note of institutional reports and respondents' voices of lived experiences on the state of the environment to assess the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. In other words, if the implementation

of the ecocentric goal of education and policies on sustainable environmental protection in Kenya would have been effective, then the citizens would have acknowledged it in their testimonies. Further, the effects of human actions on the environment and the need for human intervention to tame environmental degradation and its adverse impact on human health would be manifest.

Such acknowledgement would be coupled with commitments seen in action-orientation to ensure sustainable environmental protection. This would enable partnerships with and participation of general community members to sustainably protect the environment for the benefit of current and future generations. In essence, citizens would develop values, attitudes, skills and actions that enable their commitment and participation on sustainable environmental protection, as envisioned within environmental citizenship. This sustainable human-nature relationship is ideally based on the understanding that human societies and their environments (in all their variety) are always dynamic.

To cope with these changes, human beings need to curve desired ways to manage the changes, both at the present and in the future. Education is the oldest enterprise that human beings have engaged to enable development of knowledge, values, attitudes and skills to cope with the phenomenal changes of the society and environments. As such, the practice of education requires proper and well defined aims, objectives, goals and motives, (Maheshwari, 2013). The ecocentric goal of education and corresponding policies are intended to ensure a clean, healthy and sustainably protected environment. Such requires inculcation of environmental ethics as postulated in environmental citizenship.

Awareness of and development of environmental ethics among Kenyan citizens are to be ensured through formal and non-formal educational practices. Formal school practices, institutional stakeholder engagements and public awareness and involvement campaigns are to enable citizenry commitment to and participation in effective sustainable environmental protection. This observation is reminiscent of Emmanuel Kant's assertion that "man is what education makes him". Therefore, Kenyan citizens are involved in sustainable environmental protection to the extent to which attained education and policy implementation strategies and practices have enabled them. The highlighted witness of citizenry involvement in unprecedented environmentally destructive activities and the voiced respondent themes are indicators of ineffectiveness of the implementation of the ecocentric goal of education and its concomitant policies.

On deforestation {indicated in figures 4.8, 4.9, Respondent H<sub>2.2</sub>, and by Wasonga (2017)}, Kenya had witnessed unprecedented scale of destruction of her forests. This occurred despite the existence of Kenya's forest laws as among the most stringent in the world. Without understanding the effects of unsustainable destruction of forests, Kenyan citizens continued to experience untold environmental hazards. The KFS taskforce REPORT of 2018 indicated that forest officers also abated destruction of forests. In that report, Corruption had been cited as a rotten fibre that hampers conservation progress within KFS. It was even mentioned as an institutionalized norm, (KFS Report 2018, p.6). It is lack of environmental ethics among institutional officers and ordinary citizens that make them involved in unsustainable destruction of forests. It requires development and acquisition of environmental citizenship to enable sustainable protection of forests in Kenya.

As observed by Goldie (2009), a moral will should be exhibited in human character traits and or actions. A character trait is a disposition to take certain types of considerations as reasons (or as motivational) for actions or emotion under certain types of circumstances, (LaFollette, 2013). Education for sustainable development should enable development of environmental virtues and character traits that assure commitment on the part of citizens to act responsibly and in sustainable move towards sustainable environmental protection. Such should be is focus in environmental citizenship through inculcating environmental ethics. With the corruption in form of bribery cited in the KFS Report 2017/2018 and Respondent C<sub>5.2</sub> and H<sub>6.2</sub> among others, the implementation of the ecocentric goal of education and policies had not been effective in inculcating environmental ethics.

There were constructions and human developments as encroachments on lands and natural ecosystems (for instance, figures 2.2, 4.4, 4.5, 4.10 and respondent C<sub>5.2</sub>) that were meant to be protected by law and citizenry practices. Such encroachments had their approvals from NEMA, national and county governments or they took place at their watch. NEMA and its corresponding/coordinating departments are state agencies vested with the responsibility to ensure sustainable environmental protection, in light of the ESD and natural environment policies! With adequate environmental laws and policy guidelines on sustainable environmental protection, it only required institutional and citizenry commitment to and result-oriented participation to ensure the same. From the institutional reports and respondents' experiences as voiced above, this commitment and participation (an exhibition of environmental citizenship) is not yet realized in Kenya, indicating inaptitude and government officials that remiss on their duties.

Both air and water pollution activities and their consequences shown in figures 1.1, 4.1, 4.2, 4.3, 4.6, 4.7 and by respondent B<sub>3,2</sub>, were clear indicators of ineffective implementation of the ecocentric goal of education and policies on sustainable environmental protection. The observed and voiced citizenry involvement in incessant environmental destruction and its effects resonated well with the ‘incision’ by the late Professor Wangari Mathai (1940-2011), an Environmentalist and a Nobel Prize Winner, that “nature is very unforgiving, you destroy nature, nature will destroy you”.

The overall aim of Education for Sustainable Development (ESD) policy is to empower citizens to be actors for positive environmental and social change once given the relevant skills, knowledge and values that would help them find new solutions to their social, economic and environmental issues. It also aims at enhancing the knowledge, skills, perspectives and values to empower people of all ages to assume responsibility for creating and enjoying a sustainable future. The main aim of the Natural Environment policy is to ensure sustainable management of the environment and natural resources. All these are aimed at ensuring a clean and healthy environment as the anchorage for intergenerational justice. A contravention of the environment management and land use guidelines postulated by NEMA and other related state agencies, to operationalize the policies, implied that the implementation of the policies has been ineffective. It therefore, requires an ethical resolve to transmute both institutional officers and the general citizens into environmental citizens. This resolve will demand deliberate initiation of citizens into the acquisition and execution of environmental ethics.

Such a demand invokes premises of the Socratic philosophy on morality which postulates that moral knowledge would lead to moral conduct. Environmental ethics constitutes citizenry moral conduct that governs their relationship with the environment. Interestingly, one would wonder the degree to which information informs human conduct! As noted in section 4.3.3, this led to the notion of whether “knowing good leads to doing”. Further, “under what special circumstances can one assume that knowing good leads to doing?” (Gaylin, 1994). Such begged an expectation that, against any other underlying reasons for environmental degradation, citizens would require a level of information or awareness and consciousness that enables their knowledgeable participation in sustainable environmental protection. By such, they would be acting as per the good that they are aware of: in as far as their actions positively and sustainably impact the environment.

Also, education is a process that can be controlled in order to develop viable human traits that enable human participation towards sustainable environmental protection. Education expectedly imparts knowledge: values, attitudes, beliefs and skills, that enables human beings to transform and improve the human and natural condition {the environment}, (Gaylin, 1994).

The respondents’ and observed judgment on the effectiveness of the ecocentric goal of education and policies came at the backdrop of other underlying factors that are not educational in nature per se. The researcher appreciated the role that formal, informal and non-formal educational practices play in shaping the character, values and skills among the citizens that them to acknowledge the intrinsic value of other physical environmental constituents.

#### **4.5 Observed Practices on Sustainable Environmental Protection**

As presented in the background of this study, data that highlighted the state of environmental sustainability in the world is displayed from records of EPI. EPI uses 32 performance indicators with 11 categories of issues to rank 180 countries against their environmental health and ecosystem vitality. The index shows how countries' performance is rated based on how close they are to internationally established environmental policy targets. As a scorecard, the index shows the leaders and laggards in environmental sustainability thus providing practical indicators for countries as they move towards sustainable future. Kenya in this rating was ranked positions 130 and 132 in 2018 and 2019 respectively, (Wendling, et al, 2020). This ranking therefore, made it necessary for one to observe the comparable global practices on sustainable environmental protection.

In the above mentioned ranking, Switzerland was in position 1 and 3 in EPI ranking of 2018 and 2019 respectively. This was due to her implementation of environmental protection policy measures with good measure of success. What is worthy noticing is that Switzerland's prescriptive environmental policy's enactment is usually preceded by lengthy and intensive consultations between the different authorities and economic actors. Such arrangement facilitated ease of implementation and observance with a highly developed public involvement. Her citizens intervened in the preparation of legislation, propose subjects for referendums and vote directly on major policy issues. As far back as 1998, public expenditure on environmental protection in Switzerland was equivalent to about 1.7 per cent of GDP which was high compared with other OECD countries at that time. This percentage had more or less remained over the years. The Confederation,

cantons and municipalities in Switzerland finance roughly one-third of this expenditure as businesses and households bore roughly two-thirds of the expenditure, (Schuknecht & Tanzi, 2005; Moreno-Enguix & Bayona, 2017; Stiftung, 2018). Regulatory approach, substantial government funding and an actively involved public environmental awareness were fundamental to these policy and public interventions. Consequently, remarkable results to pollution abatement were achieved. From 1990s, environmental policies had focused on the prevention of damage to the environment. The Federal Council considered the requirements of sustainable development in all sectoral policies, notably those affecting energy, transport and agriculture, (Moreno-Enguix & Bayona, 2017).

Switzerland took measures very early on to prevent and control water pollution, notably from industrial and urban sources. There had been considerable investment in waste water infrastructure (over SF 40 billion in the past 30 years {by 1998}), partly financed by federal and cantonal subsidies. As a result, many watercourses were of good physical-chemical quality (content of organic contaminants, heavy metals and micro-pollutants). With the ban on phosphates in detergents, and phosphate removal at many treatment plants, phosphate loads from these sources decreased very significantly, (Schuknecht & Tanzi, 2005).

The level of selective collection of municipal waste for purposes of recovery and recycling was one of the highest among OECD countries; the recycling was done essentially by the private sector and financed chiefly by an advance disposal charge. Incineration capacities for special waste were sufficient to meet the country's needs; exports of special waste for incineration or open landfilling are prohibited. Over the years

Switzerland developed the legislative and regulatory framework, institutions and infrastructure needed to ensure efficient waste management. Expenditure in this area amounted to 0.6 per cent of GDP. Collection of unsorted municipal waste was available to almost the entire population. Over 80% of this waste was incinerated in appropriate facilities, (Moreno-Enguix & Bayona, 2017; Metz & Glaus, 2019).

Swiss' performance as regarded air quality was among the best, (Al Asbahi et al, 2019). Air pollution emission rated among the lowest in the OECD area, with very high levels of waste water infrastructure and waste management facilities. This success was achieved by means of an ambitious regulatory approach combined with rigorous enforcement, strong support from the public and a considerable financial effort. Switzerland had met all its international commitments for atmospheric emissions reduction. Since the early 1980s she achieved remarkable declines in emissions of air pollutants and greatly improved her air quality. These results were largely attributed to consistent and ambitious federal strategy for air pollution abatement and to efficient implementation and enforcement of regulatory measures by the cantons, (Ingold & Balsiger, 2015).

Perhaps, public governance and leadership in Switzerland appeared to have recognized the critical role of citizens' commitment and participation in sustainable environmental protection. This was well noticed in her embraced extensive participation by citizens' groups and public bodies in the design of environmental protection strategies. This secured their widespread citizenry acceptance and improved awareness of the ecological problems involved. In addition, Switzerland instituted green tax reform regimes that reduced labour taxation and concerns about fiscal neutrality. The taxes that existed before

generated distortions and negative environmental effects. These green tax reforms promote environmental taxation and eco-taxes in agriculture, natural resources, transport and energy. For instance, there were public transport measures that restricted use of private transport, notably in cities, and transport of goods by road. Consequently, Switzerland has one of the densest rail networks with urban and intercity modal distributions that give pride of place to public transport, (Metz & Glaus, 2019).

Another country that fared better in the EPI ranking from the tropical African countries was Rwanda. In the African region, Rwanda has had a robustly inclusive national target called *vision 2020*, which has succeeded in bringing all Rwandese into the country's development journey, integrating green growth and climate resilience strategies. For a period that spans over two decades, Rwanda took a proactive approach and put environment and climate change at the heart of all the country's policies, programmes and plans. Rwandese commitment to nationwide landscape restoration is such that every year, Rwandese plant millions of trees to protect the country's forests, rivers and wetlands. All these initiatives intended to make Rwanda a developed, climate-resilient and low-carbon economy by 2050. Other instituted initiatives included: ban on plastic bags; a 30% target on forest cover by 2020; restoration and protection of ecosystems like wetlands, natural forests and lakes; establishment of a green fund; and embracing green politics, (Tsinda & Gakuba, 2010; Kasztelan, 2017).

In 2008, Rwanda banned the use of non-biodegradable plastic bags and packaging materials which aimed at maintaining a clean and healthy environment. Consequently, Rwandese use only bags made from paper, cloth, banana leaves and papyrus, among

other biodegradable materials. As a result, Rwanda was reputed as one of the cleanest countries in Africa in 2008, (Umulisa, 2012). At that time also, her capital city, Kigali, was declared one of the cleanest cities in Africa by UN Habitat. In addition, the plastic ban created opportunities for entrepreneurs who invested in alternative packaging materials {cloths, papers, banana leaves and papyrus}, (Price, 2019; Majaro, 2020). To achieve 30% of total land area by 2020, Rwanda embarked on massive reforestation and tree-planting drive, with measures such as agro-forestry and training schemes in forest management being implemented. These efforts, along with the plastic-bag ban, earned the nation a Future Policy Award from World Future in 2011, (Clean & Rwanda, 2009; Danielsson, 2017; Bayu, 2020).

Rwanda's commitment to conserve the environment exhibited through the protection and restoration of degraded ecosystems such as wetlands, lakes and natural forests. For instance, forests such as Nyungwe, Gishwati and Mukura have been restored and upgraded into national parks. The promotion of these parks, home to a vast variety of flora and fauna, has contributed to the growth of the tourism sector that is currently the principal generator of foreign currency {with US\$ 304.9 million and US\$ 318 million revenue in 2014 and 2015 respectively}. Also, Rugezi wetland (which had dried up because of human activities and climate change) was rehabilitated in 2005. Its restoration led to the recovery of water levels, increased hydropower production in Burera and Ruhondo lakes and a boost for the country's fishing sector. For this, Rwanda received a Green Globe Award in 2010, (Cantone, 2011; Gu & Xue, 218).

Being vulnerable nations to climate change, just as many countries are, Rwanda had been acutely aware of the challenges that lie ahead. To achieve her vision for low-carbon and climate-resilient economy by 2050, Rwanda has established the Green Fund, a groundbreaking investment fund, the largest of its kind in Africa. The fund supports the best public and private projects that have the potential for transformative change and that support Rwanda's commitment to building a green economy. The fund has mobilized around \$100 million to date and is a leading example of the impact that well-managed climate financing can have, ((Kasztelan, 2017).

For a country to achieve sustainable development, environmental sustainability must be taken into consideration through public governance and leadership. This should be in respect to policy formulation and legislation frameworks and corresponding programmes. Over the past years, the Rwandese government has taken measures to ensure national development is in harmony with the protection of the environment. She has engaged efforts to put the environment and climate change at the heart of her development, the country's Ministry of Natural Resources was recently accredited by the International Green Climate Fund. This has helped the country to attract significant climate finance. Thus, Rwanda has maintained a rapid economic growth on a resource-efficient, low-carbon and climate-resilient path. Such constitute the tenets of green politics, (Nahayo et al, 2016; Cioffo et al, 2016; Huddani, 2020).

In conclusion, the theory and practice of education as reflected through environmental policy implementation strategies, enabled the strides that both the Swiss and Rwandese observed to make towards sustainable environmental protection. In both countries, there

was: high public involvement and citizenry interaction in environmental protection measures; proactive approaches to environmental management strategies; celebrated public-private partnerships on environmental protection; exemplary public governance; and targeted national funds on environmental sustainability. These were lessons that any country (including Kenya), that is keen on realizing sustainable environmental protection, could borrow.

#### **4.6 Summary**

This chapter explored the nature of the ecocentric goal of education and policies on sustainable environmental protection. The discussion was largely supported by the responses to the demands of the first two research objectives. The interpretations were informed by respondents' voices based on their lived experiences and on the official institutional documents in regard to the ecocentric goal of education and policies on sustainable environmental protection in Kenya.

The ecocentric goal of education, the ESD and natural environment policies envisioned a clean and healthy environment, where citizens are expected to embrace an environmental ethic. The findings indicated that most Kenyan citizens are generally unaware of the ecocentric goal of education and policies on sustainable environmental protection. As a result, they have limited knowledge on environmental issues to enable their commitment and participation in sustainable environmental protection. Consequently, they have incessantly been involved in environmentally degrading activities such as deforestation, charcoal burning, waste mismanagement, development and human settlements on riparian lands, among others (see summary in table 4.5), oblivious of their negative impact on health and future generations.

Despite the challenges associated with sustainable environmental protection, state agents like MoEF, NEMA, KWS, KFS, WRA, schools and county governments' environmental departments have not been keen in fulfilling their mandates. Respondents' voiced experiences, institutional reports and documents gave indications of lackluster implementation of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. Educational practice (formal, non-formal and informal) and declared policies on sustainable environmental protection, if effectively implemented, ought to inculcate positive attitudes, values and skills in citizens towards aspiration for good, healthy environment. This, however, can be achieved when learners, and ultimately the citizens, are inspired to acquire and appreciate the critical necessity for a healthy environment, a condition that is apparently amiss in Kenya, but are successful in both Switzerland and Rwanda. For this reason, the next chapter highlights the underlying factors for the phenomenon of unabated environmental degradation and consequently a search for sustainable environmental protection in Kenya.

**CHAPTER FIVE**

**UNDERLYING FACTORS FOR INCESSANT ENVIRONMENTAL  
DEGRADATION; TOWARDS SUSTAINABLE ENVIRONMENTAL  
PROTECTION IN KENYA**

**5.1 Introduction**

Sustainable environmental protection policies in any country are intended to guide her citizens towards the ideal practices for a balanced ecosystem. If future generations are to enjoy high quality life, then the present generation's knowledge, values, attitudes and plan of actions must be directed for the guarantee of the integrity of natural resources, (Rajalakshmi, 2016).

In chapter four, the focus of this study was on the first and second objectives. This chapter had focused on the third and fourth study objectives. As it is stated, the third objective was to determine the underlying factors for incessant environmental degradation notwithstanding the existence of an ecocentric goal of education and policies on sustainable environmental protection in Kenya. The fourth study objective was to recommend alternative measures for effective implementation of the ecocentric goal of education and policies on sustainable environmental protection in Kenya.

Respondents, who included senior staff at NEMA, MoEF, WRA, KWS, KFS, Environment officers from 8 Counties, and a sample drawn from ordinary Kenyan citizens, were asked to give their opinions on why environmental degradation has continued unabated in Kenya despite the existence of the ecocentric goal of education and policies on sustainable environmental protection. From the primary data collected,

themes were generated and analyzed at two levels. First level was from the staff (environmental workers) and the second level was from the general citizens. Further, secondary data obtained from institutional reports on the state of environmental degradation in Kenya was used to complement and corroborate the same. To a large extent, the primary data collected was intended to depict the state of the phenomenon of environmental degradation in Kenya from the institutional and Kenyan citizens' perspectives. From the perspectival outlook of the phenomenon of environmental degradation in Kenya, there was also the fourth objective which entailed an exploration of viable alternative measures to be deployed for sustainable environmental protection in Kenya. This is accomplished prior to drawing the constitutive conditions for sustainable environmental protection and finally, the summary of the chapter.

## **5.2 The Underlying Factors for the Phenomenon of Incessant Environmental Degradation in Kenya**

As outlined in the study background and literature review, Kenya had continued to witness incessant environmental degradation. This phenomenon happened despite an elaborate ecocentric goal of education and policies on sustainable environmental protection. Of interest was that, even Kenyan citizens who had been through formal and non-formal education, in which this goal was presumably implemented, were sojourn participants in environmentally destructive activities. This happened as both the constitutional and educational clarion calls were for a clean and healthy environment. Thus the wonder as to why these calls were not adhered to. In response to the third research question: Why has environmental degradation continued unabated in Kenya despite the existence of an educational goal and policies on sustainable environmental

protection?, interviews were conducted among institutional officers who are vested with the responsibility to enforce the sustainable environmental protection policies. The ordinary Kenyan citizens, who are the beneficiaries of such protection and therefore expected to have developed environmental ethics in order to effectively be committed and participate in sustainable environmental protection, were also interviewed.

### **5.2.1 The Phenomenon of Environmental Degradation: Institutional Perspective in Kenya.**

The study sought to obtain the actual state of the phenomenon of environmental degradation and the underlying factors for the same. Through the interview schedules, the officers in the sampled institutions gave their perceptions on the phenomenon. The institutional respondents' lived experiences on the underlying factors for environmental degradation in Kenya are summarized in Table 5.1. The findings were reasons that led to the unabated environmental degradation, despite the existence of ecocentric goal of education and policies on environmental protection.

**Table 5.1: A Summary of Descriptive statements on Underlying Factors for the Unabated environmental degradation in Kenya by Institutional Officers**

S/no	Underlying Factors	Voiced Descriptions of the Factors
1.	Corruption: Dishonesty on environmental sustainability in Kenya	<ul style="list-style-type: none"> <li>i. One can compromise county, KFS, KWS, NEMA WARMA, MoEF Officials to ones "favour" (done by both Individual Citizens and Business entities</li> <li>ii. Licenses are obtained even without compliance</li> <li>iii. Inspectors/ Enforcers "eyes are turned" through money/bribes e.g untreated effluence disposal into lake and rivers in Kisumu, Nairobi, Mombasa, etc</li> <li>iv. Inspectors/ Enforcers do not even visit sites, they just 'receive' money at the offices and issue licenses</li> <li>v. Corruptly acquired lands are "quick sales" and "cheap buys" eg forest land in Mau, riparian lands in towns</li> <li>vi. Citizens are usually very quick to cut deals, sometimes its forceful and comes with threats: unfair transfers, intimidation/ discrimination, held with suspicion or "just kept away from" phone calls.</li> </ul>
2.	Effect of perceived	<ul style="list-style-type: none"> <li>i. Junior officials' feeling that their seniors get huge salaries unlike them,</li> </ul>

	irrational Remuneration	that is, huge salary differentials, see the execution of their duties as an opportunity for enrichment e.g Forest officials, county officials, some are involved in those degradation activities as “side hustles” e.g approving construction on inappropriate lands
3.	Effect of technical Incompetency, incapacity and inadequate workforce	<ul style="list-style-type: none"> <li>i. Lack of or inadequate vehicles to visit sites</li> <li>ii. Lack of or inadequate equipment to perform technical jobs eg test apparatus for water and air Quality etc</li> <li>iii. Some officials are not trained and qualified for their areas of responsibility e.g a B.Ed &amp; MBA-Finance Graduate appointed Director Environment, Energy and National Resources in a county(Training-Job inconsistency)</li> <li>iv. Some officials expressed a lot of ignorance for critical matters in their dockets hence their optimal performance is highly unlikely.</li> <li>v. Some counties/institutions have inadequate number of personnel and some areas of jurisdiction are so vast that the officials cannot reach all parts</li> <li>vi. In some counties and institutions we have 3-in-1 or 1-in-all Cases Or even worse, none at all; where one officials performs all duties e.g Licensing, Enforcement, M&amp;E,etc. They are just overwhelmed: NEMA, KFS, MoEF, KWS,WARMA’s regional offices</li> </ul>
4.	Procrastination and Insufficiency of funding	<ul style="list-style-type: none"> <li>i. Conservation programs cannot ran in time</li> <li>ii. Cannot visit sites adequately and on time</li> <li>iii. Cannot hold adequate public conservation awareness campaigns and time</li> <li>iv. Work morale is low because of not achieving performance schedules and targets</li> </ul>
5.	Micromanagement and Breach of Policies	<ul style="list-style-type: none"> <li>i. Senior Government officials abuse their offices to acquire public/riparian lands or forest lands or encroach e.g Mau forest, dump sites in Nairobi and Mombasa</li> <li>ii. Development/Construction on protected areas is “officially forced” like game reserves eg SGR across Nairobi National Park</li> <li>iii. County officials find it impossible to “disallow” what National Government has “allowed”</li> <li>iv. Politicians “protect” their perceived supporters who live in protected/riparian lands e.g Mau Forest</li> <li>v. Orders “from above”</li> <li>vi. Politically “Correct” individuals encroach on protected lands like forests, riparian lands</li> <li>vii. Some politicians “protect” citizens in protected/public lands like forests eg Mau forests</li> </ul>

6.	Conscientization and Mainstreaming of Environmental protection issues	<ul style="list-style-type: none"> <li>i. Some officials are not aware of educational goal and policies on sustainable environment protection but know EMCA 1999 for example</li> <li>ii. Some do not have technical skills to do what they are employed to do eg M.Ed graduate appointed a Director of Environment: inconsistency of training and practice, etc</li> <li>iii. Issues on environmental conservation are not adequately integrated in curriculum/school subjects</li> <li>iv. Environmental Clubs are highly optional for students in schools, in some schools the clubs are missing</li> <li>v. Environmental education is not taught in schools as a subject and at the universities it is elective.</li> <li>vi. Most issues interrogated in public barazas are on civil security and Health e.g HIV/Aids, and very rare on environment (e.g MCH in Hospitals/health centres)</li> </ul>
7.	The Lacuna and Ambiguity specifications	<ul style="list-style-type: none"> <li>i. Every county describes/calls the departments on environmental issues differently e.g Turkana: a) Water services, Environment and Mineral Resources b) Lands, Energy, Housing, and Urban Area Management c) Agriculture, Pastoral Economy and Fisheries Machakos: a) Water &amp; Irrigation b) Energy, Lands, Housing and Urban Development c) Agriculture, Livestock and Fisheries, Mombasa: a) Water, Sanitation, and Natural Resources b) Environment, Waste Management and Energy, c) Agriculture, Fisheries, Livestock and Cooperatives</li> <li>ii. Some officers felt this brings about loss of focus and intent, therefore multi-sectoral, multi-agency and inter-county mitigation and collaboration efforts/measures are highly challenged</li> </ul>
8.	The Flux and uncertainty in the coordination of Environmental protection policies	<ul style="list-style-type: none"> <li>i. Lack of consistency of focus and efforts for conservation and protection of environment</li> <li>ii. Each governor comes with their manifestos and focus</li> </ul>

The thematic underlying factors were: Impact of Dishonesty on Environmental Sustainability policies in Kenya; effect of perceived irrational remuneration; effect of technical incompetency, incapacity and inadequate workforce; procrastination and insufficiency of funds; micro-management and breach of policies; low level of Conscientization and mainstreaming of environmental protection issues; effect of a lacuna and ambiguity in specifications; and the flux and uncertainty in coordination of environmental policies.

In respect to the **impact of dishonesty on environmental sustainability policies in Kenya**, it is imperative to explore the concept of dishonesty. Dishonesty is deceitfulness shown in someone's character or behaviour. It is a fraudulent act, (Merriam-Webster, 2019). Within theoretical ethics, Barber (2019), in his *Lying, Misleading and Dishonesty*, describes dishonesty as a concept of moral significance, to which the notions of motive and outcome are defined. To Barber, dishonesty is a contravention of moral obligations within established systems. These systems, for instance government policy implementation strategy with expected results, have objectives to achieve. Dishonesty is expressed when a player intentionally acts to avert the realization of a system's objectives or in non-conformity to laid down procedures or guidelines.

Barber (2019) referred to Emmanuel Kant's *Lectures on Ethics* where dishonesty is considered as untruthful actions that violate the right of mankind. Barber observed that the actor of dishonesty is contrary to the conditions and the means of humanity. From Barber's idea of dishonesty, would the situation be different when the perceived acts of dishonesty are an institutional systemic norm! In such a scenario, the institutional players should seek to be aware and conform to constituted institutional procedures. Also, moral obligations and commitment to realizing institutional objectives should be expressed as key performance indicators for all the system players.

Thus, in the light of Kant's and Barber's description of the concept of dishonesty, any person who acts against official and expected moral obligations to ensure sustainable environmental protection in Kenya is dishonest. They act with a motive to circumvent national guidelines on environmental management and sustainability. Broadly, dishonesty

acts are a form of corruption which expresses itself in embezzlement, nepotism, bribery, fraud, and other illegal practices, (Aukura, 2018). Due to environmental dishonest practices, Kenyans' constitutional right to a clean, healthy and sustainably protected environment is subverted as observed in section 4.3. Our study sought to find out the form of corruption that affects and inhibits the achievement of sustainable environmental protection in Kenya. The most voiced form of corruption was bribery. From the Bribery Act, 2016, Laws of Kenya, part II section 5 (i), "A person commits the offence of giving a bribe if the person offers, promises or gives a financial or other advantage to another person, who knows or believes the acceptance of the financial or other advantage would itself constitute the improper performance of relevant function or activity". Also in Part II Section 6 (i) (a), a person commits the offence of receiving a bribe if "the person requests, agrees to receive or receives a financial or other advantage intending that, in consequence, a relevant function or activity should be performed improperly whether by that person receiving the bribe or by another person".

This legal description is coherent with the observation by Gorsira et al (2018) that Corruption is an ethical and moral issue and it is exhibited by institutional employees based on corporate or individual motives. That corresponded to what theoretical ethicists like Kant and Barber observed. Also, Goldie (2009) and LaFollette (2013) put it that moral wills and obligations are expressed in human traits and actions when human beings are motivated to make considerations in certain circumstances. These circumstances, in this study, are the phenomenon of environmental degradation and the need for sustainable environmental protection, where human actions are expected to be on the basis of

awareness, values, attitudes and skills to act responsibly and sustainably on the environment.

Studies by Morse (2006) and Ewharieme and Cocodia (2011) indicated strong correlations between high corruption levels and environmental degradation in countries. This further confirmed Ankura Consulting Group's (2020) assertion that "the level of a nation's lack of corruption is positively correlated to that nation's economic growth and well-being." Ankura's study attributed any nations' well-being to their success rates in ensuring sustainable environmental protection. Both Corruption Perception Index (CPI) and Environmental Performance Index (EPI) of 2018 attested to this association because 14 countries of the top 20 in CPI 2018 were also in top 20 of the EPI 2018 as shown in appendix vii. The Taskforce Report on Forest Resources Management and Logging Activities in Kenya had noted that:-

The Board and Management of the Kenya Forest Service has been unable to stem out and in some instances have directly participated in, abated, and systemized rampant corruption and abuse of office. By so doing they have overseen wanton destruction of our forests, have systematically executed plunder and pillaging of our water towers and bear the responsibility for the bringing our environment to the precipice and that the Kenya Forest Service has institutionalized corruption and the system is replete with deep-rooted corruptive practices, lack of accountability and unethical behaviour, (KFS Taskforce Report on Forest Resources Management 2018, page 6).

This KFS report 2018 confirmed how corrupt practices have led to environmental degradation in terms of forest destruction and water towers' pillages. Lack of accountability among institutional officers and deep-rooted unethical practices exhibited by both the officers and ordinary citizens have inhibited sustainable environmental protection over the years. This implied that the practice of education and implementation of environmental policies in Kenya have not helped in citizenry character formation that

enables their commitment and participation in sustainable environmental protection. It would require citizenry ethical development and commitment among the officers and ordinary citizens to avert the situation as observed in the KFS report and section 4.3. It is the acquisition of environmental ethics and inculcation of environmental citizenship among Kenyan citizens that would enable their commitment and participation in sustainable environmental protection.

There was a gap to establish whether and to what extent corrupt practices had permeated other national and county governments' agencies involved in environmental conservation and protection. This was in light of the assertion by Morse (2006) that "higher levels of corruption are detrimental to environmental sustainability corruption reduces any positive contribution from response indicators towards environmental sustainability". To attest to this effect of corrupt practices on environmental sustainability, Keandu, a NEMA County Director of Environment in Machakos County put it candidly that:-

Some people come with some influence, that is money...the most disturbing thing is when they openly tell you that you risk transfers to areas you consider unfavourable... losing your job or dire consequences...it leaves you with few options...you just approve their developments...(Respondent B<sub>2,3</sub>).

Bribery is the corrupt practice experienced by Keandu. It came with a raft of other threats as indicated in Keandu's voiced experience. As a result, institutional officers, who are fundamentally expected to ensure compliance to national guidelines on environmental management and sustainable protection, are negatively influenced to allow its destruction. Unless there is a change in ethical considerations among the general Kenyan populace, the phenomenon of environmental destruction would continue to be witnessed.

As noted by Ewharieme and Cocodia (2011) corruption has ensured that these problems (environmental degradation activities) have remained untackled in countries where the level of corruption is high. To them, over expenditures are put in white elephant projects with little or no relevance to public welfare, especially to environmental protection and sustainability”. Mwenge, a Deputy Chief Conservator at KFS agreed that bribery is a significant hindrance to our conservation efforts. In his words:-

It is not uncommon that sometimes ‘fat envelopes’ exchange hands among some of our officers on the ground...we have also had cases of money intended for either perimeter fences or public awareness campaigns put into other issues. It really disappoints, (Respondent D<sub>1.3</sub>).

Mwenge outlined the way bribery and other corrupt practices interrupt sustainable environmental protection in Kenya. Financial resource allocations intended to help the interventions against environmental destruction are misappropriated by officers. With such continued practices, the Kenyans’ constitutional right to a clean, healthy and sustainably protected environment is far from its realization. It is only the development of environmental issues’ awareness and acquisition of requisite values, attitudes and skills, within the tenets of environmental citizenship that can avert the situation as expressed in Respondents D<sub>1.3</sub> and H<sub>5.2</sub>, among others.

In addition to the situation as described in Respondent D<sub>1.3</sub>, institutional reports have cases of development constructions on riparian lands with governmental agencies’ approvals in total disregard to the negative environmental impacts. A clear case was that presented in figure 5.1 below.

**Figure 5.1: General view shows the Nairobi river flowing through the Huruma Estate neighborhood in Nairobi County, where a six-storey building had collapsed after days of heavy rain.**



**Source: REUTERS/Thomas Mukoya, 12/06/2016**

The picture above showed the risk involved when human settlements are allowed on riparian land. The six-storey building collapsed causing destruction of property, further pollution into the river water and probably loss of human life. The buildings and other developments are so close to the river. Nevertheless, they are done with official approvals from the county and NEMA offices. Physical planning act stipulates that 30 metres space next to a river is riparian land and no human settlements should be allowed on such. This figure showed a contravention of the act.

Riparian lands, due to being close to the river, are grounds that are not firm enough to hold buildings. Therefore any human settlement construction on them is always an open risk to human life. So the proprietors and the state or county government officers who gave approvals for the constructions seen above abdicated their moral and professional obligation to ensure human safety and healthy environment. The reasons for these scenaria could be explained as expressed in Respondents B<sub>2,3</sub> and E<sub>2</sub>, where corrupt practices derailed the rule of law. Ewharieme and Cocodia (2011) had observed the detrimental effect of corruption on environmental sustainability in Nigeria. Such effects

were also witnessed in Kenya as expounded above. Corruption is an expression of lack of moral character and human compassion. Moral character and human compassion enable human beings to act in creating social order where sustainable environmental protection is key, as advocated by Plato, Aristotle and Brameld, (Cohen, 1999; Homiak, 2016).

A case of the **effect of perceived irrational remuneration** is for instance, in KWS where the directors earned a basic salary of over Ksh. 300,000.00 per month while the rangers earned an average basic salary of Ksh. 34,000.00. An almost similar situation was observed in all the state organs involved in environmental conservation and protection: MoEF, NEMA, KWS, WRA and relevant county departments, (mysalaryscale.com, 2019). Salary scales and work incentive packages play critical roles in determining recruitment, motivation patterns and retention of workforce, (Bertone & Witter, 2015). Some of the workers who receive lower salaries or lower wages expressed a “perceived unfairness” outlook into their work requirements and expected performances. Although basically salary scales are determined by academic qualifications, work experience and responsibility (Mwangi, 2020), when the differentials are so huge and appear non-rational, they are likely to bring about an element of laxity and dissatisfaction. Such attitude results to employees getting to a “compensatory mode”. This is compounded by the fact that these employees were “the last-on-line”, that is, they execute the duty that actually determined the success (or lack of it) of the agency’s objectives or mandate. For instance, rangers in the case of KFS and KWS and environmental officers in NEMA, are so critical in the execution of the organs’ mandate. Muhindi, KFS head of Eastern Conservancy, had this to say:-

The salary scales of the people up there are so high that the staff down here perceive it as unfair...they would engage in activities to fill or compensate the gap. As they engage in these “side hustles” (other economic activities other than the salaried employment), or even other unlawful practices like bribery or unregulated logging, our mandate becomes hard to realize. You can imagine these rangers are basically the last critical people on our line of mandate...we only motivate them in small ways though it is not enough to change their attitudes on this matter... (Respondent G<sub>2.3</sub>).

The expression in Respondent E<sub>2.3</sub> above indicated an attitudinal problem among employees of state agencies. This attitude affected their commitment to fulfill their organizational mandate. Studies had shown a strong relationship between employee attitude and performance, (Khan & Ghauri, 2014; Inuwa, et al, 2017). This study found that state agencies’ employees’ attitude brought about by salary differentials makes the achievement of sustainable environmental protection a challenge. It causes them to get involved in inappropriate activities like bribery as it was also attested to by Gilbert, a NEMA environment officer in Turkana County:-

My friend, you know our salaries. Sometimes you are forced to allow some things even when you know they are not right, (Respondent C<sub>10.3</sub>).

As observed by Mwangi 2020, salary scales are determined by academic qualifications, work experience and responsibility. Muhindi’s and Gilbert’s assertions showed cases where institutional officers were involved in unlawful activities like bribery at the expense of environmental degradation. Their ethical commitment to the rule of law, work ethics and responsibility was below minimum expectation. As officers vested with the responsibility to ensure sustainable environmental protection, they had not developed dependable moral character in order to determine with regularity and reliability the actions appropriate and reasonable in a situation.

Although salary differentials are normal based on the reasons observed by Mwangi (2020), when they are so huge they become a source of employee dissatisfaction and

reasons for human involvement in unlawful practices. The government should ensure the officers' salaries are truly corresponding to their academic qualifications, work experience and responsibility and they also meet their basic needs. Work ethics and commitment to duty for institutional officers should also be emphasized through establishment of institutional frameworks.

In regard to the **effect of technical incompetency, incapacity and inadequate work force**, Jaoko's and others' studies have shown that the success of an organization is strongly dependent on employees' performance, academic qualification and skills. Academic qualification is an indication that learning has occurred and that one is able to translate skills to a task, (Jaoko, 2014). This study recognised wide spread cases where agencies' employees' academic qualifications do not correspond to their responsibilities. As a result, their awareness, knowledge, values, attitudes and skills are inconsistently translated to ensure effective implementation of policies on sustainable environmental protection. A lot of these cases were found within county governments' departments that are mandated to ensure a clean and a healthy environment. These cases appeared to have been as a result of the perceived rush that counties had when they were recruiting their initial workforce after the new 2010 constitution. This inconsistency in academic qualifications and responsibility was compounded by inadequate personnel, technical equipment and vehicles for the personnel to move within their stations. Njaramba, a Director of Environment and Acting Chief Officer of Environment in Kisumu County Government, among others, voiced his experience as:-

My training is basically in education; both my B.Ed and M.Ed are in education. Of course quite a number of us came in with diverse qualifications but we learn on the job. We also have few employees in the ministry, most of them multitask and reaching out to the entire county is a big challenge, (Respondent I<sub>5.3</sub>)

Njaramba's experience in this particular county was a case that indicated how the situation is in other counties. At these levels of responsibilities, one would have expected the officers to have acquired environmentally related academic qualification and training and hence exhibit relevant competences.

Caggiano (2017) in his *Guide to anticipating and matching skills and jobs* underscored the need to match skills with jobs as a core part of the solutions that sustainable skills offers to every country in the world to ensure effective implementation of institutional systems across multiple industrial sectors. In this case, therefore, relevant education, training and qualification would have developed ethics, human compassion, competency and commitment (among the officers and general citizenry) to enhance a holistic reference for life that allows man to find peace with the environment, (Schweitzer, 2014 and Cryer, et al, 2017). Without relevant education and training, the officers in charge of sustainably protecting the environment by ensuring effective implementation of environmental policies, may not exhibit actions that allow effective response to ecological challenges, (Rao, 2010). Mwaundu, a KWS deputy Director, voiced similar default in institutional technical capacity coupled with inadequacy of personnel within the agency. To him:-

These challenges are all over and they affect our mandate as an institution. Our conservancies do not have enough personnel, vehicles are not enough and the areas they manage are vast, (Respondent D<sub>2,3</sub>)

In the KWS 2017/2018 Annual Report, the institutional incapacity observed included ageing and insufficient fleet, inadequate housing for personnel, inadequate firearms and leadership and command gaps, (p. 7). On page 12, paragraph 3, the report indicates that due to lack of advanced equipment and technology, the agency cannot obtain an accurate count of elephant population. NEMA was established under the EMCA no. 8 of 1999 as

the principal instrument of government for the implementation of all policies related to environment in Kenya. Its supreme objective was and still is to bring harmony in the management of the Kenyan physical environment. Its vision is to enable a clean and healthy environment through supervising and managing all matters to the environment. It is the lead government agency in sustainable environmental protection. This study observed a critical level staff inadequacy as outlined in table at appendix (vi). Being a lead agency and with such levels of inadequate personnel to manage huge areas of duty indicated by the number of counties, achieving its mandate was deemed a “toll order”.

Structurally, NEMA county or field office should have a minimum of three environmental officers in charge of licensing, compliance and auditing respectively, all working under the supervision of a county director. A reflection from table 5.2.1a showed a “3-in-1” cases in most counties. These were situations where one officer assumed all the roles or responsibilities. With counties having more than five sub counties, most of which are so vast like Turkana County, the inadequate NEMA environmental officers were not able to enhance and enforce compliance to environmental policies and national land use guidelines. This was confirmed by the Forest taskforce report of 2018 in that:-

NEMA is understaffed and has approximately 400 personnel. The workload analysis shows a need for 1200 personnel, (KFS Taskforce Report 2018, page 52).

A likelihood of conflict of interest or compromise of ethical standards and underperformance were likely in such a scenario. As a result, NEMA, as a lead government agency in sustainable environmental protection had not met its mandate effectively. Kwisero, the county director of NEMA in Turkana County regretted over the situation in the county by saying:-

Turkana is the largest county in Kenya, with seven sub-counties which are also very vast. As you can see I have one officer only. It becomes practically impossible for the officer to attend to all issues...its overwhelming.. we only do what we can...devolution has brought a lot of activities down here...there are developments left right and centre...may be when we leave others will come to finish up..(Respondent B<sub>6.3</sub>).

The observation made within NEMA resonated well with the forest taskforce report (2018) where it was reported that:-

KFS is understaffed. The internationally recommended ratio is 1 ranger per 400 hectares (where rangers have access to a vehicle). However, each ranger at KFS covers 972 hectares (often on foot). Consequently, KFS is overwhelmed with enforcement of conservation measures and are struggling to tackle forest crimes, such as illegal logging of cedar trees and the illegal production of charcoal. Rangers are unequally distributed and concentrated on the areas that generate the most income, namely the forest plantation areas. This means that large tracts of land with indigenous forest cover are unmanned, (KFS Taskforce Report, 2018. p. 48).

Kenya Forest Service is a corporate body established under forest conservation and management act number 34 of 2016. Its mandate is to provide for the development of sustainable management. This mandate involves conservational and rational utilization of all forest resources for the socio-economic development of the country and for connected purposes. To operationalize its mandate KFS has strategic objectives that include: to increase net forest cover, to strengthen financial base, to enhance conservation, sustainable management and utilisation of forests by improving livelihoods in rural areas, to effectively manage information within interactive integrated information systems in support of business processes and improved service delivery and finally to strengthen institutional capacity to deliver on its mandate, (kenyaforestservice.org, 2019). Agencies with such an insufficiency of personnel as observed above, found it hard to fulfill their mandate in as far as sustainable environmental protection is concerned.

Insufficient number of personnel in an organization brings about increased workload or work responsibilities and less supervision. This is likely to bring about gross and negative

effects in the achievement of organizational objectives and mandate. This explained one of the reasons for observed unabated and continuous environmental degradation in Kenya, despite state agencies vested with the responsibility to ensure sustainable environmental protection. This finding agrees with the assertion of Inamdar (2016) in his *7 reasons why organisations fail to achieve goals* that “any organization is as good as its fundamental building blocks- its people”, that is, the employees’ skills and values are of critical essence, the numbers notwithstanding. The study observed an inadequate number of personnel in all the sampled institutions. This was cited as a critical reason why these institutions cannot measure up to their mandate of ensuring a clean and healthy environment.

Consequently, as observed from the KFS Taskforce Report 2018 page 48, key performance indicators of these state and county agencies cannot be actualized due to such incapacities. Even with competing national needs and a developing economy, the Kenyan government needed to prioritize recruitment of sufficient qualified personnel for the agencies involved in sustainable environmental protection such as NEMA, KWS and KFS, among others. Adequate financial allocation should be made to the agencies for them to acquire modern and sufficient technical equipment to enable them achieve their mandate effectively.

In respect to **Procrastination and Insufficient Funding**, this study noted that every state agency and department, including those of the county governments, received their financial allocations from the exchequer, after they presented their financial annual operational budgets. For efficiency to be realised, it was paramount that these allocations

are received in good time and as budgeted. This is because state agencies and county governments' departments involved in environmental conservation and protection have timelines within which certain activities like public awareness campaigns, tree planting and site visits among others, are to be undertaken.

However, this research study realised frequent hitches, where the financial allocations were not only inadequate (below the projected expenditure avenues and amounts) but also disbursements are delayed and irregular. The government agencies and departments have calendars of events and timelines. Therefore, when the required finances do not reach them in good time, it simply means their obligation would not be undertaken thus making the institutional mandate and principle objectives unachievable.

In respect to the procrastination and insufficiency of funding, the 2017/2018 KWS report identified "budgetary constraints" as one of the administrative challenges, (p. 7). The reported "budgetary constraints" made it difficult for KWS to fulfill its mandate of conserving and managing wildlife and enforcing related laws and regulations. The goal of KWS is to work with other governmental agencies to conserve, protect and sustainably manage wildlife resources. In its 2017/2018 annual report, KWS reported inadequate data on elephant population. This was due to lack of proper technology to enable the agency to adequately do the count, (P. 12, Paragraph 2). Although the report indicated a minimal elephant population increase of 2.73% between 1989-2017, the elephant population in Shimba Hills decreased from 274 in 2012 to 35 in 2017, (P. 13, paragraph 2). With inadequate and irregular funding state agencies like KWS cannot measure to their mandate of ensuring sustainable environmental protection. Ndelina, a deputy Chief

conservator of forests at KFS voiced the same concern for procrastination and insufficiency of funding stating thus:-

We do our budgets in time as required but we receive our allocations so late...never in time. Also, as you may know, the budgets get so trimmed that even what we get is inadequate. As a result, we cannot do our activities in time and some of the expected activities end up suspended. Therefore, achieving our mandate becomes a big challenge, (Respondent F<sub>2,3</sub>).

Ndelima expressed inadequate and delayed budgetary allocations as a great impediment to realization of institutional mandate on sustainable environmental protection.

Ndelima's experience resonated with the words of Kenga'ra (2014) while writing on the *Effect of Funds Disbursement Procedures on Implementation of Donor Projects in Homabay County, Kenya*, that "disbursement of funds is the most important aspect of project implementation. It is on this basis that scheduled project activities are translated into measurable outputs in the execution of the project objective by the Project Implementation Unit". When national and county government agencies are not given fair deal in budgetary and financial allocations in good time as observed above, there is no way the environmental conservatory activities can be undertaken. Under such constraints there would be no inspection and compliance in implementing policies on sustainable environmental protection.

The aspect of **micro-management and breach of policies** as a reason for continued environmental degradation was cited by over 50% of interviewed regional and county officers in charge of the implementation of sustainable environmental protection. This appeared in various forms. One such citation was that senior officers would frequently insist that some development projects would be initiated in a place even when they did not conform to laid down procedures. There were cited cases where junior officers would

be coerced to allow illegal development projects to proceed or face “dire consequences”.

Daima, a NEMA environment officer in Kisumu, put it straightly by saying:

Even when you insist on procedures, for instance, on the safety of the Lake Victoria, especially on the untreated effluence into the Lake, am told that “the directors of that company are your bosses in the government. There is nothing you can do”, (Respondent C<sub>9,3</sub>).

Daima expressed cases where institutional officers were not committed to ensuring environmental sustainability. These officers held positions they could influence and ensure sustainable environmental protection but seemed to serve individual interests.

Mwando, a KWS Head of Mau conservancy in Narok County voiced a similar concern thus:

Some of these developments within the park belong to senior government officials and usually you may not do much to stop them. We know they (the developments) negatively interfere with the ecosystem but that is the situation as it is my friend, very unfortunate, (Respondent E<sub>2,3</sub>).

Mwando’s voiced cases where government officials who were mandated to ensure environmental protection were actually involved in degrading it.

Mwihaki, a physical planner with Nairobi County Government narrated how he has been severally confronted with such intimidating threats as below:

“This is a government project and it must be done”. You really have no option but to allow some things. Sometimes they come for approvals when the development has already started. When I insist on regulatory compliance am told “the train has already left the station”. When I ask for explanations, am told “it is you to go”, (Respondent J<sub>4,3</sub>).

The above voices illustrated the kind of experiences and situations in which institutional officers were aware of what their duty and responsibility entails, but are nevertheless intimidated by their seniors through patronage or in-patronage. This made it difficult for the agencies to ensure sustainable environmental protection. These were cases where personal interests overrode institutional mandates. The said senior government officers

used their official positions to push through their personal interests and consequently jeopardizing the achievement of a clean and healthy environment.

Klaus (2013), writing on *Land Patron or Landlord? Land Ownership and Political Mobilization in Kenya*, observed that ‘land ownership interacts with political allegiance in very different ways’. As such, he highlighted cases in which political leaders have institutionalized the practice of dispensing land as a source of political patronage. In these cases, land ‘grants’ and settlement schemes were used to reward political supporters with plots of land. To a large extent, land was distributed in some parts, especially in the valley region of Kenya to high-ranking government officials, notwithstanding the national policies on sustainable environmental protection. To illustrate the habit of dispensation of land in Kenya, Tuzikwendigo, a KFS assistant director and head of Central Conservancy Area for Narok County had this to say:

Our biggest problem against the efforts to conserve Mau is the politicians. You see them every time we try to reclaim the forests they bring all manner of protests...some of these illegal settlers in the forests are their political supporters. I call such bad politics and breach of policies, whether ignorantly or intentionally, (Respondent G<sub>3,3</sub>)

While writing on *the Politics of Sustainability and Development*, Scoones (2016) highlighted the relationship between politics, sustainability, and development. He discussed this in the perspective of transformative politics within which technology-led, market-led, state-led and citizen-led processes combined to enable sustainable development. When the focus in political leadership is not on sustainability and development, goals and policies on sustainable environmental protection would not receive required attention and emphasis. When sustainability and development is not the focus, political leaders pursue interests that are not in line with the principles and

practices of sustainable environmental protection. The conflict of interests and expected practices was what the voices from lived experiences of the respondents indicated.

Political leaders would be expected to be at the forefront in promoting and ensuring the best practices for effective implementation of the ecocentric goal of education, ESD and natural environment policies in Kenya. The respondents also voiced **low level of Conscientization and mainstreaming of environmental protection issues** as factors that enhance incessant environmental degradation in Kenya. Conscientization is an English word coined from a Portuguese word “conscientização”. Etymologically, it is a Latin American word that implied action or process of making others aware of political and social conditions that pose inequalities of treatment or opportunities. As a process, Conscientization called for the people’s (Subjects’) awareness of these conditions, (“Conscientization.” *Definitions.net*. STANDS4 LLC, 2021. Web. 13 Feb. 2020. <<https://www.definitions.net/definition/conscientization>>.). Broadly, the term conscientização (Conscientization) refers to learning to perceive social, political and economic contradictions, and to take action against “the oppressive elements of reality”, (Jemal, 2017).

In advancing the process of Conscientization, Paulo Freire introduced some concomitant concepts which provided a backdrop to his famous distinction between “banking” and “problem-posing” education, (Caraccioli, 2018; Howard & Maxwell, 2018). Freire was however, not advocating for some form of dogmatism on its own, rather he was propagating the development of a critical tradition. This is a tradition that is exemplified in the development of people who are sufficiently critical to correct mistakes and misunderstandings, by deepened affirmations that make them point out aspects that are

effective within the context of a really challenging and oppressive situation, (Hodgson et al, 2018). In such and despite all the analysis of concrete situations and contexts, there is need for acquisition of a personal testimony in the form of reflection of people's (individual) consciousness in response to a situation.

The obverse of Conscientization (that is, the process of critical emancipation) is what Freire referred to as the “fear of freedom” which is propagated by scaremongering regarding the possible effects of Conscientization. In such, Freire made it clear that Conscientization does not agree with the logic of the argument that Conscientization would lead people to ‘destructive fanaticism’. On the contrary, by making it possible for people to enter into the historical process as responsible subjects, Conscientization enrolls them in the search for self-affirmation, and thus avoid fanaticism, (Freire, 2018). In this, there was ground to appreciate the impact of human actions on the physical environment and the need to raise both rational and responsible consciousness to deviate from environmental degradation which is a threat to human existence. As a result, citizens are to embrace environmental ethics and develop environmental citizenship and thus mitigate the adverse impact of human actions on the physical environment.

Therefore, the subjects referred to in the process of Conscientization denoted those who know and act, in contrast to those who are objects: who are known and are acted upon. Thus, subjects must never be understood in a narcissistic or self-enclosed meaning which Freire labels as ‘subjectivism’ where the self becomes hubristic, (Irwin, 2012). In this respect, the subjects refer to the Kenyan citizens that were expected to have embraced environmental citizenship as was expounded hereafter. To enhance the need for

Conscientization as the counteraction for the ‘fear of freedom’, Freire advocated for the development of a more refined understanding of consciousness. With such, the subjects would embrace a critical view of environmental issues and a clear understanding of their need for commitment in searching for remedies to environmental degradation. They would affirm their responsibility to correct their actions that adversely affect their physical environment. Consequently, the citizens’ (subjects’) perception on environmental degradation was that of a ‘contradiction’ that inhibits sustainability disposition. Hence, they would not take responsible actions against “the oppressive elements of reality”- the adverse human effects of unabated environmental degradation. The described ‘fear of freedom’, in the observation of this study, corresponded to the officers’ and citizens’ uncertainty of the possibility for effective and sustainable environmental protection in Kenya. For instance, Jambolani, a NEMA Environmental Officer in-charge of compliance in Nairobi County had the following to say:-

We put effort to sensitize citizens on sustainable environmental protection but their attitude is hard to change, maybe we do not pass enough relevant information as strongly as would be expected. They do not embrace commitment to the same. Issues of corruption and its effect on environmental protection might be with us for long. Quite a number of these citizens, especially those found in environmentally destructive activities describe them as their livelihoods and without such they felt they would have nothing else to do, (Respondent C<sub>6.3</sub>).

The expression by Jambolani showed citizenry involvement in environmental degradation activities like charcoal burning, irresponsible logging and sand harvesting among others, for livelihoods. They took it as their way of life. They expressed their uncertainty of alternative livelihoods without involvement in degradation activities. As much as they appreciated that environmental protection was necessary, they lacked the resolve to be the agents of sustainable environmental protection (the fear of freedom). Such a resolve required acquisition of knowledge and development of citizenry

commitment to sustainable environmental protection measures as framed in the ecocentric goal of education and respective policies. This resolve would be on the basis of citizenry consciousness in respect to environmental issues and realization of their critical place in ensuring an ecocentric interrelationship with nature, as advocated for by Aristotle in his *Nicomachean Ethics*.

Both formal and non-formal educational practices were expected to inculcate in learners, and the Kenyan citizenry, the values, the attitudes and the skills that could enable their commitment and participation in matters of sustainable environmental protection. It would create in them awareness and relevant knowledge on environmental protection, especially on how human actions impact on the physical environment. School practices and even post-school training experiences if effectively undertaken would ensure inculcation of adequate environmental ethics in learners and the Kenyan citizenry in general. Unfortunately, though the respondents exhibited knowledge of other goals of education in Kenya like nationhood, international integration and economic participation, none of them were able to remember the goal of education on environmental protection. This was shown in Lempopo's (a NEMA Environmental Officer in Murang'a County) voice as follows:-

I can't remember any teacher or even the books I read, mentioning a goal of education on environmental protection. Maybe this was taught in History, which most of us did not take. Teachers emphasized goals on national cohesion, love peace and unity. Even the national anthem highlighted all these. Again, environmental clubs were very optional in our days in school. Practical lessons on environmental protection were rare even in my training apart from a few refresher courses that we take, (Respondent C<sub>11.3</sub>).

Although it could not have been possible for Lempopo and others to have read all the books in their schools and the colleges they attended, it was generally noted from the

respondents that there was emphasis by teachers and subjects towards other goals of education rather than on that of the environment. Forums that would help create awareness and knowledge on environmental issues like environmental clubs were so optional in schools. The learners thus missed opportunities to learn about the impact of human activities on the physical environment. When county governments and even the state agencies engage employees who have not had direct training in environmental management and related courses, as highlighted by Njaramba, the mismatch between acquired skills and job responsibility apparently makes it impossible for environmental agencies to attain their mandates. Further, Joram, NEMA County Director in Embu County observed that;-

Even when we are invited for community barazas, the main focus is always on other social issues, not on environmental protection. These people (national and county administrators) always forget that peace, security and environment are so intertwined that, actually, the first two are dependent on the safety of the environment, (Respondent B 7.3).

Lempopo and Joram's voiced experiences were indicators where the school, national and local community leadership had 'denied' both learners and the general citizenry opportunities for Conscientization in respect to sustainable environmental protection. Consequently, the citizens have failed to develop a level of consciousness that exhibits environmental citizenship. When the practice of education (both within and without school compounds)denies learners and citizenry the opportunity to acquire and practically get engaged in environmental issues, learners and Kenyan citizens cannot appreciate the concept of sustainable living and that of work, Ngota (2019).

The state of formal and non-formal education in Kenya as observed by Lempopo, Joram and others (found in the list of appendices) indicated a lower level of the pragmatic

(experimentalist) perspectives of meaningful education. The advocates of this perspective like Charles Peirce, William James, George Herbert Mead and John Dewey believed that the reality of change is dependent on interaction and experiences, (Tan, 2006).

Accordingly, formal and non-formal education in Kenya should enable learners and general citizenry to acquire awareness and practical experiences that constitute environmental ethics as they interact with the physical and social environments. The practical experiences would have included activities, problem solving and developing networks of social relationships that enable effective, meaningful and satisfying means for sustainable environmental protection. What was voiced was inadequate mainstreaming on matter of environmental protection in Kenyan schools and community. Thus, the respondents' experiences as demonstrated above depicted a situation in which schools and training practices in Kenya run parallel to the policy implementation strategies. It also depicted Kenyan schools as institutions that are fixed on books and the individual citizen experiences, teachers and the general community leaders who are blind to matters of environmental protection. A process of Conscientization would comprehensively develop an environmental citizenry in Kenya.

The **effect of a lacuna and ambiguity in specifications on** sustainable environmental protection policies were expressed by several respondents. Nnaji (2015) in his *The Lacuna in Positivist-Phenomenology*, a lacuna is an error in human reasoning that occurs when a practice, method and theory lacks adequate empirical observations. Although different disciplines would show variance in their respective descriptions of lacuna, this study agreed with Nnaji's idea since observations were done in different counties in

Kenya that name departments and dockets involved in environmental policy implementation differently. The respondents mentioned that county departments which are responsible for issues on environment were not constitutively in harmony with those of the national governments in terms of the names. There were several cases in which county governments use different names in reference to their ministries and departments on environment. This concern was illustrated with reference to sampled names in three county governments as shown in table 5.2 below:-

**Table 5.2: Names of Three Sampled County Ministries responsible for Environmental Aspects**

<b>County</b>	<b>Name of County Ministry on Environmental Aspect</b>
Turkana	<ul style="list-style-type: none"> <li>● Water Services, Environment and Mineral Resources</li> <li>● Lands, Energy, Housing and Urban Area Management</li> <li>● Agriculture, Pastoral Economy and Fisheries</li> </ul>
Machakos	<ul style="list-style-type: none"> <li>● Water and Irrigation</li> <li>● Energy, Lands, Housing and Urban Development</li> <li>● Agriculture, Livestock and Fisheries</li> </ul>
Mombasa	<ul style="list-style-type: none"> <li>● Water, Sanitation and Natural Resources</li> <li>● Environment, Waste Management and Energy</li> <li>● Agriculture, Fisheries, Livestock and Cooperatives</li> </ul>

These ministries had county executive members commonly called ministers and chief officers, who are the equivalents of principal secretaries and directors of environment at the national government. These officers were meant to be in charge of policy issues and strategies for environmental protection in their ministries. They oversaw policy implementation and undertook coordination on environmental issues. Although it was imperative that environmental issues are usually cross-cutting, their management should be largely specific. This was in terms of the officers who are involved or are responsible for policies' implementation. In the event that every county described their departments differently, coordination and engagements on sustainable development platforms were

conflicting as expressed, for instance, by Diambiano, County Director of Environment in Machakos County Government:-

You realize that every county describes its departments on environmental issues differently.....am of the opinion that, just as the number of national government ministries are constitutionally determined at 22, those for county governments should be described by names and numbers for ease of coordination..(Respondent I<sub>2,3</sub>).

Diambiano's and other experiences indicated an inconsistency in the description or naming of dockets involved in environmental issues and management. To them, the difference implied lack of consistency. Article 189 of the constitution of Kenya 2010, which is on cooperation between national and county governments envisions that the two levels of governments liaise for the purpose of exchanging information, administration, coordinating policies and enhancing capacity. The researcher observed that in the event that responsible organs bore different identities, it would bring about inconsistency, conflict of focus and ambiguity. Such were compounded by the observation that at the national government, the ministries that the researcher considered related to and whose activities directly impact the physical environment were named as: Energy, Transport and Infrastructure Development, Lands, Environment and Forestry, Mining and Petroleum, Agriculture and Irrigation, Tourism and Wildlife, Water and Sanitation, Energy, Industrialization and Enterprise Development. Although these ministries were expected to coordinate their undertaking, obviously they are distinctively focused. With limited financial resources as noted above, coordination activities and efforts at the national level and between the county respective dockets was hampered.

Despite this observation, it was worthy to note that the spirit of the 2010 constitution was to allow devolved units to manage their resources as particularly as possible, depending

on their unique social and economic ecosystems. Although that notwithstanding, an attempt to harmonize dockets, especially those on common aspects like sustainable environmental protection was found necessary. There was also **flux and uncertainty in the coordination of environmental protection policies**. Every five years, county governors come up with new manifestos and county executive members. In most cases, the manifestos emphasize different things, different times. In the event that issues on the environment miss out on their critical focus, it takes five years of “near neglect” on issues of environment. Thomanda, NEMA county director in Narok voiced such as follows:-

At the county level, it is the focus of the governor that counts in so many things. They attempt to follow their manifestos. These manifestos change with the change of governors. You can be sure if issues on environmental conservation miss out on the main focus, it will be five years of near neglect on environmental issues. Irregular change of directors and executive members is a major hitch on the progress on sustainability and development, (Respondent B<sub>4.3</sub>).

The above situation was common among the counties because it is a constitutional requirement that there are elections of political leaders of counties under the leadership of governors. Given the frequent change in county leadership, some instances of change ended up with leadership that would not be committed to conserve and protect the environment by allocating more resources to sustainable environmental protection. If a particular leadership regime ends, the one that comes next may follow the predecessor’s footsteps or otherwise. To avoid inconsistency of focus on issues about sustainability and development, county leaders were to embrace place-based leadership as described by Hambleton (2014). This is leadership where those with power (ability to influence decisions) strive to improve the quality of lives of people in a particular area or region. Since environmental degradation and effects of human activities are global phenomena, county manifestos should always highlight solutions to environmental challenges. The

next is a discussion on the underlying factors for the incessant environmental degradation from the citizens' perspective.

### **5.2.2 The Phenomenon of Environmental Degradation: Kenyan Citizens'**

#### **Perspective**

As indicated in chapter three, the general Kenyan citizens were sampled through snowballing as they engaged in activities which are in essence environmentally destructive. Such activities included but not limited to sand harvesting, charcoal burning and selling, logging, quarrying and human engagement on land, in contravention of national land use guidelines. Pradhan's, et al, (2017) analysed the effectiveness of policy implementation concerning the 2009-2010 drought in Yunnan Province in China. He obtained the perceptions of the farmers since they were the beneficiaries of the interventions. In their analysis, the effectiveness of policies was measured by short-term, immediate and tangible benefits rather than long-term adaptation strategies. To them, the benefits of any community intervention policy are expressed in its objectives. In this regard then, attaining the policy's objectives is a reflection on the benefits to the end users and hence a measure of its effectiveness.

Consequently, the sampling of the local citizens' life experiences were intended to capture the reasons for continued environmental degradation, given that they were the ultimate beneficiaries of a clean and healthy environment as envisioned in the 2010 constitution of Kenya. Besides, Kenyan citizens are principal stakeholders in sustainable environmental protection practices and are therefore expected to embrace and exhibit

environmental ethics and responsibility. Through the use of dialogue guide, elaborate responses emerged and were summarized thematically in table 5.3 below.

**Table 5.3: Summary on the Underlying Factors for Unabated Environmental Degradation in Kenya from the Citizens' Perspective**

S/no.	Underlying Factor	Voiced reasoning and descriptive explanations of the underlying factors by the respondents (sampled)
1.	High Rate of Unemployment	<ul style="list-style-type: none"> <li>i. Activities such as selling of firewood and logging are the only activities available to make money; no other jobs available</li> <li>ii. Activities like sand harvesting and charcoal burning are easily available</li> <li>iii. These activities do not require any skill or training</li> </ul>
2.	Economic and Operational Challenges	<ul style="list-style-type: none"> <li>i. High cost of living</li> <li>ii. Salaries are not enough</li> <li>iii. Some do such as “side hustles” e.g Sand Harvesting and Quarrying</li> <li>iv. They could not afford schooling past Primary or Training after high school to acquire certificates to seek formal employment</li> <li>v. These activities do not require training or certificates</li> </ul>
3.	Low Level of Conscientization on consequences of Human Actions on Environment	<ul style="list-style-type: none"> <li>i. Do not know the effects of environmental destruction e.g Sand Harvesting in Machakos, Charcoal Burning in Turkana, Washing cars at the Lake in Kisumu</li> <li>ii. They are not aware of an Educational goal and policies on sustainable environmental protection from school or otherwise</li> <li>iii. Environmental clubs are rare and optional in schools</li> <li>iv. Such campaigns are rare to find e.g in Barazas, T.Vs, Radios, Billboards like they would see/hear for Hiv/AIDS, CoronaVirus pandemic etc</li> <li>v. Rare instances of Public sensitization on Environmental Protection</li> </ul>
4.	Political Patronage	<ul style="list-style-type: none"> <li>i. Politicians support them to log in forests, encroach public gazette lands e.g Mau Forest, burn charcoal, harvest sand etc</li> <li>ii. Political give-aways in forest lands, wetlands in view of ‘political supporters</li> </ul>
5.	Dishonest malpractices	<ul style="list-style-type: none"> <li>i. It is easier to influence government officers unlawfully with money</li> <li>ii. Grabbed or encroached public and riparian lands exhibit quick/cheaper sales or buys</li> </ul>
6.	Lack of role models in public governance	<ul style="list-style-type: none"> <li>i. Some public/Government and political leaders have not served as moral examples e.g they grab public lands, develop on riparian lands, encroach on gazetted forest lands, etc.</li> <li>ii. “Get rich quick” tendencies by some government public officers and therefore “if they eat, we also eat, and because we have no public offices to loot, we do this” attitudes among citizens e.g logging in Mau forest etc</li> </ul>

From the above table 5.3, the following emerged as the underlying factors for incessant environmental degradation in Kenya: high rate of unemployment; economic and

operational challenges; low level of Conscientization on the consequences of human actions on the environment; political patronage; dishonest malpractices; and lack of role models in public governance.

On **high rate of unemployment**, the study adopted Chappelow's (2020) description of unemployment, which refers to the inability of workers to readily obtain gainful work. By obtaining gainful work, the workers contribute to the productive output of the economy. Of course this definition has its shortcomings since it restricts itself to the labour market. It is known that some people are unemployed out of choice. The definition is adopted in this study since it is what the respondents implied in their responses as was voiced by Mwalundo, a charcoal burner in Embu that:-

I have a Diploma in Sales and Marketing but for the last five years I have not gotten any formal employment...instead of staying idle, I have decided to burn charcoal as you can see. I have a family and life must continue, (Respondent L<sub>27.3</sub>).

Mwalundo represented a population segment that was professionally trained and searching for formal employment. Due to lack of job opportunities (unemployment), they engaged in activities that were destructive to the environment as 'perceived alternatives' to formalized employment. Liam, who was sampled as he washed vehicles at the shores of Lake Victoria in Kisumu County, had this to say:-

We have searched for manual jobs to no avail. We wash vehicles because it is the only job available to us in this area. The good thing is, you do not need any training to do some of these things, (Respondent L<sub>19.3</sub>).

Liam expressed cases of citizens without formal skills. As such, they engaged in activities like washing vehicles on the sea shore, which had environmental hazards. This response represented citizens who did not possess any technical skills. Nevertheless, involvement in such activities did not require application of professional skills, (Hill,

2014). It was clear that environmental degradation activities like sand harvesting, charcoal burning, cutting down trees for various purposes, among others, did not require specialized training. Such activities therefore, attract both skilled and unskilled citizens. With a 100% of citizens having attained primary education, 60.3% with a minimum of secondary education and over 95% adult population (Table 4.2), formal and non-formal education theory and practice was expected to have inculcated environmental ethics and responsibilities among Kenyan citizens. They represented a population which was key for stakeholder engagement in policy implementation on sustainable environmental protection. Therefore, an educational and policy focus on inculcating environmental ethics among this segment of the Kenyan population would significantly improve sustainable environmental protection in Kenya. The county government could also designate vehicle washing sheds that are not near the sea shore. These sheds would be technically constructed with an environmentally friendly drainage system.

Aspects of **economic and operational challenges** showed through undeserved livelihoods by the citizens. Such were as a result of depressive economic times characterized by massive layoffs by companies, collapsing of businesses and depleting incomes, (Wanzala, 2019). Wanjira, who was sampled from a Quarry in Nairobi, thus said:-

Our salaries are meager. With increasing inflation, we cannot pay school fees for our children. We have no alternatives but to do these kinds of jobs. People have also been laid off, (Respondent L<sub>12.3</sub>).

A quarry is a place where sand, minerals or majorly rocks are extracted from the surface of the Earth. It is a type of open mines where, like in Kenya, stones are extracted for building purposes. Quarries are damaging to the environment because they displace huge

amounts of soil and plants and even force animals to move from those areas. Wanjira and others engaged in improper quarrying activities for reasons that included high inflation and lack of alternatives for livelihoods. In the event that business enterprises laid off employees, including other economic challenges as was voiced, citizens had no alternative than to engage in such activities. Such enabled them to barely manage their individual and family responsibilities. Unfortunately, these engagements were done in complete disregard to sustainable quarry and other environmental management guidelines.

For sustainable management of the environment, the government (through NEMA), outlined the integrated national land-use guidelines for sustained societal attributes, that is, infrastructure, environmental resources and public safety in 2011. Irrespective of the reasons that Wanjira and others voiced for engaging in environmentally degrading activities as sampled, they particularly had not observed guidelines on quarrying activities in Kenya which included that: all quarry faces or cliffs should be securely fenced where the fence should be at least 3 meters from the edge of the cliff using chain link of at least 1.5meters high. Warning signs of appropriate font size and in the appropriate language should be erected in all quarry entries and in areas with high cliffs, for example, danger quarry 'Deep Pit' or 'Caution Flying Stone and Debris'. Thirdly, quarry operators should ensure provision of clean water, sanitation and well equipped first aid kit with trained first aiders, provide protective gear for persons working in quarries as provided for in the Public Safety Regulations.

In addition, quarry operators were to be trained on safety, health and environmental issues and that the quarry site should have a person in charge of safety and ensure establishment of Safety, all under the supervision of Health and Environment Committees, (NEMA; Integrated National Landuse Guidelines, page 24). All these guidelines were found to have been flouted in the management of the sampled quarries with its devastating effect on the surrounding environment. By embracing environmental citizenship, Kenyan citizens would exhibit environmental ethics. They would, thus, appreciate and commit to observe the national land use guidelines as outlined by NEMA in 2011. Moreover, when asked about their interaction with NEMA in terms of stakeholder engagement, Wanjira further said:-

We have been involved in quarrying for a while. I hear there are licenses one should have but we have done without them and nobody really bothers us or even engages us for any awareness and safety discussions. When those NEMA and county officials come, we manage them {which implied bribery}, (Respondent K<sub>9,3</sub>).

Wanjira's experience was an instance where institutional officers had abdicated their responsibility; they neither assessed and gave licenses respectively nor created public awareness on environmental issues like safety. Instead, they took bribes. The above narrative was a case in which the inspectorate departments of the county governments and the compliance officers at NEMA never measured to their mandate to ensure safe and healthy environment. They did not undertake stakeholder engagements in matters on sustainable environmental protection. Another respondent called Mwakinda, sampled while cutting mangrove trees for timber at Tudor, Mombasa, expressed that the underlying factor for involvement in an environmentally damaging activity was due to loss of livelihoods and inadequate incomes. He thus said:-

When I am not at work, I get to do something else to supplement my income. As you may know, times are challenging and people have lost jobs. It is impractical to take care of your responsibilities. This (referring to cutting of mangrove timber) sometimes helps, (Respondent L<sub>2,3</sub>).

Mwakinda and other citizens were involved in environmentally destructive activities, like haphazard cutting down of trees for charcoal and timber, for supplementary income.

Citizens that were found engaging in environmentally degrading activities gave search for alternative livelihoods as the underlying factor. To them, irresponsible activities like logging, sand harvesting, charcoal, among others, supplemented their livelihoods. They engaged in such activities oblivious of the negative environmental impact of such activities.

Even with economic and operational challenges, sustainable development dictates that natural and other resources are to be used responsibly. For instance, citizens involved in logging were to acquire respective licenses where issuance is based on a sustainable assessment of the forest cover. That was meant to be the case for other activities like harvesting sand, quarrying, among others. County and NEMA officers vested with the responsibility to ensure compliance had not lived to their institutional mandate. Development and acquisition of environmental ethics among the citizens would enable their commitment to and participation in a sustainable relationship with their physical environment. Economic and operational challenges, especially those coupled with high inflation rates, often lead to increased poverty levels. This is mostly when proper economic interventions are not put in place in good time, (Neaime & Gaysset, 2018). Being a complex concept, poverty does not mean the same thing for all people, (Worstall, 2015). As a concept in contemporary political philosophy, poverty is understood as a central focus of analysis for social justice and equality, (Wolff, et al, 2015). To Wolff et

al (2015), poverty is seen in terms of individuals in a society not having adequate resources to meet basic needs.

In his *Teaching with Poverty in Mind; Understanding the Nature of Poverty*, Jensen (2009) identified six types of poverty: situational, generational, absolute, relative, urban, and rural. The specific descriptions of these types were not in the interest of this study. Nevertheless, it was noted that in the United States, individuals live in poverty when they have income which is insufficient to purchase basic needs: food, shelter clothing and other essentials. Persons who live in absolute poverty tend to focus on day to day survival, (Jensen, 2009). From the respondents' experiences voiced in this study research, poverty was seen as a situation where a person lives within an income level where they are not able to meet their basic daily essentials of life: food, shelter and clothing, and that their focus is on day to day survival.

The respondents who voiced poverty as a reason for engaging in activities that are destructive to the environment identified with the tenets of generational poverty as outlined by Jensen (2009). To Jensen, families living in this type of poverty are not equipped with the tools to move out of their situations. In respect to Jensen's idea of poverty, Jumbiri, a local charcoal burner from Loima Hill, a gazetted forest in Turkana County, "cursed" engagement in environmentally destructive activity on his family background stating that:-

In our family of eleven, only three of us managed to attend secondary school. The rest of us dropped out after primary. Poverty could not allow us to proceed. As a result, we can only burn charcoal since it requires no training. (Respondent L<sub>24.3</sub>).

Jambiri voiced socio-economic challenges and failure to attain post-primary education as reasons for citizenry engagement in environmentally destructive activities. That

perspective of poverty, as outlined by Jensen, appeared to “push” Kenyan citizens to engage in environmentally degrading activities. Such was done in disregard to environmental ethics.

In Kenya, 42 counties had over 50% of households whose source of energy was wood. Except Nairobi and Mombasa, the rest of the sampled counties in this study fell in this category. In fact, Murang’a, Embu, Machakos, Narok and Turkana had over 80% of households using wood energy. Poverty drives the need for cheaper energy like firewood for cooking, (NEMA EPI in Turkana County, 2018, p.10). Irresponsible clearing of forests and burning wood for energy exposes air pollutants and particulate matter that have a negative effect on the human respiratory system. NEMA and county governments failed to promote cleaner technology for cooking and creating awareness on the implications of using wood fuel on general human health. Both formal and non-formal educational practices should inculcate environmental citizenship among learners and the general populace. With such, citizens would relate responsibly with their physical environment.

It was imperative to note that use of wood energy could still have been as a result of economic underdevelopment and low income levels. Such notwithstanding, we have countries, like Asia, where citizens have access to electrification at lower income levels, (Rao & Pachauri, 2017). Therefore, the respondents’ view that economic and operational challenges are reasons for involvement in environmental degradation is not purely tenable. Compared to the Asian situation cited by Rao & Pachauri (2017), there is a level of environmental awareness and government involvement that would enable citizens’

sustainable relationship with the physical environment. Governments' involvement would include subsidizing electrification programs and low tax tariffs on electricity use and cooking appliances.

Kenyan Citizens also expressed **low level of Conscientization on the consequences of human actions on the environment** as an underlying factor. Buratti and Allwood (2018) assert that human beings' response to risks depend on their level of knowledge (awareness or ignorance). In the survey conducted in this study, less than 30% of respondents were significantly aware of the general risks entailed in a degraded environment. About the same percentage stated that they had engaged, as individuals or community, in activities that can be described as environmental conservation. The consequences of destructive human actions on the environment, as voiced by the respondents, included reduced rainfall amounts and increased atmospheric temperatures. As it came out, with less than 30% of the sampled citizens expressing a disposition in knowledge and involvement in conservation practices, it was unlikely to achieve any meaningful impact for sustainable environmental protection, both in short and medium terms, (Regis et al, 2013). This observation was in response to the need to measure policy effectiveness within a term-term, with immediate and tangible benefits rather than long-term adaptation strategies, (Pradhan et al, 2017). Shokando, a garbage collector from Mombasa County., was encountered dumping waste on an undesignated site using a truck. He had the following to say:-

As we dump garbage here, the big problem is the county government who has not provided proper guidelines and sites. NEMA watches as this happens. Also people engage in environmentally destructive activities due to ignorance. It is true there are no jobs, but mostly they do not know the negative effects of burning waste in public, charcoal burning and others. These things were not taught in schools. Environmental clubs were optional. Look at TVs, radio and even newspapers, there is very little on environmental protection, (Respondent L<sub>3.3</sub>).

Shokando's experience showed how citizens dumped garbage in undesignated sites, oblivious of its effects on their health and the environment. They publicly burned the waste and thus exposed themselves to respiratory infections. Shokando expressed the failure on the part of educational institutions and state agencies to create citizenry awareness on how human involvement in activities like waste mismanagement, unregulated charcoal burning is detrimental to human health and the environment in general. He indicated lack of public consciousness on environmental issues and the effects of human actions on the physical environment. Usually, NEMA in collaboration with the county governments, were expected to designate dumping sites, create awareness on proper waste management practices and ensure compliance to the same.

In respect to Buratti and Allwood's (2018) observation, citizens' participation in sustainable environmental protection is determined by their consciousness on environmental issues, especially the impact of their actions on the environment. Shokando's experience indicated citizens' inadequate awareness on environmental issues. More critically, he expressed institutional inefficiency in creating citizenry awareness of and developing their consciousness on these issues and ensuring environmental guidelines' compliance. To Shokando, both formal and non-formal education had neither helped to create awareness for citizenry commitment and participation in sustainable environmental protection.

Sibanda et al (2017) had cited inadequate funding, inadequate skilled personnel and poor public attitude as reasons for waste mismanagement in Kisumu. Experiences as voiced Respondents L<sub>1.3</sub>, L<sub>18.3</sub> and L<sub>24.3</sub>, among others, indicated lack or inadequate knowledge

(ignorance) on the negative impact of waste mismanagement, and other destructive human activities, on human health, inaction by state agencies like NEMA and county departments and general lack of public awareness campaigns as other reasons for general environmental degradation in Kenya. To explicate citizenry involvement on waste mismanagement and other environmentally degrading human activities, the NEMA KEPI report of 2018 indicated that it was only 4 counties out of 47 in Kenya which had 60% and above of their waste solid safely disposed of in dump sites. The fairest was Nairobi, but only at 80%. Generally, NEMA reported a gradual decline in safe solid waste disposal from 30-25% in Kenya between 2016-2018, (NEMA KEPI, 2018, p.25). The uncollected or unsafely collected solid waste is left exposing citizens to diseases and other environmental hazards. Such denies Kenyan citizens their constitutional right to a clean and healthy environment. Additionally, Jomba, a timber dealer in Narok County put it as follows:-

Many of us are not aware of the necessity of protecting the environment. Sometimes I look at media reports on how we as Kenyans have messed up our environment and I pity the future. No wonder we have shorter rains and high temperatures. People irresponsibly cut down trees for wood and charcoal. NEMA and the country government are meant to engage citizens in conservation activities but not doing enough. About three years ago KFS had training with members of our community to educate us on the importance of trees at our homes and gave us seedlings. Look (pointing at a section of the Mau Forest) at how naked that section of the mountain forest is, (Respondents L<sub>16.3</sub>).

Njowiano expressed citizenry ignorance on Sustainable environment protection. To Njowiano, there were glaring effects of irresponsible human actions, like cutting down trees, on the environment that included high temperatures and unreliable rainfall amounts. That implied that the institutions (schools and state agencies like NEMA) that are vested with the responsibility to create awareness on sustainable human relationship with the physical environment have not lived up to their mandate. The institutions have not

effectively engaged the citizens to enable their commitment and participation in sustainable environmental protection.

Amak and Kashani (2014) had underscored the need to bring true change by awakening the masses to independent thought and reason. It is the practice of education and implementation of the policies on environment that was expected to awaken the Kenyan citizens to independent thought and reasons on the need for, commitment and participation in sustainable environmental protection. With an inadequate stakeholder engagement, especially of the local citizens (as highlighted by Shokando and Njowiano) who are the key recipients and beneficiaries of a clean and healthy environment, the link between policy frameworks, corresponding strategies and the practice of education was very weak. NEMA, KFS, KWS and the corresponding county departments were expected to have effectively coordinated and engaged the citizens on the benefits of a sustainably protected environment.

Citizenry involvement in environmentally degrading activities was a clear indication that Kenya had not lived up to the Rio Declaration on Environment and Development (UNESCO, 1992). In this declaration, which is still relevant to SDGs, governments and societies committed to educate their new generations and citizens on developing and adopting “new ways of living and behaviour that support more sustainable balance in the human-environment relationship”. This is a critical tenet of environmental citizenship. Therefore, Kenya needed to ensure a realization of the Rio Declaration. This would be achieved when citizenry awareness is created to levels of consciousness that enables Kenyan citizens to appreciate a sustainable co-existence with the natural environment.

From the responses, **political patronage** was identified as a factor for unabated environmental destruction. While writing on *The Art of the Network; Strategic Interaction and Patronage in Renaissance Florence*, McLean (2007) explains patronage as a communication in form of requests or inducements for individual and material benefit. These requests and inducements are for self-interests. As such individuals use these techniques to forge ties with each other in a multitude of ways; economic, artistic, psychological and political, among others, (page 3).

Although McLean did not relate the critical intent for patronage to issues in the environment, its purpose in this study was to show how these “requests and inducements” are intended to circumvent procedures and desired guidelines in environmental conservation. Institutional officers expressed the element of patronage in terms of political land ‘grants’ and ‘rewards’ to political supporters and ‘our people’ notions. Debra, a Kenyan citizen was encountered as she was harvesting sand in a Machakos County river candidly had this to say:

Our member of parliament told us that this is our river. Therefore, we should not allow other people to benefit from what belongs to us. When our leader puts it like that, we follow and cannot allow anyone else here, (Respondent L<sub>5.3</sub>).

Debra presented a case where community leaders, like members of parliament, have themselves led the general citizens to participating in incessant environmental degradation activities like uncoordinated sand harvesting. The kind of benefit that Debra was alleging involved harvesting sand unsustainably for selfish economic gains. This led to rivers drying up and not being able to sustain the ecosystem in a balanced manner. Debra and the general citizenry look upon community leaders for exemplary guidance and leadership in managing the environment. Debra’s voice brought to the fore the

critical role public leaders play in providing guidance and exemplary commitment to environmental issues. They greatly influence citizenry characteristics in matters of public good.

When the 2010 Kenyan constitution came into effect, all parliamentary representative members in Kenya, right from a member of county assembly, including the president, must have acquired secondary education. These political representatives are expected to be aware of the role that education plays in terms of practices and policies that are to enable sustainable environmental protection. They perform the legislative function of the country's leadership. They therefore, are to be at the frontline in informing the masses of and defending the statutes. When the defenders of the law lead local citizens in defying guidelines, and in this case those that are meant to sustainably protect the environment, then attaining a clean and healthy environment becomes illusive. Jowizar, a resident in South Western Mau in Narok County, which is a gazetted piece forest in the larger Mau Complex, said:-

I came here in 2001. By then, my parents had been given this piece by a former political leader. Current agents of government, that is, the police and KFS want us to move out. The politicians tell us to stay put. Again, where do we move out to? This is the only place we have called home all these many years, (Respondent L<sub>15.3</sub>).

Jowizar indicated scenarios where high level government and political leaders illegally allocate pieces of land to citizens. These pieces of land include forest and conservation land. The scenario presented by Jowizar was that of political 'protection' and patronage to keep citizens from following land-use guidelines as provided by NEMA in 2011. The politicians offered this 'protection' as a political reward to their 'followers'. That was done in outright disregard to sustainable environmental protection measures. When political leaders in former and current government regimes gave out land 'grants' and

'protecting' citizens living in public, gazetted and protected lands, KFS, KWS, NEMA and county governments would not execute their mandate of ensuring a clean and healthy environment. Some of these lands, for instance the Mau Conservancies, are catchment basins for permanent rivers like Sondu Miriu and Yala. Human settlements and developments in those forests and gazetted areas interfere with the natural ecosystems, thus causing environmental imbalances and destruction. These ecosystem imbalances and environmental degradation aspects include reduced rainfall and river water amounts, extinction of flora and migration and or extinction of fauna. Until educational and respective policy implementation practices inculcate environmental ethics among citizens, including political leaders, the kind of environmental destruction witnessed in Kenya will not be abated. With citizenry development and exhibition of environmental citizenship, Kenyans would commit and participate in sustainable environmental protection effectively.

Citizenry **dishonest malpractices** were a great hindrance to sustainable environmental protection in Kenya. As highlighted in section 5.2.1, dishonesty is deceitfulness in one's character or behavior; it's a fraudulent act expressed when a player intentionally acts to avert the realization of a system's objectives or in non-conformity to laid down procedures or guidelines, (Aukura, 2018; Barber, 2019). As a form of corruption, the KFS Report 2018 had expressed dishonesty as a "rotting fibre" that hampered conservation progress within KFS. It was observed as an institutionalized norm, (KFS Report 2018, p.6). Formal and non-formal education was expected to enable the development of environmental virtues and character traits that are embodied in the commitment and participation in sustainable environmental protection by citizens.

Good governance and leadership is a critical necessity for environmental sustainability, as observed by Leitao (2016). Morse (2006), Ewharieme and Cocodia (2011), and others had studies that significantly associated corruption and environmental degradation. As a study gap, this study was to find out if corruption was an underlying factor that hampers sustainable environmental protection in other state and county governments' agencies or departments in Kenya. Local citizens voiced corrupt incidences that were expressions of weak moral wills and commitment to act in response to sustainable environmental protection. From instance, Jimmy, a property owner in Murang'a town, had this to say:-

It is possible to have anything go for you as long as you have money. These officers from both national and county governments are easy to go your way. When they come to complain you can always turn their face {implying bribing the officials}, (Respondent L<sub>26,3</sub>).

Jimmy had a development construction on a wetland, just like the case indicated in figure 2.10. Interestingly, he had obtained all government approvals; from the county physical planner, national construction authority and NEMA, among others. All these approvals were in contravention of the guidelines for wetlands and wetlands resources. The key guideline contravened by Jimmy and others is that “a wetland shall under no circumstance be drained”, (NEMA, Integrated National Landuse Guidelines, p.8).

Jimmy indicated that with money, one would bribe or corrupt a state or institutional officer and get a developmental approval, even on an outlawed piece of land. Such a practice was against environmental ethics and moral wills. It was an expression of human anthropocentric attitudes. As noted earlier, education for sustainable development was expected to enable development of environmental virtues and character traits that assures a commitment on the part of the citizens to act responsibly and sustainably towards the

environment. This was because commitment to the rule of law is crucial for environmental sustainability and is a way to put a stop to the devastating impact that corruption had on the environment, (Leitao, 2016). Moreover, Mainga, who was a local citizen in Nairobi County involved in real estate management had a development on a land considered public land and had this to say:-

Usually land owned against land use guidelines is always a “quick buy or sale”. Such land pieces are cheaper compared to legally placed ones. For example, on this piece of land I am the 3<sup>rd</sup> owner and I want to dispose of it. You would find others who are even 4<sup>th</sup> owners (Respondent L<sub>11.3</sub>).

Mainga expressed how it was cheaper to buy or easier to sell a piece whose ownership or use is in contravention of national land use guidelines. Mainga’s experience explains why illegal settlements like grabbed forest lands, encroached game reserves and riparian lands have their occupying owners as 3<sup>rd</sup> or 4<sup>th</sup> owners of the pieces of land. These are cases where ‘titled’ owners would realize that the property was on illegal land and endeavor to dispose of it quickly. Such transactions usually made ‘quick deals’. Human development on lands that are meant for protection and conservation serves to imbalance the ecosystem and destroy the environment. It was only the inculcation of environmental ethics and commitment to respect to the law that would enable citizens’ effective participation in sustainable environmental protection.

The respondents also voiced **lack of role-models in public governance** as a reason for their indulgence in environmental degradation. The Greek’s idea of public leadership stipulated that rulers should be people with knowledge and moral strength. These are qualities that enable a leader to act according to the common good. To Plato, leaders or “rulers who are motivated by self-interest are not strong leaders”. To him, leadership is a

duty that necessitates acquisition of techniques and skills for the art of ruling, (Lüdert, 2017).

Although Plato advocated for kings or leaders to be philosophers in an ideal state, the contemporary political and other leaders in positions do not have to be philosophers per se. What is critical in leadership however, is aptness in acting for the common good of the society, that is, acting within the tenets of what Hambleton calls “place-based leadership”, (Hambleton, 2018). Place-based leaders advocate for transformational changes in the context of social needs and aspirations, advance states of collaboration, promote a stronger sense of common and democratic social purpose, and community empowerment, (Hambleton, 2015; Worrall & Kjaerulf, 2019; Sotarauta & Suvinen, 2019). As a reflection of the platonic idea, sustainable environmental protection is a common good and enhances social order. In addition, environmental citizenship advocates for creating awareness and raising community consciousness in terms of sustainably relating to and protecting the environment, (Christie et al, 2019).

The strongest way to enhance citizenry commitment and participation in ensuring social order (and specifically in the case of sustainable environmental protection in Kenya) is by having public leaders who the citizens can observe and emulate. When public leaders conduct themselves as consistent and positive role models, the citizens follow them, (Rowe, 2018). Kenyan public leaders in the three arms of government are to exhibit knowledge on environmental issues and a resolve to promote sustainable environmental protection.

Respondents expressed how Kenyan public leaders have generally not been role models in sustainable environmental protection and its practices. For the citizenry respondents, failure by some public leaders to act as role models on the matter of environmental protection was a reason for their continued involvement in environmentally degrading activities. Dalton, a timber dealer, interviewed while logging timber in Mulinduko (a gazetted forest) in Embu County, justified his action by expressing that:

Sometimes these politicians and senior government officers lead in grabbing and encroaching gazetted pieces of land in our country. As a result, they have no moral authority to speak against such vices. You would see a government officer grow rich so quickly. One has no idea what they do up there! There is a lot of looting in the government my friend. The common citizen has nothing to loot, (Respondent L<sub>28,3</sub>).

Dalton's expression showed how both the citizens and government officials were bent on environmentally destructive practices. They grab and encroach gazetted pieces of land.

Dalton's voiced experience resonated with the adverse effect of official patronage as observed earlier in the institutional perspective. Some of these grabbed lands were meant to be the designated dump sites for proper solid waste management in Kenyan cities and towns. Grabbing of land has resulted in the exposure of Kenyan citizens to environmental risks of poor health. The 'get rich quick' tendencies of some public officers, was a situation where leaders acted in self-interest and lacked moral strength to act according to common good. Such was converse to place-based leadership tendencies in reference to sustainable environmental protection. Place-based leaders would promote environmental ethics as the heuristics to environmental degradation in Kenya. Nyerere, a dealer in sand harvesting and sales in Kisumu county, alluded to the inadvertent situation as follows:-

I know a senior politician who owns a big chunk of Karateng forest (a gazetted forest in Kisumu County). These leaders (politicians and senior government officers) are not a good example. The county and NEMA officers push us because we are ordinary citizens. Let them go for the big fish (senior government officers) and leave the civilians alone, (Respondent L<sub>20,3</sub>)

Nyerere further presented cases of public leaders that had not set exemplary standards in terms of sustainably protecting the Kenyan environment. These leaders grabbed and interfered with conservation land and got away with it. The most appropriate response to both Dalton's and Nyerere's experiences was a highlight by Gächter & Renner in their contribution on *Leaders as role models and 'belief managers' in social dilemmas* in the journal of economic behavior and organization, 2018 in that:-

Field evidence on charitable giving, tax evasion, the abuse of the welfare state, criminal behavior, corruption, and corporate culture, suggests that people's own behavior in these domains depends strongly on their beliefs about how others will behave. Leaders – politicians, government officials, and managers – may serve as role models for what is considered appropriate and may thus shape their followers' beliefs about the behavior of others. For instance, leaders who behave too selfishly, evade taxes, consume unwarranted privileges, and accept bribes, etc. may induce people to do the same. If the leader behaves as a positive role model, the opposite conclusions may hold (p. 321)

Gächter & Renner (2018) observation was a strong case of how public leaders influenced their subjects (citizens) in forming opinions and eliciting reactions to issues on social order, just as Debra had expressed, (Respondent L<sub>5.3</sub>). Leaders' behavioral patterns significantly affect citizens' actions on issues of common good as observed. The explanation given for the underlying factors for incessant environmental degradation in Kenya depicts impressions of a social dilemma. These impressions were recounted by Mancur Olson (1965) in his work called *The Logic of Collective Action*. To Olson, a social dilemma or collective action problem occurs when members in a group choose to pursue individual profit and immediate satisfaction rather than choose to behave in the group's best long-term interests, (Lenge, et al, 2013). Although Olson's social dilemma theory has been popular with scholars who are largely from economic and social interactive matrices, significant parallels exist, given the manner in which Kenyan leaders

have acted in pursuit of selfish interests in the management of the country's natural resources.

Natural resources, that largely constitute the natural environment, should be managed for the good of both the present and future generations. The salient truth in the logic of collective action is that, the more members benefit from cooperation, the more they would be willing to cooperate, (Weimann, et al, 2018). Accordingly, the Kenyan citizens and political leaders have failed to portray desirable leadership characteristics that are congruent to sustainable environmental protection. They have been observed and labeled “grabbers of natural resources for their own personal benefit”. It is no wonder that Kenyan citizens “have not cooperated” in matters of sustainable environmental protection. The failure of the Kenyan leadership to live up to the expectation had enticed quite a number of Kenyan citizens to involve in actions that are environmentally destructive. Chinua Achebe insinuates thus, describing it in that “we have killed our past, and are busy destroying our future” in *Things Fall Apart*.

Aristotle's metaphysical view of reality as “scrutiny of observable data” would liken the Kenyan citizens and public leaders with wonder. A wonder on the direction and destination the leaders are taking the country in terms of managing the country's natural resources, especially the environment within the confines of sustainable environmental protection. Greek moralists of the ancient period appreciated people of good moral character whose determination were vital in regulating actions that were considered appropriate and reasonable in a conducive environment. What had been corroborated in respect to rampant dishonesty from the public governance was a despicable situation that

had failed the test of regularity and reliability in providing appropriate actions in Kenya to enable sustainable environmental protection.

Accordingly, the ancient Greek moralists would describe Kenyan citizens, including their leaders as people who had exhibited inadequacy of environmental consciousness. This was an indication of a state of moral bankruptcy and materialistic gain, Nayak observed (2008). Kenyan citizens needed to change their materialistic orientation and instead should embrace a creative and holistic approach to biotic and life-centred ecological sustainability. Such were some of the basic tenets of environmental citizenship that demanded citizens' commitment and holistic participation in matters of sustainable environmental protection. Sibanda et al (2017) advocated for change from the negative attitude towards solid waste management by improving the general inadequacy of environmental ethics and responsibility among Kenyan citizens. The next section is on the search for better alternative approaches to sustainable environmental protection in Kenya.

### **5.3 Towards Measures for Sustainable Environmental Protection in Kenya**

It was imperative at this point to begin by appreciating “environmental ethics” as an established field of practical philosophy “which is useful in formulating fundamental arguments in support of sustainable environmental protection”, (Ott, 2020). It was noted in the background to this study that the Global EPI ranked Kenya in 2018 ranking list among the “poor performers” in matters of sustainable environmental conservation and protection. Also, Ali Ismail, the then Kenya’s principal secretary MoEF, observed in NEMA’s Kenya Environmental Performance Index of 2018 that, debates and measures

on environmental challenges are “hampered by lack of problem definition, uncertainty about the facts, extent of these challenges, and ill-defined solutions”, (Kenya Environmental Performance Index, 2018, p. X). Such translated to lack of understanding of the extent of the challenges and existence of well-defined solutions to the challenges.

Accordingly, section 5.2 presented the phenomenon of environmental degradation in terms of its underlying factors. These factors were obtained from institutional reports and observations gathered from Kenyan citizens’ experiences. This was an attempt to invoke clarity on the environmental issues and demonstrate the ineffectiveness of the practice of education and the implementation of policies on sustainable environmental protection have been in Kenya. Consequently, considerations for better alternative measures towards effective implementation of the ecocentric goal of education and policy strategies on sustainable environmental protection are presented in this section. Such measures largely emerged from the respondents’ views for improving sustainable environmental protection in Kenya. The measures were summarized into four main overlapping themes. Finally, the discussion led to what ought to be the constitutive conditions for sustainable environmental protection in Kenya.

### **5.3.1 Themes in the Alternative Measures for Sustainable Environmental Protection in Kenya**

The respondents offered some proposals in regard to alternative measures to ensure sustainable environmental protection in Kenya. Their views on what they considered to be better alternative approaches for effective implementation of the ecocentric goal of

education and policy strategies on sustainable environmental protection are summarized in table 5.4.

**Table 5.4: Summary of Respondents Responses on Alternative Measures to Ensure Sustainable Environmental Protection in Kenya**

Recurrence of Themes	Voiced Experiences	% of Officers on the theme	% of Local citizens on the theme
Empowerment and capacity increase of environmental Institutions	<ul style="list-style-type: none"> <li>i. Employ professionals especially in County governments</li> <li>ii. Recruit enough staff</li> <li>iii. Enact/amend laws to give NEMA prosecutorial powers, for spatial planning, increase GDP % on Environment, increased penalties for contraventions,</li> <li>iv. Regulate and increase financial allocation to agencies; for campaigns, vehicles and other equipment</li> <li>v. Strengthen partnerships and participation</li> </ul>	100%	Less than 10%
Conscientization of citizens on sustainable environmental protection	<ul style="list-style-type: none"> <li>i. Institute community environmental clubs and make them requirement for public service</li> <li>ii. Environment education as a subject for primary and secondary level and common unit at tertiary level</li> <li>iii. Make our natural environment integral part of our nation's character and integrity; environmental ethics</li> <li>iv. Media coverage; print/electronic</li> <li>v. National tree planting/public clean-up days</li> <li>vi. Set environmental targets eg zero net greenhouse gas emissions by 2050 etc</li> <li>vii. Establish a % minimum of local media coverage</li> </ul>	100%	Over 90%
Motivation for sustainable environmental protection	<ul style="list-style-type: none"> <li>i. Annual awards on clean technology &amp; participation; NEMA, Presidential</li> <li>ii. Tax exemptions on innovations in clean technology and equipment, cooperating agencies like AFEW etc</li> <li>iii. Special government act and fund to clean technology</li> <li>iv. Strengthen youth/women programs to give alternatives to economic activities</li> </ul>	Over 95%	50%
Integration of pragmatism and formalism; Practice Approach Vs. Policy Approach	<ul style="list-style-type: none"> <li>i. Community-based forestry, Water treatment plants, Waste recycling plants, compulsory environmental clubs at the community levels</li> <li>ii. Public sector requirement for environmentally friendly and resource-saving products in procurement processes</li> <li>iii. Environmental targets on CFCs, CO<sub>2</sub>, Global temperature reduction, fossil</li> </ul>	Over 90%	Over 90%

	consumption etc iv. Increase access to Environmental information v. Green public places & facades vi. Set minimum % of social corporation of companies on environmental support vii. Establish a cycling culture to work & for public health viii. Community renewable energy sources eg wind/solar systems ix. Greenfields wetland projects x. Government support to e-governance, less paper & less travelling		
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The table above indicates recurrence themes, voiced experiences, the percentages of voices from government institutional officers’ and those of ordinary Kenyan citizens’ experiences in each of the thematic areas. The themes were identified as: **empowerment and capacity increase of environmental institutions; citizenry Conscientization on sustainable environmental protection; motivation for sustainable environmental protection in Kenya; and integrating pragmatism and formalism in sustainable environmental protection in terms of practice approach versus policy approach** as presented below, respectively.

The respondents voiced **empowerment and capacity increase of environmental institutions** as a basic measure in winning the war against incessant environmental degradation in Kenya. Capacity is a broad and complex concept particularly when in reference to institutional capacity. The concept is particular in development contexts and is mostly understood as a general term. UNDP and the United Nations Disaster Risk Reduction define institutional capacity as the capability of an institution to set and achieve social and economic goals, through knowledge, skills, systems, and institutions, (Institute for Transportation & Development Policy, 2016). In this study, the term

“institutional capacity” refers to the capability of an institution to achieve its mandate, based on its operational objectives albeit its human knowledge, attitude, skills, financial, technical and legal facilitation within a work environment.

The 2017 KWS report (page 12 paragraph 3) indicated several institutional incapacity depicted by : lack of accurate record of elephant population due to technical incapacity, inadequate trainings and public awareness campaigns, ageing and insufficient fleet, inadequate housing for personnel, inadequate firearms, budgetary constraints, leadership and command gaps (page 7) and that “the proportion of elephants killed due to human conflict and unknown causes has been increasing over the period under review”, (page 15). The report recommended a need for enhanced staff training, enhanced budgetary and political support for appropriate skills and technology together with the need for improvement in stakeholder engagement, (page 19). This study observed existing paucity of personnel within KWS and other state agencies dealing with environmental conservation like NEMA. This was voiced by Mwandoko, an Assistant Director and head of a conservancy at KWS in that:

There are a number of issues that may need to be addressed in KWS. For example, timely and increased budgetary support. We need more officers on the ground. It is unfortunate that some of our people (officers) are also involved in illegal activities. Also if a land use policy and spatial plans frameworks would be fast tracked that would make it a bit easier for us. Adequate empowerment of our institutions is required (Respondent E<sub>1.4</sub>).

Mwandoko’s experience was one where state agencies involved in environmental conservation lacked adequate institutional capacity or empowerment due to irregular and inadequate financial allocation, insufficient personnel and unethical practices by institutional officers. As such, Mwandoko’s voice indicated the need to increase the number of staff who are qualified and committed to ensure that KWS and other state and

county agencies be more responsible for the matter of sustainable environmental protection. With state officers involved in activities that are illegal and destructive to the nature they are meant to protect, for instance, poaching as regretted by Mwandoko, the respondent voiced lack of moral commitment among institutional officers. Moreover, the officers' involvement in environmentally destructive activities showed inaptitude in their duty to embrace biospherical egalitarianism as advanced by Kopnina, (2014). This is a collaboration of failure to appreciate ecological systems and lack of effective participation in conserving the same. It is also an indication of lack of ethical life, where human beings are needed to extend the circle of compassion of living in harmony with other ecological elements for the sake of 'peace with nature', Schweitzer (1875-1965).

Dalton, the timber dealer in Embu County voiced institutional incapacity as below:-

I wish the institutional officers on environment would be more vigilant. They have never seen the ground. Maybe they are not enough to manage the whole county. I cannot remember the last time they engaged us in protection. They should involve us to achieve sustainability. I think we know better what is on the ground. The government should embrace a bottom-up approach instead of top-down on matters to do with environmental protection, (Respondent L<sub>24.4</sub>).

Dalton voiced two aspects of incapacity: inadequate personnel, in state agencies and lack of community Conscientization and involvement in sustainable environmental protection. He called for the need to increase the number of personnel in the agencies that are involved in environmental conservation and protection. Also, citizens' involvement, as critical partners in sustainable environmental protection, should be embraced as an attempt at a bottom-up approach. This approach increases community ownership of the environment. Similarly, Dingima, a NEMA County Director in Mombasa County added but with a suggestion that:-

NEMA as a lead government agency in environmental management should be made autonomous. By such, it will be drawing its timely and increased financial allocation directly from the exchequer. There should even be a minimum percentage of the GDP allocated to the environment. By such, we would have more officers on the ground, vehicles for mobility and an expanded stakeholder engagement. NEMA should even get back its prosecutorial powers. People would be more sensitive to the environment and increase compliance. We need to make contraventions more punitive, (Respondent B<sub>1,4</sub>).

Dingima highlighted a preference that with increased autonomy for NEMA and allocation of resources would enable the agency to hire more personnel, acquire more equipment including vehicles. Moreover, NEMA would undertake more citizenry engagement thus enhancing Conscientization. With increased personnel, sustainable environmental protection guidelines' public compliance would be enforced. To Dingima, heightened punishment measures for non-compliance and more stringent measures for environmental protection would promote sustainable environmental protection. Stiffer penalties stiffer than the ones stipulated (in sections 75-77 of EMCA 2015) would deter citizens and any other person from engaging in environmentally degrading activities.

The respondents regarded **Conscientization of citizens on sustainable environmental protection** as a way of creating and improving citizenry consciousness on environmental issues and their contribution to sustainable environmental protection. According to Franz Brentano, every conscious act involves a certain kind of immediate awareness of itself. As such, all conscious experiences are in a certain fundamental sense 'self-intimating'. This level of consciousness constitutively involves awareness of that very awareness, thus his famous expression of "awareness of awareness" thesis. To this end therefore, the Brentanian theory of "awareness of awareness" posits awareness as a mental content that is embroidered through phenomenological experiences, (Montague, 2017).

Although the Brentanian notion of “awareness of awareness” is a trait that humans share with animals, this study adopted the notion of human consciousness as the awareness that is conceptualized in terms of human response in respect to their phenomenological experiences manifest in human actions with resulting impact on the object of consciousness. The Brentanian notion of consciousness provided an analysis of consciousness that was fundamentally significant in explaining what constitutes “self-intimating” nature of human experiences as representational and relational in human-nature co-existence. This understanding connects human environmental experiences to a consciousness that allows human beings (Kenyan citizens in the case of this study) to appreciate the ethical claim for equality in intrinsic value across human and non-human nature, (Steele, 2011). Such would enable Kenyan citizens to exhibit environmental ethics and responsibility which reflects intergenerational justice, the main focus in environmental citizenship. This forms the constituted relational clarion call in sustainability and development, incubated within positive attitudes towards good health and sustainable environmental protection as advanced by Mwaka et al (2013).

The basis for invoking the idea of human consciousness (awareness) was premised in a belief that human beings respond to risks depending on their level of knowledge and awareness or ignorance, (Buratti and Allwood, 2018). This belief explains why environmental degradation has some causal relation to human action or inaction. Thus, sustainable environmental protection as a phenomenological experience has somehow a link with the level of human consciousness. Accordingly, Chalmer (1997) expounded on the Brentanian notion that awareness is the state of being conscious of something, where one has the ability to directly know and perceive, feel and be cognizant of events, (free

encyclopedia, 2019). As such, one obtains the information which bears in the direction of his or her actions.

The notion of Conscientization is further described by Jamal (2017) as a process of learning to perceive political, economic and social contradictions. Thus, Conscientization empowers human beings to take actions against any adverse aspects of reality. In the context of sustainable environmental protection, human beings are expected to act as responsible beings, who are conscious about environmental issues, and act with deep affirmations that respect the challenging and pernicious realities of environmental degradation, (Hodgson et al, 2018). The phenomenon of environmental degradation in Kenya, as it presented itself, required sustainable environmental protection measures ingrained in human actions which are informed by human awareness about issues like climate change, environmental hazards, among others. The observed incessant environmental degradation level in Kenya was indicator of low level of consciousness on environmental issues particularly on the negative impact of human actions on the environment as observed in disfigured land surface, scenic and biodiversity disruptions, (Shrinkhal, 2019).

Deforestation, solid waste mismanagement, air and water pollution, interference and destruction of natural habitat for wildlife and human development on wetlands and other riparian lands are observed as destruction to environment. These and many others have caused great human hazards and compromised the needs of future generations. Kenyan citizens had involved themselves in such environmentally destructive activities oblivious of their adverse social and economic effects. Thus, the development of environmental citizenship in Kenya should start with acquisition of phenomenal awareness that involves

elements of perceiving, knowing, feeling, or being conscious of the events, objects, thoughts, emotions, and other sensory patterns, (Hasa, 2016). Such would add value to consciousness on environmental matters that directly and indirectly affect and degrade the environment. This would arguably be a consequence of Conscientization which is understood as the phenomenal awareness, a process that enables human beings to act responsibly through the exercise of prior consciousness.

This view had earlier found expression in the words from Thomas Reid (1710-1796), founder of the common sense school of philosophy. In his Theory of Human Action, Thomas Reid advanced that human beings would only have power over their actions if they are endowed with appropriate will and understanding. Such leads to a level of consciousness that makes them act in the interest of sustainable environmental protection. This would be a demonstration of human actions directed by motives and reasons for responsible actions.

Figures 2.8 and 2.9 were an indication of what citizens voiced as lack of consciousness and awareness of the adverse impact of human actions on the physical environment. It was an illustration of irresponsible human action showing how solid waste was mismanaged by Kenyan citizens in Nairobi County. The illegal dump site was in contravention of the EMCA {section 87, sub-section (1)} on waste management. It presented situations of how respiratory human infections and other diseases brew as a result of air and water pollution. In this survey, all the institutional officers and over 90% of local citizens interviewed, strongly and unequivocally recommended Conscientization as a measure for mitigating such appalling human behaviour. Dodman, director of Environment in the MoEF outlined this, preferably stating that:-

Although as a ministry we are trying, there is need for more public awareness and stakeholder engagement. People need to know the benefits of environment and really appreciate their contribution to its protection. We need minimum percentage coverage of environmental issues by our media. Can environmental education be a compulsory subject right from primary? Community or local environmental clubs should be institutionalized and make membership and participation a requirement for public service like chapter six of the institution. These measures would make the environment part as parcel of our national character and integrity, (Respondent A<sub>4</sub>)

Dodman underscored that public institutions would be necessary in creating citizenry awareness of the benefits of a sustainably protected environment. That was why he highlighted several avenues through which citizenry consciousness on environmental issues, commitment to and participation in sustainable environmental protection would be enhanced. Such included instituting legal frameworks by which the media would cover more environmental content, environmental education made a compulsory subject at all educational levels and where access to public services would require citizens' demonstration or proof for involvement in environmental conservation. This is analogous to the Brentanian notion of "awareness of awareness".

As noted earlier, Funke (2017) wondered: *How Much Knowledge Is Necessary for Action?* He asserted knowledge as a precondition and a competence in desirable human action. Funke's prescription makes knowledge a significant ingredient for human action notwithstanding the reverse, that is, action similarly produces knowledge. But what kind of knowledge would that be? Or is it always the case that human beings would always act on what they know? This would not be true from the akrasian point of view. However, it is averred that the more awareness or knowledge that citizens and institutional officers had about the benefits of a clean and healthy environment, the greater would be the impacts of such awareness on their actions that are required for sustainable environmental protection. This awareness would be raised through an increase in stakeholder

engagement like community training, making environmental education a compulsory subject in all levels of education, training and courses, and local community environmental clubs.

Dodman proposed a probable legal requirement that the media preserves a certain coverage percentage for environmental issues. This study noted that in 2014, Kenya government through the Communications Authority passed a broadcasting regulation requiring broadcasting stations to ensure 40% local content in TV and radio broadcasts. Citizens can now enjoy local cultural expressions even in local languages thus promoting the diversity of cultural expressions and knowledge thereof, (UNESCO, 2016). In the same vein, a local content Quota Compliance in terms of a minimum media coverage percentage on sustainable environmental protection issues could be drawn in Kenya. This would go a long way in creating awareness and making the environment, and its required sustainable protection, part and parcel of a national character and integrity in Kenya. To Nyerere, a sand harvester in Kisumu County asserted that, increased awareness was necessary to improve citizen's knowledge on the benefit of a clean and healthy environment, in thus:-

Sometimes people don't understand the importance of protecting the environment. They think the Government protects forests, rivers and others for the sake of it. We need more education on environmental protection. Can environmental studies be compulsory in schools? So that learners or generally people can understand environmental issues better. Environmental clubs can be mandatory in schools and communities. Even radio broadcasts and public barazas need to have a bigger coverage on the environment, (Respondent L<sub>18.4</sub>).

Nyerere said that the general citizens had not acquired adequate knowledge on the importance of environmental elements like forests. To him, the Kenyan citizens had not internalized the ethical claim for an equality of intrinsic value across human and non-

human nature, as advocated for by Steele (2011). Nyerere underscored citizenry Conscientization on the benefits and need for sustainable protection of environmental elements like forests and rivers, among others. To him, making environmental studies compulsory in schools, having community environmental clubs, widened media coverage and public forums on environmental issues, would significantly increase citizens' empowerment and hence their commitment to and participation in sustainable environmental protection. Such attempts would be in tandem with the view of Wangari Maathai's (Nobel Laureate and champion of the Environment) who had a conviction that "You cannot protect the environment unless you empower people, you inform them, and you help them understand that these resources are their own, that they must protect them.", (Bruno & Wallace, 2019). This is the kind of information, understanding and empowerment alluded by the proponents of Conscientization.

The necessity for **motivation for sustainable environmental protection in Kenya** expressed as key to eliciting citizens' interest, commitment and participation in sustainable environmental protection. Motivation is generally a mechanism through which people are influenced to act in a desired way. It constitutes intentional measures put in place to create a high level of enthusiasm in order to achieve organizational goals. The motivational mechanism is intended to manipulate people's behavior in which they exert their best of efforts; their inputs such as loyalty, commitment, enthusiasm, among others, in achieving the organizational goals, (Haque et al, 2014).

Vroom (1964) in his expectancy theory of motivation described a perception for the probability that action or effort will enable a desired outcome. As such, individuals make

choices of actions depending on their preferences of outcomes and their probability to achieve these outcomes. It is a momentary belief in the likelihood that a particular act will achieve a particular outcome, (Haque, 2014; Kiatkawsin & Han, 2017). Simply put, actions bear outcomes and it is upon the expectation of desirable outcomes that people will act. Hence, motivation is likely when a clearly perceived and usable relationship exists between performance and outcome, and the outcome is seen as a means of satisfying needs, (Haque, 2014; Baumann & Bonner, 2017). Within the development and acquisition of environmental citizenship, citizens should be made adequately aware of the benefits of sustainable environmental protection. Such would make them conscious of the need to act and relate responsibly within an environment. A clean and healthy environment is both a constitutional right to every citizen with social, economic and intergenerational benefits (the outcomes). This alone ought to motivate citizens to act responsibly in order to achieve the benefits that are concomitant with the acts.

Brameld (1904-1987) and Counts (1889-1974) similarly emphasized the same in their reconstructionist perspectives urging educationists and practitioners of education (policy implementation strategists on sustainable environmental protection together with other government agencies) to include motivation in the human capacity development for sustainable environmental protection. In this regard, Kenyan citizens require opportunities to participate, own and appreciate the benefits of environmental protection. Even educational practices (formal and non-formal) need to inculcate in learners and citizens skills that en-gender their engagement in improved and expanded clean and sustainable technology. Clean and sustainable technology is a key foundation of sustainable environmental protection, (Zorpas & Saranti, 2016). It is the accruing benefits

of a sustainably protected environment that expectedly elicits motivation for citizenry commitment and participation in sustainable environmental protection practices. Kenyan citizens should be instilled with intrinsic values, attitudes and skills for ownership, commitment and participation in sustainable environmental protection. This need was captured in quite a number of respondents' voices. Munyito, Director of Environment in Mombasa County Government voiced his experience in respect to a desire to enhance sustainable environmental protection in Kenya, saying that:-

There is so much that needs to be done in this country if we are to achieve any significant strides in conserving our environment. For instance, national awards to applaud companies and local citizens who stand out in environmental protection, a presidential award on environment, tax exemptions on sustainable or clean technology and equipment. When people understand the benefits of a protected environment, they will be involved in protecting it. They will even significantly change their attitudes, (Respondent I<sub>1,4</sub>)

Munyito highlighted the need for motivation measures such as presidential awards and tax exemptions for both corporate and individual involvement in environmental protection. He also emphasized on the necessity for citizenry awareness of the benefits of a clean and healthy environment. To Munyito, such awareness would help change citizens' attitude towards the environment and even enable their commitment and participation in sustainable environmental protection. NEMA as a lead agency in sustainable environmental conservation and protection needed to have a way of appreciating and recognizing citizens and business entities that have made direct efforts in mainstreaming environmental protection and sustainability issues. This could be done at both levels of governance: county and national governments. This would be a great motivation to individuals and companies to increase their involvement in sustainable environmental protection and corresponding technology and innovation.

Presidential medals, decorations and orders of Kenya are awarded "in recognition of outstanding or distinguished services rendered to the nation in various capacities and responsibilities", (*The Kenya Gazette*, 88, 2002). The presidential recognition in sustainable environmental protection would be a coveted motivation to all citizens to develop effective environmental ethics and involvement.

In reference to the call for tax exemptions by Munyito, it was observed that the government gives tax exemptions in a variety of practices, services and products. As an initiative for encouraging Kenyan citizens, government agencies and business entities should be innovative as well as be involved in green or clean technologies, the Government should provide an Investment Tax Allowance (ITA) for purchasing green or sustainable technology equipment / assets and an Income Tax Exemption (ITE) for providing clean technology services. Under the Green Technology Tax Incentive, there is Green Investment Tax Allowance (GITA) for Assets, GITA for Projects, and Green Income Tax Exemption (GITE) for Service Providers. Such would go a long way in appealing to Kenyan citizens and business entities to get involved in clean technology. This would boost efforts towards sustainable environmental protection. Nyori, a 28-year old university graduate from Turkana county, who was interviewed while transporting charcoal, mentioned the need for government support among other measures for sustainable environmental protection as below:-

If the government gives support to alternative economic activities the better, increasing allocation and access to youth and even a national fund for sustainable development like clean technology would support our youth in creating ideas on conservation and at least boost our participation in conserving the environment, (Respondent L<sub>22.4</sub>).

Nyori's voice was yet another urge for the establishment of government funds that would act as motivating desire for citizenry involvement in sustainable environmental protection. It would also enable citizenry engagements in environmentally sustainable activities. Yolaconda, a KWS assistant director at Nairobi South Conservancy, had similar proposal when he mentioned, among others, that:-

There is a need for more government support to local citizens. For instance, they should increase and strengthen youth and women funds for alternative economic activities. Allowing a national dialogue on conservation in Kenya, tax exemptions on stakeholder operations on matters of conservation being undertaken by agencies like AFEW, (Respondent E<sub>3,4</sub>).

Yolaconda voiced the need for government support to citizens in terms of support funds. These funds would support the creation of innovative and sustainable economic activities and development. Such a motivation would promote citizenry commitment and participation in sustainable environmental protection, especially the youth and women. This study noted that Kenya has a Youth Enterprise Development Fund which is a state corporation, gazetted in 2006 and transformed into a State Corporation in 2007. It focuses on enterprise development as a strategy to increase economic opportunities for, and participation by Kenyan Youth in nation building. As such, it seeks to create employment opportunities for young people through entrepreneurship where they would become job creators and not job seekers. It would do this by providing easy and affordable financial and business development support services to youth who are keen on starting or expanding businesses, ([www.youthfund.go.ke](http://www.youthfund.go.ke), 2016). Also, there is a Women Enterprise Fund. This is a semi-autonomous government agency in Kenya established in 2007 to offer accessible and affordable financial and innovative business support services to Kenyan women to transform their livelihoods through resource mobilization, collaborations, and partnerships, (Kenpro, 2019).

In response to Nyori's and Yolakon's voices, it would require that four aspects are put as basis for the access and disbursement of these two funds: that the livelihood or economic activity, collaboration, partnership involved or supported was environmentally viable and sustainable; that the members belonged to and are active members of a local community environmental club as suggested above; more funds be allocated to youth or women groups if they are involved in an environmentally-innovative-and-creative activity (with a certain percentage which could be non-refundable or would not attract any interest or repayment); and that these groups should form a strong stakeholder engagement partners in sustainable environmental protection platforms and forums of disseminating information on human activity impacts on the physical environment and solutions. Availability of such supportive funds, disbursed on the basis of the outlined environmental perspectives, would provide great motivation for citizenry to participate in sustainable environmental protection activities. Mwinduki, an environmental officer in Embu County, responded by suggesting that:-

Several measures might help in protecting our environment. May be a specific act of parliament on clean technology. A national fund on clean technology and innovation, tax exemptions on such efforts like clean energy projects and equipment. This would even motivate people's participation, (Respondent C<sub>14.4</sub>).

Just like Nyori and Yolakon, Mwinduki suggested measures that would promote citizenry commitment and participation in sustainable environmental protection. These measures included: An Act of parliament, a national fund on clean technology and tax exemptions on clean energy projects and equipment.

Kenya has two acts of parliament which were of great interest in this concern: The Science, Technology and Innovation Act, No. 28 of 2013 and the Energy Act, No. 1 of

2019. The Science, Technology and Innovation Act, No. 28 of 2013 established the National Council of Science, Technology, and Innovation (NACOSTI) in Part II whose functions are outlined in section 6 of the Act. Of critical interest was functions (a) and (d) which are to (a) develop, in consultation with stakeholders, the priorities in scientific, technological and innovation activities in Kenya in relation to the economic and social policies of the government and the country's international commitments and (d) to liaise with the National Innovation Agency and the National Research Fund to ensure funding and implementation of prioritized research programs. In light of the observed incessant environmental degradation in Kenya, research support programs on environmental protection alternatives should be accorded national priority. Such support funds would act as motivation for citizenry involvement in research for clean technology and practices towards sustainable environmental protection.

Accordingly, it was observed that the phenomenon of environmental degradation in Kenya requires an in-depth attention premised on specific legal and institutional attention namely, the enactment of legal frameworks on clean technology (Clean Technology Act) that embraces the opinion expressed above. The Clean technology Act of parliament, if enacted, would lead to creation of a clean technology authority or even a commission for national sustainable development fund focusing specifically on innovation, support and incentives for sustainable environmental protection.

Finally, the respondents preferred **integration pragmatism and formalism in sustainable environmental protection**. This was a reflection on the practice approach versus policy approach perspectives. To the advocates of place-based leadership, an

enhanced stakeholder engagement is a necessary undertaking if institutional efforts on sustainable environmental protection are to be effective, either in the short or in the medium terms. The Kenyan citizens at the county and national levels are basically the primary stakeholders in sustainable environmental protection. Primary stakeholders are by definition the people or groups of people who are directly affected, either positively or negatively by actions of agency, institution, or organization mandated with the task of sustainable environmental protection.

Stakeholders are literally people with vested interests in the efforts put by organization, based on anticipated benefits. The more they stand to benefit from it, the stronger their interest becomes. Consequently, the more heavily they get involved in the effort of the organization, the stronger their interest grows as well, (KU CommHealth, (2019). A formal or policy approach in governance involves a rational choice and neo-institutionalism in respect to managing and implementing public issues at multiple scales, (Arts, et al, 2013). In the case of the ecocentric goal of education and policies on sustainable environmental protection, the state determines and oversees the design, strategies, pace and space of implementation with only a tail-end involvement of primary stakeholders. In this top-down policy implementation approach, emphasis is put on hierarchical control within government structures.

The practical or pragmatic approach on the other hand is a bottom-up implementation strategy. It constitutes collaborative efforts where stakeholders are engaged in “a local area to address problems of local interest”, (Koontz & Newig, 2014). A keen observation on these two approaches manifests the difference between top-down and bottom-up

implementation strategies of policies. The top-down implementation strategy reflects aspects of the policy approach while a bottom-up implementation strategy would be called the practice approach. The key element of the practice approach incorporates citizens in the projects' activities that are environmentally sustaining including the benefits that accrue to them as directly as possible. Muindu, Director of Environment in Narok County Government, would wish that the citizens be involved in environmental sustainability as much as possible by saying:-

The agencies need to involve and ensure that benefits of environmental projects are realized by the citizens. For instance, the penalties for carbon dioxide levy per ton of carbon should help the public in energy-saving innovations, reward lower fossil consumption and support community-based forestry practices, (Respondent I<sub>4.4</sub>).

Muindu expressed need to involve the citizens in environmental protection programs. In such, they would participate in environmental protection as they benefit from the benefits. He emphasized that citizens would be committed to participate in environmental projects that they directly impact and benefit from. Muindu and others called for a pragmatic approach where government agencies involved in sustainable environmental protection should provide the information, infrastructure and other resources and a 'large space' for community benefit as their motivation. Such would raise their interest and commitment in the projects (where local citizens participate and obtain the greatest share of the benefits). Apart from the carbon dioxide levies imposed on carbon emitting entities being used to promote clean energy and technology initiatives, they also propel citizens to desist from engaging in activities that are carbon-destructive to the physical environment and human health. Mburunge, NEMA County Director of Environment, Nairobi County, alluded to the same view that:-

There is need to engage more in conservation projects where the citizens are directly involved and benefitting. They own and effectively participate. For example, community projects like recycling plants for solid waste to produce biogas for use by local households and water treatment plants at least at the ward level, (Respondent B<sub>3,4</sub>).

Mburunge echoed need to involve citizens in sustainable environmental protection projects that directly benefit them. People need to see and be involved in real and practical efforts in conserving and sustainably protecting the environment. Projects like recycling plants for solid waste would have tremendous and multiple benefits to the environment and improve human livelihoods. Use of biogas, which is eco-friendly, enables citizens to avoid other sources of energy like firewood, charcoal and petroleum gas which are destructive to the physical environment. As a local community project, biogas would be cheaply available and thus increase local citizens both disposal income and purchasing power. Community water treatment plants ensure that citizens have access to clean water thus avoiding water-borne diseases. Responsibly recycled solid waste would ensure clean and healthy environment. All these would be of direct benefit to citizens. Phyllison, a NEMA Environmental Officer in Machakos County identified typical examples of projects that would benefit a larger citizenry and institutions as below:-

To succeed against the war on climate change and environmental destruction, we need community projects where citizens can practically see the benefits. Projects like greening public spaces and facades. Growing a cycling culture where people can cycle to the market and work and such like, (Respondent C<sub>3,4</sub>)

Phyllison gave examples of community-based projects and human activities that are both environmentally friendly and are beneficial to citizens. These include: greening open public spaces to improve the atmospheric carbon cycle, oxygen circulation for good human health and the aesthetic value of the human environment; citizens cycling to work

and market places to avoid or reduce carbon emissions to the atmosphere and improve human physical health.

Even with the benefits as highlighted, this study appreciated that greening public places and facades requires huge budgetary allocations. With competing national and county needs, adequate funds may not be readily available. Also, business entities may not have capacities to install cutting edge facilities like showers and changing rooms. This notwithstanding, gradual attempts towards this and bit-by-bit financial allocations, coupled with public-private partnerships would eventually bear required benefits. The business entities can start in bits by installing mobile bike racks to give employees more reason to cycle to work. Still, the government can make bicycles tax-free and employers can spread the cost of acquiring a bicycle by employees. Ndiuni, a local citizen in Embu County recommended citizenry involvement in sustainable environmental protection projects as an effective venture when he pointed out that:-

It is necessary that conservational projects of direct benefit to people like storm water recycling, Greenfields, and wetland projects be emphasized. We need to create public awareness on e-governance to enable reduction in paper use and less travelling. Let's promote and publicize the 3Rs: Reduce, Reuse and Recycle and make eco-houses affordable in Kenya, (Respondent L<sub>30,4</sub>).

Ndiuni's recommended measures towards sustainable environmental protection in Kenya included: involvement of citizens in community projects like water recycling, green fields on wetlands, reduced use of paper and reduced traveling and engagement in e-governance and eco-housing. The idea of the 3Rs is not a new phenomenon in Kenyan context but it requires enhanced public awareness creation and adoption. Although the Kenyan government had banned the use of plastic bags, (NEMA, 2017) there are still observable heaps of plastic and other bags in towns and cities (see Figures 4.4.2e and 4.4.2f). The

consequence of this often reflected in flooding in towns due to blocked sewage lines when such plastic bags and other wastes are irresponsibly dumped in city streets as shown in figure 5.3.1 below:-

**Figure 5.2: A Flooded City Street in Nairobi due to blocked sewage lines by littered waste**



Source: Xinhua | 2018-05-01 19:12:35

Citizens dropped their solid waste in the streets from where they would be washed away, into sewage lines. Such wastes block sewage lines that end in flooded roads. This, as mentioned earlier, exposed citizens to water-borne diseases due to the created unhealthy environment. Government agencies needed to emphasize the 3Rs approach, together with the support of the print media, electronic and social media. This would reduce environmental pollution. Moreover, Eco-friendly houses are energy-efficient houses that would reduce energy consumption. They therefore, as much as possible, limit the emission of greenhouse gases. Usually, wood and lime are the most commonly used materials. Lime is nontoxic compared to certain paints and coatings. Hence, apart from eco- houses being energy-efficient, they also enhance human health due to the use of nontoxic materials: wood and lime. Citizens would also be involved in afforestation as a measure to provide wood for eco-housing.

These proposed government intervention measures would require citizenry willingness as primary stakeholders. The willingness of citizens in the projects is the basis for inculcating the sense of environmental ethics, which is quintessential for effective citizen engagement. The integration of the practical approach in sustainable environmental protection however cannot stand on its own. It has to proceed *pari passu* with well-designed formal education. The next section is appraisal of the constitutive conditions for sustainable environmental protection in Kenya, in the light of the tenets of environmental citizenship.

### **5.3.2 The Constitutive Conditions for Sustainable Environmental Protection in Kenya.**

Section 5.3.1 reflected on the respondents' lived experiences and on suggestions of alternative measures for sustainable environmental protection in Kenya. The outlook of the measures was tailored towards empowering Kenyan citizens to be more conscious and committed participants in sustainable environmental protection. Such a move would provide for a clean and healthy environment, which is not only within constitutional provision but also a fundamental right to every Kenyan citizen as bedrock for intergenerational justice. Consequently, the desire to provide a comprehensive backdrop for the call of sustainable environmental protection in light of environmental citizenship was highlighted. The respondents' suggested alternative measures towards sustainable environmental protection can only actualize this expected desire within certain immanent and deliberate provisions. These provisions were the necessary conditions within which a process could achieve its objectives and thus referred to as constitutive conditions, (Butler, 2012).

R.S Peters (1966) in his textbook, *The Concept of Education* proposed criteria or conditions against which to match the process of education. These are the constitutive conditions within which the meaning of education is effectively understood and the goals of education would effectively be realized, (Peters, 2010; Elechi, 2014). There are alternative measures discussed in section 5.3.1 that have been identified to ensure effective implementation of the ecocentric goal of education and policies on sustainable environmental protection. Analogous to R.S. Peters' conditions for the concept of education, this study considered the following as constitutive conditions that emerged from this study. They include: transformative education in terms of its content and pedagogical approaches; expansion of Conscientization platforms, embracing place-based leadership and national enculturation in respect to environmental ethics and practices.

First, the need for transformative education in terms of its content and pedagogy was envisaged by Jordan and Kristjansson (2017). Basically, a transformative approach in educational practices aims at producing responsible thinkers through practical, comprehensive and solution-based interactions with their environment. This enables learners to acquire beliefs, attitudes, skills and interpretative abilities. It is mixture of existentialist and progressivist perspectives, (Mezirow, 2018). With this approach, which should be integrate elements of both formal and non-formal education, learners and citizens would acquire the practical and fundamental environmental ethics that govern how they relate to each other and nature. As such, they would exhibit environmental citizenship that addresses human-nature interrelationship and fosters relevant ecological perspectives, hence facilitating holistic as integrative understanding of sustainability.

Consequently, environmental consciousness would be engrained at all levels of education with environment clubs made an integral part of the co-curricular activities in all schools.

Pedagogical approaches, both in formal and non-formal educational practices, would therefore provide expansive environmentally sensitive learners and citizenry. For instance, field trips would be re-emphasized. Through such, learners and citizens would appreciate the benefits of a sustainably protected environment. They would also internalize the need for participation in sustainable environmental protection practices. In addition, all the curriculum content would have elaborate environmental relevance and implications. Second, Conscientization as a process that leads to development of critical character tradition where people are sufficiently empowered to correct mistakes and misunderstandings is here called to deepen affirmations and to point out aspects that are effective within the context of a really challenging and oppressive situation, (Hodgson et al, 2018). Incessant environmental degradation, as observed in Kenya, is a really challenging and oppressive situation considering the risks it exposes to her citizens. Therefore, Kenya as a nation requires expanded Conscientization platforms on environmental issues. These would be forums for raising citizenry consciousness on environmental issues and would energize commitment to participation in sustainable environmental protection.

Conscientization in this respect may begin as a structured national debate on environmental destruction and the need for sustainable protection. Public administrative barazas and school co-curricular activities: games, sports, drama and music festivals, trade and engineering fairs, among other activities, would need to repeatedly be involved

in themes on sustainable environmental protection. Besides, Kenya would need to have national environmental anthem and constitutionalized national environment days in which presidential awards and recognition to outstanding environmentalists are declared. Further, to enhance Conscientization, there would be need for at least a minimum allocation of media quota coverage on environmental matters, premised on a legal framework. This would enhance citizenry consciousness on environmental issues and would enable the development and execution of values, attitudes and skills on sustainable environmental protection.

This proposal was premised on the social learning theory that posits that individuals (citizens in the case of this study) learn by “paying attention to and emulating the attitudes, values and behaviors of attractive and credible models”. These models are basically leaders who are attractive because they focus on the development of others while at the same time placing the good of those led over their own interests, (Walubwa, 2010). Presumably, if citizens are positively shown the significance of environmental protection by a demonstrated proper public leadership, they would definitely participate in sustainable environmental protection in Kenya.

Third, embracing place-based leadership was identified as a necessary condition. Quite a number of Kenyan political and public leaders had not helped eliminate environmental destruction. In fact, instead of exemplifying environmental ethics they involved in unethical activities like land encroachment and other destructive activities as indicated in Respondents J<sub>4.3</sub>, L<sub>5.3</sub> L<sub>18.3</sub>, L<sub>10.3</sub> and by Leitao (2016). Kenya therefore, required public leaders who would be on the frontline in sustainable environmental protection. They would leaders as described in ancient Greek: people with knowledge and moral strength,

who act according to common good and have a duty to facilitate citizenry acquisition of desired techniques and skills for sustainability, (Lüdert, 2017). These are the tenets of place-based leadership as advocated for by Hambleton (2017), Leitao (2016) and (Lüdert, 2017) and others. The tenets of place-based leadership as explicated in section 5.3.1, would necessarily enable leaders citizenry influence towards sustainable environmental protection. This was because Place-based leaders are required to have the aptness to act for common good of the society. They are advocates for transformational changes in the context of social needs and aspirations, and to advance the states of collaboration, promote a stronger sense of common and democratic social purpose, and community empowerment, (Hambleton, 2015; Worrall & Kjaerulf, 2019; Sotarauta & Suvinen, 2019). Similarly, since sustainable environmental protection requires paramount elements of intergenerational justice and greater good of the society, public leaders had no choice but to promote the same and hence the necessity of place-based leadership.

Finally, enculturation was identified as a constitutive condition for sustainable environmental protection in Kenya. Unlike socialization: integration of an individual into his or her society, Enculturation as understood by Herskovits (1964) is an ordered process of psychosocial transmission and transmutation. In this, the individual acquires capacity to think and devise new forms of behaviour in response to situations for which the patterns of his or her culture are inadequate, (Shimahara, 1970). It involves deliberate choice among alternatives. This is so because in the process of enculturation, the individual examines alternative possibilities even as he or she is reconditioned to new modes of thought and conduct (Ibid.). In this sense therefore, enculturation has both behavioral and values dimensions, (Alamilla et al, 2017). Thus, in an enculturation

process, individuals are adapted through acquisition of ideas, beliefs and practices that are appropriate to their surrounding in respect to deliberate stipulation, (Grusec & Hastings, 2007). In the context of this study, development and execution of environmental citizenship would be the deliberate stipulation.

As it is, the implementation of the ecocentric goal of education and policies on sustainable environmental protection had not been able to develop citizenry values and skills that constitute environmental ethics. Through enculturation, citizens would be transmuted to adopt attitudinal and behavioral change in response to the call for sustainable environmental protection; involving in alternative practices that would actualize the call. Enculturation however, would not work in isolation. Thus, its net effect would embrace the other three conditions. Conservation would be a “way of life” for Kenyan citizens. Hence, the Kenyan society would be encultured to respect the rule of law in terms of: adhering to land use guidelines; abhorring unethical and other corrupt tendencies within environmental management practices; adopt a cycling culture that significantly reduces air pollution, regular tree-planting exercises, and adopt waste management directives, among others. By such, Kenyan citizens would be promoting harmonious human-nature interrelationship that is governed by holistic and integrative understanding of sustainability.

#### **5.4 Summary**

This chapter discussed issues that emerged in response to the third and fourth research study objectives. The findings and discussions were on the phenomenological inferences on institutional reports and voiced experiences of Kenyan citizens in respect to the

underlying factors for incessant environmental degradation notwithstanding the existence of ecocentric goal of education and policies on sustainable environmental protection in Kenya. The factors underlying incessant environmental degradation from the institutional officers' perspective included: Impact of Dishonesty on Environmental Sustainability policies in Kenya; effect of perceived irrational remuneration; effect of technical incompetence, incapacity and inadequate workforce; procrastination and insufficiency of funds; micro-management and breach of policies; low level of Conscientization and mainstreaming of environmental protection issues; effect of a lacuna and ambiguity in specifications; and the flux and uncertainty in coordination of environmental policies. On the other hand, the Kenyan citizens expressed: high rate of unemployment; economic and operational challenges; low level of Conscientization on the consequences of human actions on the environment; political patronage; dishonest malpractices; and lack of role models in public governance, as factors that underlie incessant environmental degradation in Kenya.

The analysed themes for the respondents' suggestions on alternative measures to ensure sustainable environmental protection were: empowerment and capacity increase of environmental institutions; citizenry Conscientization on sustainable environmental protection; motivation for sustainable environmental protection in Kenya; and integrating pragmatism and formalism in sustainable environmental protection in terms of practice approach versus policy approach. The constitutive conditions necessary for the realization of sustainable environmental protection included: Transformative education in terms of its content and Pedagogical approaches; Expansion of Conscientization platforms, Embracing place-based leadership and national Enculturation in respect to

environmental ethics. By such, Kenyan citizens would develop environmental ethics thus embracing environmental citizenship that would exhibit knowledge, values, attitudes and skills as a prelude to commitment and participation in sustainable environmental protection. The next chapter contains: summary, conclusions and recommendations from the study.

## **CHAPTER SIX**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **6.1 Introduction**

This chapter begins with the summary of the entire research study on the effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya, from chapter one to five. The chapter thereafter presents conclusions drawn from the study prior to making recommendations from the study findings and for further research.

#### **6.2 Summary of the Study**

The first objective sought to explore the nature of the ecocentric goal of education and policies as measures to ensure sustainable environmental protection in Kenya. This was to find out if citizens and institutional officers were aware of existence and purpose of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. All the citizens and institutional officers were not aware of ecocentric goal of education. Issues and practices on environmental protection were optional in schools. The citizens were unaware of ESD and natural environment policies while the institutional officers were aware of the policies but did not know the specifics.

The second objective of the study sought to assess the effectiveness of the implementation of the ecocentric goal and policies on sustainable environmental protection in Kenya. Institutional reports (Media, KFS, KWS, NEMA, NECC reports), institutional officers' and local citizens' dialogue responses indicated how Kenyan citizens have participated in environmentally destructive activities. They observed that the implementation of the ecocentric goal of education and the ESD and natural

environment policies, in respect to sustainable environmental protection, have not been effective.

With observed environmental degradation in Kenya, the third objective sought for the underlying factors for the incessant environmental degradation despite the existence of an ecocentric goal of education and policies on sustainable environmental protection. in Kenya. Responses from institutional officers and reports reduced the themes as follows: Impact of Dishonesty on Environmental Sustainability policies in Kenya; effect of perceived irrational remuneration; effect of technical incompetency, incapacity and inadequate workforce; procrastination and insufficiency of funds; micro-management and breach of policies; low level of Conscientization and lack of mainstreaming of environmental protection issues; effect of a lacuna and ambiguity in specifications; and the flux and uncertainty in coordination of environmental policies.

The other themes voiced by local citizens for incessant environmental degradation in Kenya included: high rate of unemployment; economic and operational challenges; low level of Conscientization on the consequences of human actions on the environment; political patronage; dishonest malpractices; and lack of role models in public governance.

The fourth objective was in pursuit for alternative measures for effective implementation of the ecocentric goal of education and policy strategies for sustainable environmental protection in Kenya. In this pursuit four themes emerged: empowerment and capacity building of the existing environmental institutions; citizenry Conscientization on sustainable environmental protection issues; enhancing the level of motivation for sustainable environmental protection in Kenya; and the integration of pragmatism and

formalism in sustainable environmental protection management techniques in terms of practice approach versus policy approach.

### **6.3 Conclusions**

This study acknowledged that knowledge and human action are collateral entities. Human actions on their physical environment ought to be guided largely by human knowledge on the same. Thus, awareness, values, attitudes, skills, on sustainable environmental protection should be supported by prior knowledge.

The first research question sought answers on citizenry awareness on the nature of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. The general citizens were not aware of the existence and purpose the ecocentric goal of education and policies on sustainable environmental protection. The institutional officers are not aware of the ecocentric goal of education and are also unaware of the specific objectives of the policies on sustainable environmental protection. It was therefore logical to conclude that the theory and practice of education (formal and non-formal), at all levels of learning and training, has not been structured {both in content and delivery approaches} to enable learner/citizenry awareness on environmental issues and in respect to sustainable environmental protection.

The second research question was on the effectiveness of the implementation of the ecocentric goal of education and policies on sustainable environmental protection been in Kenya. Respondents' views and observed citizenry involvement in incessant environmental degradation were indicators of ineffective implementation. The implementation strategies employed by the agents (educators, institutional officers and

citizens) have not enabled acquisition, enculturation and execution of environmental ethics: values, attitudes and skills, that ensure citizenry commitment and participation in sustainable environmental protection practices.

The third research question was on the underlying factors for incessant environmental degradation in Kenya al-beit the existence of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. The respondents, institutional reports and the general reflection indicated a myriad of thematic factors for the unabated environmental degradation as outlined in sections 5.2. The study concluded that sustainable environmental protection would be optimized if the identified underlying factors are minimized in a well-coordinated manner, pursuant to environmental intergenerational justice.

The fourth research question was on the alternative measures for sustainable environmental protection in Kenya. The expression and the observation made on the environmental destruction perpetuated by Kenyan citizens indicated lack of a sense of environmental ethics that ought to guide sustainable environmental protection. Respondents voiced a raft of measures and practices that would ensure sustainable environmental protection in Kenya. These measures included increasing institutional capacity and Conscientization, among others. Therefore, there was urgent need to adopt strategic implementation practices that focus on promoting and instilling environmental ethics for environmental citizenship among Kenyan citizens.

Thus, the acquisition of prerequisite awareness in the sense of environmental consciousness on the impact of human actions on the environment was a necessary

though not sufficient condition for sustainable environmental protection in Kenya. There was need for Kenyan citizens to acquire awareness, knowledge and consciousness (through an effective implementation of the ecocentric goal of education and policies on sustainable environmental protection) was needed to transmute Kenyan citizens into people who are practical and result-oriented as environmental citizens. Accordingly, this transmutation should be a level in which Kenyan citizens adopt sustainable technological measures, discoveries and innovations on environmental utility in sustainable protection. This study considered constitutive conditions with which such a level would be actualized. These constitutive conditions are: transformative education in terms of its content and pedagogical approaches; expansion of Conscientization platforms, embracing place-based leadership and national enculturation in respect to environmental ethics and practices. Within these conditions, citizens would transmute into environmental citizens.

#### **6.4 Recommendations**

The observation made in this study demonstrated that the implementation of the ecocentric educational goal and policies on sustainable environmental protection in Kenya has been ineffective. Thus, the study has come up with alternative measures that can be adopted to ensure effective sustainable environmental protection. Accordingly, the following are the recommendations:-

##### **6.4.1 Policy Recommendations**

To salvage the environment from citizenry destructive involvement and interrelation through acquisition and execution of environmental citizenship in Kenya, the study

recommended increased institutional capacity, legal frameworks and citizenry practices that included:-

- i. To amend the Science, Technology and Innovation Act, No. 28 of 2013 on the functions of NACOSTI function (d) to read “develop, in consultation with stakeholders, the priorities in scientific, technological and innovation activities in Kenya in relation to the economic, social and environmental policies of the government and the country’s international commitments”. This would be in light of concerted and legal attempts to make the natural environment part of the country’s character and identity in all aspects, including education. It would also help restricting NACOSTI’s key performance indicators to include support on sustainable environmental protection.
- ii. A policy guideline on local media coverage of environmental issues. In 2014, the government through the communications authority guided 40% local media coverage on local content. This has enabled citizens to enjoy local cultural expressions even in local languages thus promoting the diversity of cultural expressions. A minimum percentage media coverage requirement by law would increase awareness of environmental issues, promote citizenry participation in conservation, demonize degradation activities and promote other environmental citizenship practices.
- iii. To make Kenya’s natural environment part of the national character and integrity, environmental education need to be made specific and be a compulsory examinable subject, at least for primary and secondary levels of education.

- iv. The office of the director of public prosecution to regazette prosecutorial powers to NEMA. Currently NEMA can only act as a witness to EMCA 1999 and related guidelines' contraventions in a court of law. Being a national lead agency in ensuring a clean and healthy environmental, NEMA would be best fitted to enforce compliance to sustainable environmental protection practices and guidelines, investigate and prosecute any contraventions to these practices and guidelines. Since Kenya has police units like Port Police, Railways Police, Airport Police, Coast Guard Service, Border Patrol Police, Critical Infrastructure Police, among others, it would be in order to have Environment Police.
- v. Enact other specific environmental laws. For example, a clean technology Act would make a strong legal base to promote clean technology which is the bedrock of sustainable environmental protection. A Clean technology Act of parliament would, among other things, establish a clean technology authority or even a commission and a national sustainable development fund or just a clean technology fund that solely and specifically focus on innovation, support and incentives on sustainable environmental protection through technology. This act would also require minimum percentage commitment of companies' social corporate responsibilities to be on environmental protection and innovation support.
- vi. A policy requirement that constituency development funds and county governments' budgetary allocations need to have a certain percentage compulsorily committed to sustainable environmental protection practices. Examples of these practices are community tree nurseries and environmental clubs, water treatment plants, and environmental awareness and protection campaigns. A pragmatic

bottom-up approach on funding allocations and physical environment management practices need to be adopted. An increasing of more than 2% of the national Gross Domestic Product should be allocated to environmental protection initiatives.

- vii. Set environmental targets like zero net soil loss by 2050, help keep average global temperature rise below 1.50C by 2050, for instance through a spatial planning act; for better use of available land and re-zoning to contain urban sprawl and avoid encroachment practices.
- viii. Increase penalties for guidelines' contraventions and use accruals to benefit public like reward energy-saving innovations and lower fossil fuel consumption. This would deter citizens from involvement in environmental degradation activities and be satisfied that even the penalties go into advancing sustainable environmental protection
- ix. Constitutionalize National Tree planting days and Public Clean-up days, just like Mashujaa days to create public awareness/involvement in matters of environmental benefits.
- x. Establishment of Local Community Environment Clubs with public resource allocations and management personnel. Make local membership for these clubs compulsory and a statutory requirement for Government social welfare facilities, Civil Registration (both National Identity cards, Birth Certificates, Passports, Land Registration and ownership transfers, Driving Licenses for all Classes, Development/Construction Approvals, Business Registration Certificates, Marriage Certificates, Environmental Audit/Environmental Impact Assessment Approvals, Logbooks acquisition, Higher Education Loans Board (HELB) and all other forms

of financial Assistance/Loans/grant facilities. etc. These clubs could be either at the location or ward level.

- xi. Make proof of competencies and involvement in sustainable environmental protection initiatives, coupled with implications of place-based leadership skills, a compulsory requirement for public appointments just like it is for Certificate of good conduct and clearance from Ethics and Anti-Corruption Commission, HELB, Credit Reference Bureau (CRB), among others. This would provide exemplary public governance and leadership which are a critical prerequisite for citizenry commitment and participation in sustainable environmental protection practices.
- xii. Periodic awards to citizens who are exceptional individuals and corporate entities that excels in environmental protection initiatives. Kenya has presidential awards on individual who have shown nationalistic achievements and involvements. One of these awards could be specifically committed to environmental excellence in terms of conservation, sustainable protection, innovativeness, low-carbon emission activities, among others. NEMA as a lead agency would also have a similar award. Such recognition would enhance motivation and act as incentive to sustainable environmental protection.

#### **6.4.2 Recommendation for Further Research**

The study recommends further research on the reconstitution of the Competence-based curriculum and its possible influence towards sustainable environmental protection in Kenya.

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## APPENDICES

### APPENDIX: 1

#### INTERVIEW SCHEDULE FOR INSTITUTIONAL OFFICERS

This interview guide was administered to sampled respondents from MoEF, KWS, KFS, WRA NEMA and County Departments, in order to obtain information on the awareness and effectiveness of the ecocentric goal of education and policies on sustainable environmental protection in Kenya. The responses helped in finding underlying factors for incessant environmental degradation and suggesting alternative strategies to ensure effective implementation of the goal and policies. The responses were also a great reflection when giving the summary, conclusions and recommendations of the study.

#### Introduction

My name is Cosmus Mutua Mwendwa, a post-graduate student at Kenyatta University. I am carrying out a research study on the effectiveness of the ecocentric goal of Kenyan education and policies on sustainable environmental protection. Your institution was selected because of its critical role that it plays in the country's environmental conservation and protection. I therefore request that you kindly share with me your experiences on sustainable environmental protection. The information you provide will be treated confidentially and only used for the purpose of this study.

#### Section I: Demographic Information

- i. Name(Optional):..... Age:.....  
Institution:.....
- ii. Current Position/Responsibility.....
- iii. Gender:.....
- iv. Level of Education (Academic, Professional, Relevant Training to Current Position/Responsibility, In-Service Attendance):.....
- v. Length of Service at Current Position/Responsibility:.....

**Section 2: Awareness of the Nature of the ecocentric goal of education and policies  
on sustainable environmental protection**

- i. What do you understand by the terms (a) Environmental degradation? (b) Environmental protection?
- ii. Are you aware of a goal of education on Environmental protection? If YES, Mention the goal and its objective(s).
- iii. Are you aware of policy or policies on Environmental Protection? If YES, mention the policy and its objective(s).
- iv. Explain the reasons for the ecocentric goal of education and policies on sustainable environmental protection.

**Section 3: Effectiveness of the Ecocentric Goal of Education and Policies on  
Environmental Protection**

- i. What environmental degradation activities do you observe within your area of jurisdiction?
- ii. What practical strategies or measures have been put in place to ensure achievement of sustainable environmental protection?
- iii. What relevant skills and values have people acquired to curb environmental degradation in your area of responsibility?
- iv. What environmental protection programmes and activities are in existence in schools and colleges?
- v. In your opinion, have the ecocentric goal of education policies on sustainable environmental protection been effective in Kenya? If YES, what has been achieved? If NO, what has not been achieved?

#### **Section 4: Underlying Factors for Incessant Environmental Degradation in Kenya**

- i. What is the name of the institution you work for?
- ii. What other institutions, if any, are you in partnership (stakeholders) with on environmental protection measures? How involved are they?
- iii. What are the ways in which you create public awareness campaigns on environmental protection? How often do you do that? What are the public responses after such awareness campaigns?
- iv. Are your employees motivated in enforcing environmental protection laws to ensure objectives of sustainable environmental protection? If YES, in what ways? If NO, give reasons.
- v. Are there motivation and incentives for involvement and enforcement in environmental protection measures for the community? Give Examples.
- vi. Is the local community involved in environmental protection measures? If YES, in what ways? If NO, give reasons.
- vii. Are there In-service training and capacity building initiatives in your institution? If YES, how often? If NO, how does your staff upgrade their knowledge and skills on sustainable environmental protection?
- viii. What monitoring and evaluation measures does your institution undertake on environmental management and protection?
- ix. How does the administrative structure(s) in your institution/area enable or hinder sustainable environmental protection?
- x. Please give your comment on the adequacy/inadequacy of financial, human and technical/equipment resources available for sustainable environmental protection.....

- xi. What are the impediments to environmental protection measures do you witness?
- xii. What other challenges do you face in executing environmental protection measures?
- xiii. In your opinion, what are the underlying factors for incessant environmental degradation in Kenya despite the existence of ecocentric goal of education policies on environmental protection?

#### **Section 5: Alternative Measures to Ensure Sustainable Environmental Protection**

- i. What measures has your institution put in place to ensure sustainable environmental protection?
- ii. Are there Areas of improvement to enable sustainable environmental protection?
- iii. What is the need for public ownership and participation?
- iv. Would you suggest School programs and integrated subject content on environmental protection? Examples?
- v. What is the need for and how would Regeneration of public values and beliefs on environmental protection be beneficial? Examples?
- vi. What Motivation and incentives would enable sustainable environmental protection?
- vii. What Enforcement, Monitoring and Evaluation efforts would enable sustainable environmental protection?
- viii. In your opinion, what are the alternative measures that can be put in place to ensure effective implementation of the ecocentric goal of education and policies on sustainable environmental protection in Kenya?

Thank you.

## APPENDIX: II

### INTERVIEW SCHEDULE FOR CITIZENS

The interview guide was administered to citizens in order to obtain information on the awareness and effectiveness of the educational goal and policies on sustainable environmental protection in Kenya. The responses helped in finding underlying factors for incessant environmental degradation and suggesting alternative strategies to ensure effective implementation of the goal and policies. The responses were also a great reflection when giving the summary, conclusions and recommendations of the study. Data was collected from the citizens involved in various environmental degradation activities. Since the total number of such citizens is not known, snowballing was used where the citizens were interviewed as they involved in various environmental degradation activities.

#### Introduction

My name is Cosmus Mutua Mwendwa, a post-graduate student at Kenyatta University. I am carrying out a research study on the effectiveness of the ecocentric goal of Kenyan education and policies on sustainable environmental protection. The activity you are involved in has an impact on the environment. I therefore request that you kindly share with me your experiences on sustainable environmental protection. The information you provide will be treated confidentially and only used for the purpose of this study.

#### Section I: Demographic Information

- i. Name (Optional):..... Age(Optional) .....County.....  
Sub-County.....
- ii. Economic Activity.....Duration in the  
Activity:.....
- iii. Gender.....
- iv. Level of Education

#### Section 2: Awareness of the Nature of the ecocentric goal of education and policies on sustainable environmental protection

- i. What do you understand by the terms (a) Environmental Degradation? (b) Environmental Protection?
- ii. Are you aware of a goal of education on Environmental protection? If YES, Mention the goal and its objective(s).
- iii. Are you aware of policy or policies on Environmental Protection? If YES, mention the policy and its objective(s).

- iv. Explain the reasons for the ecocentric goal of education and policies on sustainable environmental protection.

**Section 3: Effectiveness of the Ecocentric goal of education and policies on environmental protection**

- i. What other environmental degradation activities observed within your area of residence?
- ii. What practical strategies or measures have been put in place to ensure achievement of sustainable environmental protection within your community/residence?
- iii. What relevant skills and values have people acquired to curb environmental degradation in your area of residence?
- iv. What environmental protection programmes and activities are in existence in schools and community? Were you involved in any of these programmes/activities while in school and here at the community? If YES, which ones? If NO, give reasons.
- v. In your opinion, have the ecocentric goal of education and policies on sustainable environmental protection been effective in Kenya? If YES, what has been achieved? If NO, what has not been achieved?

**Section 4: Reasons for continued environmental degradation**

- i. Are there institutions or organizations within your locality that undertake environmental protection measures? How involved are they?
- ii. What are the ways in which public awareness campaigns on environmental protection are done in your residence? If there are, how often are they done?
- iii. Have you attended any of these environmental protection campaigns? If YES, what are the public responses after such awareness campaigns? If NO, give reasons.
- iv. Are residents within your locality motivated in observing environmental protection laws to ensure objectives of sustainable environmental protection? If YES, in what ways? If NO, give reasons.
- v. Is the local community involved in environmental protection measures? If YES, in what ways? If NO, give reasons.
- vi. How does the administrative structure(s) in your residence enable or hinder sustainable environmental protection?
- vii. Are there impediments to environmental protection measures?


- viii. What other challenges do you face in executing environmental protection measures in within your residence?
- ix. In your opinion, what are the underlying factors for incessant environmental degradation in Kenya despite the existence of ecocentric goal of education and policies on environmental protection?


**Section 5: Measures to ensure sustainable environmental protection**

- i. Is there need for public ownership and participation in protecting the environment? If YES, explain. If NO, give reasons.
- ii. What measures are in place within your residence to ensure sustainable environmental protection?
- iii. In what ways do you/can you participate in ensuring sustainable environmental protection?
- iv. Are there Areas of improvement to enable sustainable environmental protection within your locality?
- v. Would you suggest School programs and integrated subject content on environmental protection? Examples?
- vi. What is the need for and how would Regeneration of public values and beliefs on environmental protection be beneficial?
- vii. What Motivation and incentives would enable sustainable environmental protection in your residence?
- viii. In your opinion, what are the alternative measures that can be put in place to ensure effective implementation of the ecocentric goal of education and policies on sustainable environmental protection in Kenya?

Thank you.


### APPENDIX III: RESEARCH PERMIT FROM NACOSTI

  
**REPUBLIC OF KENYA**

  
**NATIONAL COMMISSION FOR  
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: **595883** Date of Issue: **09/September/2019**

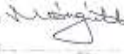
**RESEARCH LICENSE**




**This is to Certify that Mr. Cosmus Mwendwa of Kenyatta University, has been licensed to conduct research in Kitui, Machakos, Mombasa, Nairobi, Nakuru, Narok, Turkana on the topic: THE EFFECTIVENESS OF THE ECOCENTRIC GOAL OF KENYAN EDUCATION AND POLICIES ON SUSTAINABLE ENVIRONMENTAL PROTECTION for the period ending : 09/September/2020.**

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**APPENDIX: IV-RESEARCH BUDGET**

S/no	Task	Amount in Ksh.
1.	Transport and Subsistence during piloting and data collection	105,000.00
2.	Typing, Printing and photocopying of proposal drafts, Instruments for piloting and data collection and Drafts of Thesis	50,000.00
3.	Stationery and sourcing for relevant academic materials for development of proposal and Thesis writing	40,000.00
5.	Data Analysis and Report Writing	60,000.00
	Total Estimated Budget	<b>Ksh. 255,000.00</b>

### APPENDIX V-TIME PLAN

Activity	Oct 2016	2017/2018	Feb 2019	July 2019	Aug-Sept 2019	Oct 2019	Nov 2019-March 2020	April-Dec 2020	Jan/May 2021	April 2022
Development of Concept Paper										
Proposal Writing										
Presentation of the Proposal at Department										
Revision of the Proposal for Submission to graduate School										
Piloting of Research Instruments										
Pilot Data Cleaning, Coding and Analysis										
Data Collection										
Data Analysis										
Report Writing										
Submission of Thesis										

## APPENDIX VI

### NEMA PERSONNEL COMPOSITION AT THE SAMPLED COUNTIES

<b>County</b>	<b>County Director Of Environment</b>	<b>Other Officers</b>	<b>No. of Sub-Counties</b>
Embu	1	1 Environment Officer 1 Office Assistant 1 Driver	4
Kisumu	0	1 Environment Officer	7
Machakos	1	3 Environment Officers 1 Driver	8
Mombasa	1	3 Environment Officers 1 Office Assistant 2 Drivers	6
Nairobi	1	1 Senior Compliance Officer 1 Senoir Environment Officer 3 Environment Officers 1 Evironment Assistant 1 Clerical Officer	17
Narok	1	1 Environment Officer 1 Driver	6
Turkana	1	1 Environment Officer 1 Driver	7
Murang'a	1	1 Environment Officer 1 Driver	7
Evaluation	Personnel Limitation, Cannot execute duty effectively: General institutional Incapacity		

Source:

[http://www.nema.go.ke/index.php?option=com\\_content&view=article&id=7&Itemid=14](http://www.nema.go.ke/index.php?option=com_content&view=article&id=7&Itemid=14)

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## APPENDIX VII

### TOP TWENTY COMPARISON INDICATION OF THE CORRELATION BETWEEN ENVIRONMENTAL PERFORMANCE INDEX (EPI) AND CORRUPTION PERCEPTION INDEX (CPI) 2018

Country	EPI Top Twenty 2018	CPI In Top twenty 2018
Switzerland	1	5
France	2	-
Denmark	3	2
Malta	4	-
Sweden	5	7
United Kingdom	6	11
Luxemburg	7	9
Austria	8	16
Ireland	9	19
Finland	10	3
Iceland	11	15
Spain	12	-
Germany	13	12
Norway	14	4
Belgium	15	-
Italy	16	-
New Zealand	17	1
Netherlands	18	10
Israel	19	-
Japan	20	20

Source: <https://epi.yale.edu>epi.2018>; <https://www.transparency.org>cpi>

## **APPENDIX VIII**

### **INTRODUCTION TO RESPONDENTS (A-L)**

This study was conducted in 8 counties in Kenya, namely: Mombasa, Machakos, Nairobi, Narok, Kisumu, Turkana, Murang'a and Embu. Respondents' views were sought from the directors or deputy directors of MoEF, KWS, KFS and WARMA (as was purposively considered most applicable to the study objectives and logistics). Also the researcher and his assistants conducted dialogue sessions with county governments' officers involved in environmental management: directors of environment, physical planners, licensing officers, and inspection/compliance officers.

For NEMA, the lead and coordinating agency in sustainable environmental protection (ensuring a clean, healthy and sustained environment) lived voices and experiences of respondents were obtained from the county directors, licensing, compliance and auditing officers: these are generally referred to as environmental officers.

The researcher finally obtained voices of lived experiences of respondents (citizens) who the research found involving themselves in activities that are were considered destructive to the environment: sand harvesting, charcoal burning, logging, encroachment into gazetted and riparian lands including wetlands, solid waste irregular disposal and public burning, washing of vehicles at the lake or river shores, among others.

Unfortunately, not all sampled respondents were willing to give their descriptive views and others did not give elaborate response to the dialogue guide and therefore their accounts were not adopted into the study. As a result only clear and reasoned texts of the voices of lived experiences of respondents were adopted for the study. These voices were written on paper or recorded. They were later transcribed and edited. Since it was not

possible to give space for all the respondents' transcribed and edited voices of lived experiences, only a few were adopted for record in this study as all others were used to inform the summaries as indicated in respective tables in the various study reflections and discussions. For confidentiality, pseudonyms were used for the interviewed officers and citizens as outlined in appendices A to L and their respective subscriptions.

Finally, the job descriptions and titles for the institutional officers and the physical interview locations for the citizens are as at the time and date of administering the interview schedules.

## **Respondent A (Dodman, Director of Environment, MoEF)**

### Background

This respondent was the then Director of Environment, Ministry of Environment and Forestry, and was interviewed at the Head Office.

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

During my schooling I never heard about the ecocentric goal of education, not even policies on sustainable environmental protection or anything related to them. At least we knew about “a philosophy” of love, peace and unity, goals on national cohesion and international integration. It is only during my environmental training and practice that I became acquainted with ESD and natural environment policies and their objectives on environmental protection, although the specifics may not be clear to most of us.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

From the manner in which we are struggling to educate people (Kenyan citizens) about the need to conserve the environment, we need to do more. Some of these objectives are not about to be realized. Schooling has not helped the situation either.

#### **3. Underlying Factors for Incessant Environmental Degradation**

We have not empowered our people enough. Environmental issues are not covered adequately in within our education and training. Economic challenges contribute to people’s involvement in destroying the environment. The capacity of our institutions needs to be enhanced and the value system of our people contributes to the problem of environmental destruction.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Although as a ministry we are trying, there is need for more public awareness and stakeholder engagement. People need to know the benefits of environment and really appreciate their contribution to its protection. We need minimum percentage coverage of environmental issues by our media. Can environmental education be a compulsory subject right from primary? Community or local environmental clubs should be institutionalized and make membership and participation a requirement for public service like chapter six of the institution. These measures would make the environment part as parcel of our national character and integrity.

## **Respondent B<sub>1</sub> (Dingima, a NEMA County Director of Environment in Mombasa County)**

### Background

Dingima is the NEMA County Director of Environment in Turkana County, which is the largest COUNTY in Kenya. He was interviewed from the County office.

**1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I have never heard of the ecocentric of education in all my schooling. I knew of education for national integration, national cohesion, peace and unity. I know of the ESD and natural environment policies but we keep checking on the specifics.

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

You cannot talk of effectiveness for these measures and even the goal and policies. There is so much to be done before we get there.

**3. Underlying Factors for Incessant Environmental Degradation**

Conducting public awareness campaigns on natural environment and ESD issues is greatly hampered by lack of funds. We get inadequate funds and even their disbursement is so irregular. We rarely do awareness campaigns. As you see, I have only one environment officer. How do we manage to do campaigns in all the seven sub-counties? Turkana County is very large. We need our capacity enhance. Otherwise I will leave this station without stepping my feet in some areas.

**4. Alternative Measures to Ensure Sustainable Environmental Protection**

NEMA as a lead government agency in environmental management should be made autonomous. By such, it will be drawing its timely and increased financial allocation directly from the exchequer. There should even be a minimum percentage of the GDP allocated to the environment. The allocations from the treasury should be regular and increased. By such, we would have more officers on the ground, vehicles for mobility and an expanded stakeholder engagement. NEMA should even get back its prosecutorial powers. People would be more sensitive to the environment and increase compliance. We need to make contraventions more punitive.

**Respondent B<sub>2</sub>** (Keandu, NEMA County Director of Environment in Machakos)

Background

Keandu was the then NEMA County Director at Machakos County. He was interviewed from the County Office.

**1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Schools and public engagements have been able create adequate awareness on the goal of education and policies on the environment. Even some of us who have undertaken post-secondary education and training are not aware. Such are not emphasized in schools. Even environmental clubs were optional. Unless these things were taught in subjects we did not take

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

How would you imagine of an effective goal of education on the environment when you witness Kenyans busy destroying their environment with such impunity? They harvest sand from rivers so irresponsibly and recklessly cut down trees even from gazetted forests in this country. We are doing our best but as a country, there is so much we need to do.

**3. Underlying Factors for Incessant Environmental Degradation**

Some people come with some influence, that is money...the most disturbing thing is when they openly tell you that you risk transfers to areas you consider unfavorable... losing your job or dire consequences...it leaves you with few options...you just approve their developments

**4. Alternative Measures to Ensure Sustainable Environmental Protection**

We need a drastic change of values in this country so that people can admire a clean and healthy environment. It needs to be made like a national habit. At the rate things are moving the President should declare environmental degradation a national disaster. There should be national funds to support research and innovation. We need a national day of environment.

### **Respondent B<sub>3</sub>** (Mburunge, NEMA County director in Nairobi County)

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

That is not taught in schools but in our training. I may not know about the goal of education but I know the ESD and natural environment policies.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Although Rome was not built in one day, I think our pace as a country is slow.

#### **3. Underlying Factors for Incessant Environmental Degradation**

Joblessness is an issue here in Nairobi. Inadequate resources especially finances to recruit more staff and acquire modern technology also inhibits progress. Failure to engage the citizens comprehensively in matters of the environment slows down the pace.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

There is a need to engage more in conservation projects where the citizens are directly involved and benefitting. They own and effectively participate. For example, community projects like recycling plants for solid waste to produce biogas for use by local households and water treatment plants at least at the ward level.

### **Respondent B<sub>4</sub>** (Thomanda, NEMA county director in Narok County)

#### Background

Thomanda was the then NEMA County Director for Narok County and she was interviewed at the County office.

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

The formal schooling does not help learners to understand things in their rightful context. For instance, from the manner I see people destroying the environment, which their future, issues on environmental are supposed to be very pivotal in learning. Our public engagements in trying to create awareness have not born much fruit.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

As I have said, there are efforts but a lot needs to be done. So far, what we have done has not been very effective. Our schools are struggling in that direction.

#### **3. Underlying Factors for Incessant Environmental Degradation**

At the county level, it is the focus of the governor that counts in so many things. They attempt to follow their manifestos. These manifestos change with the change of governors. You can be sure if issues on environmental conservation miss out on the main focus, it will be five years of near neglect on environmental issues. Irregular change of directors and executive members is a major hitch on the progress on sustainability and development.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Our public engagement should put a lot of emphasis on environmental matters. The government has to put more resources. Countries like our neighbours Rwanda are far ahead than us. It everybody's responsibility to take care of the environment. We should make sustainability part of our national character. Our values must change if we are to succeed against this war.

## **Respondent B<sub>6</sub>** (Kwisero, the then NEMA County Director in Turkana County)

### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

You will be surprised that even those of us who are supposed to be promote those goals and policies are not aware of them. I think our schooling and training does not create sufficient awareness on these critical environmental tools.

### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Normally you judge the success of a process by the quality of the quality or characteristics of its products. Looking at the way our citizens are “committed in destroying their own environment, one would judge the implementation of the goals and policies as ineffective.

### **3. Underlying Factors for Incessant Environmental Degradation**

Turkana is the largest county in Kenya, with seven sub-counties which are also very vast. As you can see I have one officer only. It becomes practically impossible for the officer to attend to all issues...its overwhelming.. we only do what we can...devolution has brought a lot of activities down here...there are developments left right and centre...may be when we leave others will come to finish up.

### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

NEMA, as the lead agency in environmental protection should recruit more staff, embrace modern technology in environmental management among other measures. Increased financial resources would enable expanded awareness campaigns’ platforms. We need to initiate community projects that directly benefit the people, projects that they can own and feel part of....projects that involve the people.

## **Respondent B<sub>7</sub>** (Joram, NEMA County Director in Embu County)

### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Teachers are very influential in creating learners awareness on issues. In the event that they miss out on something, the learners miss it out. Awareness on environment and its sustainability was inconsistent in schools. We learn about the policies in our training

### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

You only need to go to the field to realize that our efforts are bearing results so minimally compared to the time and other resources invested into the same.

### **3. Underlying Factors for Incessant Environmental Degradation**

Even when we are invited for community barazas, the main focus is always on other social issues, not on environmental protection. These people (national and county administrators) always forget that peace, security and environment are so intertwined that, actually, the first two are dependent on the safety of the environment.

### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

The government should be more proactive in tackling issues in sustainability. I know you know that an institution raises and falls with the leader(s). Public leaders must be on the forefront in protecting the environment. More RESOURCES must be committed to environmentalism in this country if we are to realize any success.

## **Respondent B<sub>8</sub>** (Mwiga, a NEMA County Director at Embu County)

### **Background**

This respondent was the then NEMA County Director of Environment at Embu County and was interviewed at NEMA’s County Office.

### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I have no idea about an ecocentric goal of education on environment protection. May be it was taught in History and Government, which was optional in our school and most boys did not like it. There was no environmental club in our school. Articulation on issues on the environment is rare. I know ESD and the policy on environmental protection and EMCA from my training and practice here, not in my schooling.

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

State and other agencies are yet to realize success on conserving the environment. We engage stakeholders but still we are far from effective implementation. I wish educational practice would help.

**3. Underlying Factors for Incessant Environmental Degradation**

I think our education system has really failed. Our political leaders have not been good examples. In fact some of the malpractices on the environment like encroachment are perpetuated by public leaders. You look at what they do and you would think Kenya is failing state in terms of environmental conservation.

**4. Alternative Measures to Ensure Sustainable Environmental Protection**

Our national values should change. We need environmental targets as a nation. Recognition and motivation on environmental issues and performance is necessary. There is need to strongly constitutionalize environmental protection like national days for the environment. We need a national fund and an act on clean technology.

**Respondent C<sub>3</sub>** (Phyllison, a NEMA Environmental Officer in Machakos County)

**1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I did not get to know about the goal of education on the environment in school but during our training, the ESD and environment policies are highlighted.

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

We have strides but not yet at the point of expectation. There is still more land to cover in the efforts.

**3. Underlying Factors for Incessant Environmental Degradation**

Poverty and lack of proper formal education among our people is a major factor in the war against degradation in this county and Kenya at large. Inadequate resources on the part of the agencies also contribute to inefficiency.

**4. Alternative Measures to Ensure Sustainable Environmental Protection**

To succeed against the war on climate change and environmental destruction, we need community projects where citizens can practically see the benefits. Projects like greening public spaces and facades. Growing a cycling culture where people can cycle to the market and work and such like.

**Respondent C<sub>4</sub>** (Duress, a NEMA Compliance Officer)

**Background**

Duress was then a NEMA Compliance Officer in Nairobi County and was interviewed at the NEMA Head Office, Nairobi County.

**1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

To most of these citizens, a clean environment means nothing as long they get their way out. No wonder they even build into rivers and develop on gazetted lands like national and game reserves. They are not aware of anything to do with an education goal or policy. Even people like some of us, we got to know

some of these aspects on the policy too late or even never get to. In school there was nothing like education for environmental protection. There were goals like on peace and unity and international integration.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Government and institutional efforts to create awareness and citizens' commitment to environmental protection will take decades to actualize. We need a generational change.

#### **3. Underlying Factors for Incessant Environmental Degradation**

Lack of awareness, Kenyans have expressed a lot of ignorance when it comes to protecting the environment. You hear the asking "does the river belong to you." Political and official influence. Corruption inform of bribery is rampant in our country.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

NEMA must get back prosecutorial powers. When we take perpetrators of environment destruction to courts, we go there as witnesses. If this fight is to be won, NEMA must get back authority to prosecute environmental offenders. Media coverage on environmental issues should be institutionalized and increased. Lots of trainings and practical public engagements are required.

**Respondent C<sub>6</sub>** (Jambolani, a NEMA Environmental Officer in-charge of compliance in Nairobi County)

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Education goal on environment was never amplified in schools' practices and subject contents if at all it is in existence. I got to know about ESD and other policy issues on the environment abit in my training and more in my practice.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Knowledge is said to be "power". This is the civil power that enables citizens to perform in accordance to what they know. What am simply saying is, from how I see Kenyans handling issues to do land use guidelines, measures on environmental protection are yet to be of benefit.

#### **3. Underlying Factors for Incessant Environmental Degradation**

We put effort to sensitize citizens on sustainable environmental protection but their attitude is hard to change, maybe we do not pass enough relevant information as strongly as would be expected. They do not embrace commitment to the same. Issues of corruption and its effect on environmental protection might be with us for long. Quite a number of these citizens, especially those found in environmentally destructive activities describe them as their livelihoods and without such they felt they would have nothing else to do.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Capacity enhancement for the environmental agencies will enable creation of awareness and provide alternatives to Kenyans in terms of environmentally viable economic activities. Our school practitioners must embrace approaches that can help in this direction.

**Respondent C<sub>8</sub>** (Adrian, NEMA Environment Officer in Kisumu County)

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

We did not learn those goals and policies in school. Teachers talked about peace, love and unity. There were no environmental clubs in our school. Might they have taught in selective subjects? It is only in my training I realized in there ESD policy and another on the environment. we do lot in-service training on these practices.

## **2. Effectiveness of the Ecocentric Goal of Education and Policies**

My friend, when a person brings you construction approvals from the county government for development which you know is close to a river or lake, usually I have very minimal option. When we raise issues with them on the impact on the environment and they put it like ‘this is already approved’. We even have people who tell you of how they bought the approvals {implying bribery}.

## **3. Underlying Factors for Incessant Environmental Degradation**

Kenyans lack value for the environment. Inadequate financing is a big problem. Sometimes we engage in some vices like corruption because our salaries are so small. Our capacity should be improved in terms of vehicles for movement and more staff. Public leadership is also a problem. This notion of “get rich quickly” is a hindrance. How do you explain the source of some of the property that some of these people have and we know their salaries?

## **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Increased funding is critical if we are to realize any gains against environmental destruction and ensure sustainability in this country. Issues on environmental management should be compulsory for all subjects in all schooling. We need national days of awareness on the environment.

### **Respondent C<sub>9</sub> (Daima, the then NEMA Environment Officer in Kisumu County)**

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

In all my life in school, I did about hear any goal on environment but so much about unity and peace. I think even the national anthem and patriotic songs were loud enough in such education goals. Yah, once in a while I would hear mashahiris (poems) on ubora wa mazingara {the importance of environment} but not really. ESD and natural environment policies are common at our work interactions although some of us are not very conversant with the details.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

We are really far from achieving our targets, people are still not using designated dumpsites for wastes, and they burn it in public with all the hazards, among other destructive practices to the environment.

#### **3. Underlying Factors for Incessant Environmental Degradation**

Even when you insist on procedures, for instance, on the safety of the Lake Victoria, especially on the untreated effluence into the Lake, am told that “the directors of that company are your bosses in the government. There is nothing you can do”.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Public leadership has to be pro-environment. Leaders blatantly disregard land use guidelines with so much impunity in this country. As you know leaders are a reflection of the kind of people they lead and they also greatly influence their character and values. It has to start at the top. Expanded media on environmental issues is important to increase public awareness and change of attitudes our formal and non-formal educational curriculum should glaringly embrace sustainability.

### **Respondent C<sub>10</sub> (Gilbert, a NEMA environment officer in Turkana County)**

#### **Background**

Gilbert was an Environment Officer with NEMA in Turkana County. He was interviewed from the County Office.

### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

A few poems and compositions were written about the environment but not as much. In terms of goals and policies, our teachers did not seem to be interested and knowledgeable. Even as here, a lot of awareness is required.

### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

We really struggle to make people aware of the necessity of a sustainable environment but with little success so far.

### **3. Underlying Factors for Incessant Environmental Degradation**

You know our salaries. Sometimes you are forced to allow some things even when you know they are not right.

### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

More and timely resources should be channeled to conservation for sensitization and inspection. There should be national recognition to those who excel in creativity, innovation and participation on environmental protection. Clean energy and technology need be made a priority in this country.

## **Respondent C<sub>11</sub> (Lempopo, a NEMA Environmental Officer in Murang'a County)**

### **Background**

Lempopo was the then NEMA Environmental Officer in Murang'a County. He was interviewed at the County Office.

### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I did not learn about sustainable environmental protection and development goals and policies in all my schooling. It is only in college that such my attention was drawn to such. May be those did not train in courses other than environmental science still do not know

### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

When one observes the manner in which Kenyans relate with the physical one would think that we are not yet there. There is so much ground to cover.

### **3. Underlying Factors for Incessant Environmental Degradation**

I can't remember any teacher or even the books I read, mentioning a goal of education on environmental protection. Maybe this was taught in History, which most of us did not take. Teachers emphasized goals on national cohesion, love peace and unity. Even the national anthem highlighted all these. Again, environmental clubs were very optional in our days in school. Practical lessons on environmental protection were rare even in my training apart from a few refresher courses that we take.

### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

We need community environmental clubs, where community awareness campaigns can be done and proof of membership to such clubs should be a requirement for public job or responsibility appointment like it is for CRB and good conduct. There should be a clean energy authority in this country to promote adoption and use of clean energy and support innovation in environmental management.

## **Respondent C<sub>14</sub> (Mwinduki, a NEMA Environmental Officer in Embu County interviewed from the County Office)**

### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I do not know about the education on environment but I know the policies but not to details.

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

If the observed practices are anything to go by, then we are not yet there.

**3. Underlying Factors for Incessant Environmental Degradation**

Poor public governance, inconsistent national values, poverty and corruption are hindrances to sustainability in this country.

**4. Alternative Measures to Ensure Sustainable Environmental Protection**

Several measures might help in protecting our environment. May be a specific act of parliament on clean technology. A national fund on clean technology and innovation, tax exemptions on such efforts like clean energy projects and equipment. This would even motivate people's participation.

**Respondent D<sub>1</sub>** (Walukoa, a deputy director at KWS)

Background

Walukoa was the then a Deputy Director of Kenya Wildlife Service and he was interviewed from his office at the KWS Head Quarters.

**1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Our schools do not help to create the necessary awareness levels, not even the public barazas we usually hold. Even in our days, things were the same. You would hear about peace, love and unity. It is only in our training that one would know about ESD and natural environment policy and to details because it depends on the course one is taking.

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

We hold awareness campaigns among communities next to our parks and game reserves, though not logistically so often, but you always have cases of poaching and conflicts among them. We have also witnessed human development encroaching into our parks.

**3. Underlying Factors for Incessant Environmental Degradation**

Insufficient funding is the biggest challenge. Sometimes the allocations come late. Lack of modern equipment impedes our progress as an institution. Corruption and poaching is also a big challenge. We need a lot of sensitisation to our people.

**4. Alternative Measures to Ensure Sustainable Environmental Protection**

We request that government improves on financial allocations to lead agencies in environmental management practices. Our curriculum in all learning must strongly integrate environmental issues. Can we make sustainable development our strongest national value? Increased media coverage is necessary in order to create public awareness on conservation. We need our public leaders and everybody else to be apt in obeying guidelines on human-wildlife interactions.

**Respondent D<sub>2</sub>** (Mwaundu, a KWS deputy Director)

**1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Awareness levels on the need for conserving the environment and its resources in very low in this country. Our school system and practice has not helped much. We receive young graduates from college as new recruits and they appear so ignorant even on what they trained on. That is disastrous.

## **2. Effectiveness of the Ecocentric Goal of Education and Policies**

No, we are not yet there. It will many years, at the current rate to be effective in implementing policies and even education goals on sustainability.

## **3. Underlying Factors for Incessant Environmental Degradation**

These challenges are all over and they affect our mandate as an institution. Our conservancies do not have enough personnel, vehicles are not enough and the areas they manage are vast.

## **4. Alternative Measures to Ensure Sustainable Environmental Protection**

May be having a certain percentage of our GDP going to environmental practices like awareness campaigns, innovation, and promotion of clean energy. We also need to devise ways of imparting sustainability attitudes among Kenyans. Motivation and recognition is also very important especially to our environmental workforce.

### **Respondent E<sub>1</sub>** (Mwandoko, an Assistant Director and head of a conservancy at KWS)

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

You know our education system has been majorly bent on the economic dimension. It is therefore understandable why most of us wouldn't remember any goal of education on environment. at least I know about ESD and the environment policy.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

As much I would say that our education practices have not been the best insofar as the environment is concerned, I would give it a 6 in a scale of 10. We are not there yet.

#### **3. Underlying Factors for Incessant Environmental Degradation**

Our national values are not pro-environment. We were not socialized with the necessity of a conserved environment in mind. You can imagine a child who is born and bred in a family where they live on charcoal burning! He grows knowing that every tree he/she sees around is only good for and should be cut down to burn charcoal. I know economic under-development is a big problem in this country and some of the options Kenyans have are detrimental to the environment.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

There are a number of issues that may need to be addressed in KWS. For example, timely and increased budgetary support. We need more officers on the ground. It is unfortunate that some of our people (officers) are also involved in illegal activities. Also if a land use policy and spatial plans frameworks would be fast tracked that would make it a bit easier for us. Adequate empowerment of our institutions is required.

### **Respondent E<sub>2</sub>** (Mwando, an Assistant Director at KWS and Head of Mau Conservancy in Narok County)

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

In school we only knew about "Nyayo philosophy", peace and unity. Not so much on environment. Environmental clubs were optional. Unless it was taught in subjects I did not take. ESD and the policy on environment are loud due to what we are involved in, although quite a number of newly employed staff may not be very clear on the specifics.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

I think we are really trying as a country but there is more that can be done. To be effective environmental awareness levels need be higher than they currently may be.

### **3. Underlying Factors for Incessant Environmental Degradation**

Some of these developments within the park belong to senior government officials and usually you may not do much to stop them. We know they (the developments) negatively interfere with the ecosystem but that is the situation as it is, very unfortunate.

### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Awareness campaign forums should be engaged both at the national and local levels like the use of media. A national fund to specifically support research and creativity in environmental management is needful. Any measure that can translate (transform) people's attitudes towards the environment would be great investment for this country.

## **Respondent E<sub>3</sub> (Yolaconda, a KWS assistant director at Nairobi South Conservancy)**

### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Schools do not teach the goal and policies, may be the training after. Even some of our officers are not aware of the specifics.

### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

It is a toll order even for the government and its agencies.

### **3. Underlying Factors for Incessant Environmental Degradation**

Our national values have not embraced sustainability yet. Some of our public leaders are involved in malpractices like encroachments in our reserves.

### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

There is a need for more government support to local citizens. For instance, they should increase and strengthen youth and women funds for alternative economic activities. Allowing a national dialogue on conservation in Kenya, tax exemptions on stakeholder operations on matters of conservation being undertaken by agencies like AFEW.

## **Respondent F<sub>1</sub> (Mwenge, Deputy Chief Conservator at Kenya Forestry Service)**

### **Background**

Mwenge was then Deputy Chief Conservator at KFS. He interviewed from the Head Office.

### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I did not hear about these in school. There were no environmental clubs in our school. Sometimes it depends on the interests of the teachers. Sometimes it depends on the school one attends, I don't know. For the ESD and other policies on the environment we learn on the job.

### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

If Kenyans knew the importance of the environment, they would not destroy it. Look at the solid waste heaps in our towns, encroachment in riparian and gazetted lands and forests, and our all-time problem of poaching in our animal reserves. Mark you, this is done by people who went to school! What we learn in school does not seem to help us. We even have our officers who are involved in environmental malpractices. We have challenges in managing our environment.

### **3. Underlying Factors for Incessant Environmental Degradation**

It is not uncommon that sometimes 'fat envelopes' exchange hands among some of our officers on the ground...we have also had cases of money intended for either perimeter fences or public awareness campaigns put into other issues. It really disappoints.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

There is need for national funds on clean energy. In fact we a law to establish a clean energy authority. Government funding on community environmental projects like water recycling and environmental clubs. Demonstration of membership and participation in environmental protection activities should be a requirement for public appointments like it is for HELP and CRB clearance certificates.

**Respondent F<sub>2</sub>** (Ndelina, the then Deputy Chief conservator of forests at KFS)

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

For the ecocentric goal of education on environment, I would admit I have no idea. ESD and natural environment policies are concepts we usually interact with, especially from what we do here. What you may realize is that most of our officers may not know the specifics.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

I would say they are effective to a lesser extent. There is so much efforts we need to put in place to at least change the attitude of our people.

##### **3. Underlying Factors for Incessant Environmental Degradation**

We do our budgets in time as required but we receive our allocations so late...never in time. Also, as you may know, the budgets get so trimmed that even what we get is inadequate. As a result, we cannot do our activities in time and some of the expected activities end up suspended. Therefore, achieving our mandate becomes a big challenge.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Result oriented awareness creation is required. Governmental funding to agencies like KFS and others should be increased and with timely disbursement. We require more personnel to address understaffing in our organization. Public leadership should be exemplary in following guidelines on land use in this country.

**Respondent G<sub>1</sub>** (Nazlin, an Assistant Director at Kenya Forestry Service)

Background

Nazlin was the then an Assistant Director at KFS and the Head of Mau Conservancy and she was interviewed at the Conservancy office.

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I don't think the educational system in Kenya has been able to adequately create awareness on environmental protection and the need for citizens' participation in sustainable interaction. My school experiences did not emphasize such. Our efforts as an institution have not helped the situation.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

If these awareness creation efforts began in school, it would be better. As it is, we are not yet there. There is so much our school and institutions need to do. So far, we have not achieved.

##### **3. Underlying Factors for Incessant Environmental Degradation**

Our values are the greatest hindrance. Our public leaders have not been good examples. In fact, the most resistance to enforcement is the politicians. They even incite citizens. They grab forest land. Corruption is again eroding our efforts. Inadequate human, financial and technical capacity is also a major factor that affects our performance. Sometimes the finances come so late until we cannot adequately manage our annual calendar of events.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

I would wish that our leaders are at the forefront in compliance to guidelines. Like I said, our values need to be re-engineered as country. More resources should be committed to conservation. We need more officers to be employed. There should be constituted national tree planting days and even presidential awards on conservation.

**Respondent G<sub>2</sub>** (Muhindi, an Assistant Director at KFS and head of Eastern Conservancy)

#### **Background**

Muhindi was the Head of Eastern Conservancy. She was interviewed in her Conservancy office.

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Normal Schooling practice is never keen on teaching some of these goals and policies. Our national anthem and patriotic songs would educate us on peace love and unity. I only got to know on ESD and natural environment policies in my training and it is not in all the trainings. Even some of the specifics are never attended in our practice as an institution.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Our educational practice and public engagement forums have not succeeded in creating a level of awareness that dissuades Kenyans from engaging in environmentally destructive activities.

##### **3. Underlying Factors for Incessant Environmental Degradation**

The salary scales of the people up there are so high that the staff down here perceive it as unfair...they would engage in activities to fill or compensate the gap. As they engage in these "side hustles" (other economic activities other than the salaried employment), or even other unlawful practices like bribery or unregulated logging, our mandate becomes hard to realize. You can imagine these rangers are basically the last critical people on our line of mandate...we only motivate them in small ways though it is not enough to change their attitudes on this matter.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Adoption of national values on the environment is necessary. Our leaders are to be more focused and emphatic on environmental protection. We need a law to actualize clean technology. A minimum GDP percentage commitment on environmental protection is critical in winning the war against environmental destruction.

**Respondent G<sub>3</sub>** (Tuzikwendigo, the then KFS Assistant Director and head of Central Conservancy Area for Narok County)

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Am not aware of any goal on environment but am aware of the ESD and environment policies. I know most of our people are not aware of the objectives but all the same we keep re-servicing.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

We try but our people are difficult, to say the minimum. The common observation is citizens relating with the resources so irresponsibly. General efforts are yet to give results.

##### **3. Underlying Factors for Incessant Environmental Degradation**

Our biggest problem against the efforts to conserve Mau is the politicians. You see them every time we try to reclaim the forests they bring all manner of protests...some of these illegal settlers in the forests are their political supporters. I call such bad politics and breach of policies, whether ignorantly or intentionally.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Any change has to start with leaders. Policy implementation strategies require resources, financial and human. The more resources the government commits to issues on environment, the closer we move to realizing the objectives as stipulated in the policies.

**Respondent I<sub>1</sub>** (Munyito, the then Director of Environment in Mombasa County Government)

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

May be our schools did not do on creating this kind of awareness but subsequent trainings have enabled awareness especially on the policies.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

There are good efforts by the government and many other stakeholders but we still need to go extra miles to be where we intent to be.

##### **3. Underlying Factors for Incessant Environmental Degradation**

Technical incapacity is a big impediment to government efforts in this respect. There is usually unfair influence by senior people in national or even our county governments. Insufficient funding is another factor.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

There is so much that needs to be done in this country if we are to achieve any significant strides in conserving our environment. For instance, national awards to applaud companies and local citizens who stand out in environmental protection, a presidential award on environment, tax exemptions on sustainable or clean technology and equipment. When people understand the benefits of a protected environment, they will be involved in protecting it. They will even significantly change their attitudes.

**Respondent I<sub>2</sub>** (Diambiano, Director of environment in Machakos County Government)

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

We did not learn about the goal of education on environment in school. We got to know about ESD and natural policies more in our in-service training and practices

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Measures to sustainably protect the environment are not effective in this country. We will need to continue putting more efforts and more resources.

##### **3. Underlying Factors for Incessant Environmental Degradation**

You realize that every county describes its departments on environmental issues differently.....am of the opinion that, just as the number of national government ministries are constitutionally determined at 22, those for county governments should be described by names and numbers for ease of coordination.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Some of the measures that help the fight against environmental degradation in this country would include: rationalization of salaries for workers in this sector, engineering national values in respect to the same, enhancing capacity, motivation and recognition to environmental players.

## **Respondent I<sub>3</sub>** (Mosoti, Director of Environment in Nairobi County Government)

### Background

Mosoti was the then Director of Environment in Nairobi County Government. He Was Interviewed From the County Office

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I cannot remember anything we learned in school about goals and policies on the environment. All I recall were goals on national peace and unity, international integration. I think they were all in our national anthem and most patriotic songs. I wish we get an anthem on environmental conservation. Even kids in schools would know about the environmental challenges the country faces today.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

You obviously know about the rampant problem of solid waste management in Nairobi. People throw waste at undesignated places; in the streets and estates. The untreated effluent is emptied into water bodies, that is, rivers and dams. Nairobi River and a damp in Westlands are common victim sites in our capital city. We have tried to enforce guidelines but it's always met with resistance from all quarters. Am sure you remember the big conservation fight over the Standard Gauge Railway through the park! With such scenaria, it would much more efforts to realize policy objectives on protecting our environment. Our conservational measures cannot have been effective from the look of things.

#### **3. Underlying Factors for Incessant Environmental Degradation**

I think Kenyans are too ignorant on environmental issues. So a lot sensitization is required. Corruption is a bad monster in this country. Some of our public leaders are the worst when it comes to compliance. We experience a lot of pressure from our seniors, sometimes to approve plans on constructions which are in the prohibited areas. Government funding for our activities is insufficient, we cannot accomplish out targets and we need to improve on our use of modern technology

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

As I have just said, awareness creation is very key. I would that environmental education becomes a compulsory subject in all levels and units of learning. We require a lot enhancement in capacity, more staff on the ground. The government needs to commit more resources on environmental management, even funds and support on innovation. We need to change our values on how we relate with the environment. We require improved media coverage. A lot of motivation on our staff is also necessary.

## **Respondent I<sub>4</sub>** (Muindu, County Director of environment in Narok County, interviewed from the County Office)

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I am not aware of any goal of education learnt in schools except those to do with economic development, national peace, love and unity and international unity. The policies on the environment are familiar with us here although you may notice not so much to the specifics.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Despite the efforts, we will take a while before we hit the mark. Kenyans are notorious involved in environmentally destructive activities.

#### **3. Underlying Factors for Incessant Environmental Degradation**

Technical and financial incapacity. We also have corrupt elements in our workforces.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

The agencies need to involve and ensure that benefits of environmental projects are realized by the citizens. For instance, the penalties for carbon dioxide levy per ton of carbon should help the public in energy-saving innovations, reward lower fossil consumption and support community-based forestry practices.

#### **Respondent I<sub>5</sub> (Njaramba, Director of Environment in Kisumu County Government)**

##### **Background**

Njaramba was the then County Director of Environment and acting chief officer of environment in Kisumu County.

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

We did not learn about the goal and policies on environment in formal schools. Even environmental club was as optional as any other. If you ask the people who work here, many of them have no idea of the policies, leave alone the goal of education.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Although we are trying as a government, there is a lot more to do. When you observe how Kenyans relate with the environment there is a big gap between what they and what they do. Remember what one does is highly affected by what one knows.

##### **3. Underlying Factors for Incessant Environmental Degradation**

My training is basically in education; both my B.Ed and M.Ed are in education. Of course quite a number of us came in with diverse qualifications but we learn on the job. We also have few employees in the ministry, most of them multitask and reaching out to the entire county is a big challenge. We seriously have a problem in our capacity in all aspects ranging from finances, personnel and technology.

##### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Committed sensitization processes are to be put in place for us to succeed. School, training and media approaches are indeed very necessary for Kenyans to change their attitude towards to the environment. When you go to the field and hear Kenyans asking questions like “Kwani huo mto ni wako?” {does that river belong to you?}, you realize we are in a deeper problem as a country than we think. The government has no choice but to commit more resources. Embracing technology on technology is not an option for us.

#### **Respondent J<sub>4</sub> (Mwihaki, a physical planner in Nairobi County Government)**

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

The understanding of issues in environment especially on the impact of human actions on the environment features majorly when probably one is doing environmental science. Otherwise I cant remember anything on such in schools. Out here (implying after school), it depends on ones post-secondary training.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

A lot of what I see is people irresponsibly relating with the environment. Adherence to land use guidelines is enforced with a good measure of difficult. I would not it’s been effective.

##### **3. Underlying Factors for Incessant Environmental Degradation**

“This is a government project and it must be done”. You really have no option but to allow some things. Sometimes they come for approvals when the development has already started. When I insist on regulatory compliance am told “the train has already left the station”. When I ask for explanations, am told “it is you to go”.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

I think all we need is a national conversion around sustainability. In such, the government will be committed to providing resources and opportunities for awareness creation, restructuring of our educational approaches to strongly integrate sustainability, instituting legal frameworks to enable environmentally friendly practices and eliciting citizenry involvement and support in sustainable environment practices.

#### **Respondent L<sub>1</sub> (Jollin, a local Citizen in Mombasa)**

##### **Background**

This respondent was a dealer in mangrove wood at Tudor in Mombasa town, Mombasa County.

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

We were not taught about any goal of education on environmental protection in school. Even when we go for barazas these days, we never told about policies on environmental protection but only told about *Nyumba kumi* initiative and security. We are not told on conservation, but I know the environment is good for humans.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

I don't think any efforts to protect the environment have born any fruit. NEMA people are to blame. They do not perform their duty right and efficiently.

##### **3. Underlying Factors for Incessant Environmental Degradation**

Factors that make Kenyan appear like they do not care for the environment are lack of environmental education. Poverty is a real major issue, people have no jobs.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

The county or national government should provide funds to support us start alternative economic activities that are friendly to the environment. I don't do what am doing for lack of alternatives. I see people littering the streets carelessly. I think education should help us acquire better values.

#### **Respondent L<sub>2</sub> (Mwakinda, a citizen in Mombasa County, was interviewed as he was cutting mangrove trees for timber at Tudor, Mombasa)**

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

We were not any these in schools. Even when the D.C (District Commissioner) or Chief calls us, they only talk about living in peace and harmony, not so much on the environment.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Until we are all supported and involved, we will never get there. Any measures so far, are not successful in that direction.

##### **3. Underlying Factors for Incessant Environmental Degradation**

When I am not at work, I get to do something else to supplement my income. As you may know, times are challenging and people have lost jobs. It is impractical to take care of your responsibilities. This (referring to cutting of mangrove timber) sometimes helps.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Sasa ni mpaka serikali itupe michuzi ya kuanzisha biashara {the Government must give us funds to start alternative income generating activities}

**Appendix L<sub>3</sub>** (Shokando, a citizen in Mombasa County, who was a garbage collector in Mombasa town was encountered and interviewed as he dumped waste on an undesignated site using a truck).

**1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

These things were not taught in schools. Environmental clubs were optional. Look at TVs, radio and even newspapers, there is very little on environmental protection.

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

With all the bad things being done on the environment, you can't talk of any effectiveness.

**3. Underlying Factors for Incessant Environmental Degradation**

As we dump garbage here, the big problem is the county government who has not provided proper guidelines and sites. NEMA watches as this happens. Also people engage in environmentally destructive activities due to ignorance. It is true there are no jobs, but mostly they do not know the negative effects of burning waste in public, charcoal burning and others.

**4. Alternative Measures to Ensure Sustainable Environmental Protection**

May be greater public education through the media. Greater vigilance by the agencies like NEMA and others.

**Respondent L<sub>5</sub>** (Debra, a Kenyan citizen in Machakos County was encountered as she was harvesting sand from a river)

**1. Awareness of the nature of ecocentric goal of education and policies**

I know protecting the environment is good but we did not learn that in school. We knew about peace and unity and the national anthem

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

From the look of things, we have a problem in this country. I see how people are interfering with the environment and I realize we need to do more as people.

**3. Underlying Factors for Incessant Environmental Degradation**

Our member of parliament told us that this is our river. Therefore, we should not allow other people to benefit from what belongs to us. When our leader puts it like that, we follow and cannot allow anyone else here.

**4. Alternative Measures to Ensure Sustainable Environmental Protection**

These youth and women I hear about can be increased so that more or individual could access them for alternative business ventures.

**Respondent L<sub>7</sub>** (William, a citizen in Machakos County)

Background

William was interviewed as he harvested sand along River Thwake in Machakos County.

**1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I think it is only those students who took Geography who probably were taught about goal of education on sustainable environmental protection. The rest of us were never taught. I only recall the goals of education

on love peace and unity and on international integration. The only thing I remember is when the Principal congratulated the environment club members for cleaning the local market.

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

One looking on the way people have destroyed the environment would not say that the efforts are successful. We tried to organize ourselves to manage this sand harvesting but people are difficult to deal. We are far from actualizing any success against environmental destruction.

**3. Underlying Factors for Incessant Environmental Degradation**

Our leaders have not been good examples. Public leadership is one of the biggest problems on environmental conservation in this country. Poverty is also an issue among the people in this locality.

**4. Alternative Measures to Ensure Sustainable Environmental Protection**

If I got another job, i would leave what I do here. I wish there was emphasis on the environment in our schools. I see people and students cut braches of trees as they demonstrating in the streets.

**Respondent L<sub>11</sub>** (Mainga, a citizen in Nairobi County involved in real estate management and had a development on a land considered public land)

**1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I did not hear about any of these in my schooling.

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

If the agencies who are expected to ensure compliance to land use guidelines are the ones flouting them, how do you expect effectiveness? Never!

**3. Underlying Factors for Incessant Environmental Degradation**

Usually land owned against land use guidelines is always a “quick buy or sale”. Such land pieces are cheaper compared to “legal-place” ones. For example, on this piece of land I am the 3<sup>rd</sup> owner and I want to dispose of it. You would find others who are even 4<sup>th</sup> owners.

**4. Alternative Measures to Ensure Sustainable Environmental Protection**

Corruption has to stop if we will ever achieve any goal or policy objectives on our environment. Let the enhance awareness campaigns on the need to protect our environment, otherwise from the way things are going, we will realize soon or later, we have nowhere to call home as human beings.

**Respondent L<sub>12</sub>** (Wanjira, a citizen in Nairobi County who was sampled from a Quarry worker)

**1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I have never heard about any education goal or policy on environment. I know it good to protect the environment.

**2. Effectiveness of the Ecocentric Goal of Education and Policies**

We have been involved in quarrying for a while. I hear there are licenses one should have but we have done without them and nobody really bothers us or even engages us for any awareness and safety discussions. When those NEMA and county officials come, we manage them {which implied bribery}.

**3. Underlying Factors for Incessant Environmental Degradation**

Our salaries are meager. With increasing inflation, we cannot pay school fees for our children. We have no alternatives but to do these kinds of jobs. People have also been laid off.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

The agencies on environment should be more vigilant on enforcement. The government can provide funds for other activities that do not destroy the environment.

**Respondent L<sub>15</sub>** (Jowizar, a resident in South Western Mau in Narok County, which is a gazetted piece of forest in the larger Mau Complex)

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

It is good to preserve our forest and other resources but our schools have little to do with all this. They have succeeded in creating the right awareness levels.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

May be in other areas or places, not here.

##### **3. Underlying Factors for Incessant Environmental Degradation**

I came here in 2001. By then, my parents had been given this piece by a former political leader. Current agents of government, that is, the police and KFS want us to move out. The politicians tell us to stay put. Again, where do we move out to? This is the only place we have called home all these many years.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

I think the politicians have contributed to all this mess. The government should give us alternatives in terms of alternative land.

**Respondent L<sub>16</sub>** (Jomba, a citizen in Narok County was a timber dealer in Narok town)

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

These things are not taught in schools. People from wildlife and forest {referring to KWS and KFS} are slow and corrupt in what they do. They should be busy educating people on the need for conservation and sustainability.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

With all the destruction of our beautiful Mau Forest, how do you talk about effective measures on conserving and protecting our environment?

##### **3. Underlying Factors for Incessant Environmental Degradation**

Many of us are not aware of the necessity of protecting the environment. Sometimes I look at media reports on how we as Kenyans have messed up our environment and I pity the future. No wonder we have shorter rains and high temperatures. People irresponsibly cut down trees for wood and charcoal. NEMA and the country government are meant to engage citizens in conservation activities but not doing enough. About three years ago KFS had training with members of our community to educate us on the importance of trees at our homes and gave us seedlings. Look (pointing at a section of the Mau Forest) at how naked that section of the mountain forest is.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

I tell you the truth, politicians have destroyed Mau. So if anything good has to be done, it must start with them. Go and tell them when you go back to Nairobi. A lot of awareness need be created among our people.

## **Respondent L<sub>18</sub>** (Mwiano, a citizen in Kisumu)

### Background

Mwiano, a local citizen in Kisumu County who was sampled while burning solid waste in public at Kachok.

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

One of my Kiswahili teachers, (in Form 2) would ask us to do poems and songs on Ubora wa Mazingara but then nothing more. We had a wildlife club but I remember we had no teacher patron and only a few students were members

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

The Government and NEMA and any other agencies involved have not played that part right. They have not succeeded really.

#### **3. Underlying Factors for Incessant Environmental Degradation**

We did not get good education. There are no jobs and the local Member of Parliament has not kept his promises on *kazi mtaani* program.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

There must be a lot of education on the environment, especially in those barazas that we attend every now and then. Are these environmental issues taught in schools these days? We require projects that involve us. I do not know how much the government can do!

## **Respondent L<sub>19</sub>** (Liam, a citizen in Kisumu County who was interviewed as he washed vehicles at the shores of Lake Victoria in Kisumu County)

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Was there anything like a goal on education in schools? I can't remember!, not even the policies. Even in our public gatherings called upon by the leaders, I rarely talk on the environment. I can remember the ban on plastics though.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

With such "pain" and poverty, how can measures on environment be effected? Is it my stomach or the environment?

#### **3. Underlying Factors for Incessant Environmental Degradation**

We have searched for manual jobs to no avail. We wash vehicles because it is the only job available to us in this area. The good thing is, you do not need any training to do some of these things.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Serikali itupe makazi ( let the government give us jobs). That is all some of us care about. Otherwise, with the government coming in, we will continue doing this {implying the car washing on the shores of the lake}

## **Respondent L<sub>20</sub>** (Nyerere, a citizen who was a dealer in sand harvesting and sales in Kisumu County)

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Where are those things taught? I am not aware and I suspect many of us are not.

## **2. Effectiveness of the Ecocentric Goal of Education and Policies**

I think with proper involvement and awareness and support, we will be there. So far, we are far below.

## **3. Underlying Factors for Incessant Environmental Degradation**

I know a senior politician who owns a big chunk of Karatang forest (a gazetted forest in Kisumu County). These leaders (politicians and senior government officers) are not a good example. The county and NEMA officers push us because we are ordinary citizens. Let them go for the big fish (senior government officers) and leave the civilians alone.

## **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Sometimes people don't understand the importance of protecting the environment. They think the Government protects forests, rivers and others for the sake of it. We need more education on environmental protection. Can environmental studies be compulsory in schools? So that learners or generally people can understand environmental issues better. Environmental clubs can be mandatory in schools and communities. Even radio broadcasts and public barazas need to have a bigger coverage on the environment.

## **Respondent L<sub>21</sub> (Nganyako, a citizen in Kisumu County)**

### **Background**

Nganyako, a truck driver of a truck in Kisumu County was found driving a truck that was emitting thick cloud of petroleum exhaust fumes

### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

We were never taught about goal and policy, unless that was taught in the schools we did not attend. No, I think those goal and policies don't even exist

### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

We do not see anyone from NEMA or even the county government educating or even questioning us on unroad worthy vehicle. It is only the policemen, who bother us once in a while but we bribe them.

### **3. Underlying Factors for Incessant Environmental Degradation**

Corruption happens everywhere. Poverty is also a big player in environmental degradation. I know with money you can "everything going your way".

### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

The agencies that ensure environmental safety should be vigilant in their duty. Kenyans should discard the tendency to get "get rich quick". It drags progress on sustainability. Our leaders must be good examples. Corruption must be avoided but from the top.

## **Respondent L<sub>22</sub> (Nyori, a 28-year old citizen and university graduate from Turkana County, who was interviewed while transporting charcoal)**

### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

In school there was a lot of clamour for national peace love and unity, national cohesion and international integration. I cannot remember the teachers would say on sustainability.

### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

They could be effective but with little success. Kenyans have really messed up the environment. I do not know what the next generation will find.

### **3. Underlying Factors for Incessant Environmental Degradation**

Poverty and underemployment are major issues on this fight. Lack of proper awareness also hinders the war.

### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

If the government gives support to alternative economic activities the better, increasing allocation and access to youth and even a national fund for sustainable development like clean technology would support our youth in creating ideas on conservation and at least boost our participation in conserving the environment.

## **Respondent L<sub>23</sub> (Kandanda, a citizen in Turkana County)**

### **Background**

Kandanda is a charcoal dealer around Loima Hill (a gazetted forest) in Turkana County

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Am not aware of any goal or policy on the environment. We were never taught those things in school. I only know education for national unity. We are told to work hard in school to get employment, which has not worked for me and some of my friends.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

If there are any efforts, like you are saying, a goal or policy on environmental protection that the government has put in place, then they are not bearing any good fruits.

### **3. Underlying Factors for Incessant Environmental Degradation**

Poverty and unemployment are the biggest reasons we do indulge in burning charcoal. Bribery is also rampant. When those KFS officers find us here, all they want is money.

### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

The government should increase funds for alternative economic activities. The barazas we attend should help us be awareness on environmental issues and how responsibly do charcoal burning and other activicites.

## **Respondent L<sub>24</sub> (Jumbiri, a citizen was a local charcoal burner from Loima Hill, a gazetted forest in Turkana County)**

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I don't know. In our school there were no environment clubs, not even in our community today.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

I have not seen any success, may be in Nairobi and other big towns.

### **3. Underlying Factors for Incessant Environmental Degradation**

In our family of eleven, only three of us managed to attend secondary school. The rest of us dropped out after primary. Poverty could not allow us to proceed. As a result, we can only burn charcoal since it requires no training.

### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Can the government take some to colleges so that we can secure better jobs? Or even provide activities or projects that benefit all of us?

## **Respondent L<sub>25</sub>** (Mwaruko, a citizen in Murang'a County)

### Background

Mwaruko was quarry worker, found Quarrying Murang'a County.

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

Schools do not teach those things though i heard about love and unity. even the chiefs in their barazas are usually concerned about security and unity.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Environmental protection efforts in Kenya are not successful. For example, look at how forests have been cleared. We have been quarrying all these years, and these quarries are a big risk to our lives and others.

#### **3. Underlying Factors for Incessant Environmental Degradation**

There are no jobs and poverty bites a lot. NEMA has negated their responsibility and the County government is not bothered. We are left on our own, this place is so dangerous but we have no option.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

If the government would provide funds for alternative activities, some of these involvements would be less.

## **Respondent L<sub>26</sub>** (Jimmy, a citizen in Murang'a County who owned property in Murang'a town)

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I doubt if schools teach these things.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

If there are any benefits to the efforts, may be in the future if the right measures are put in place.

#### **3. Underlying Factors for Incessant Environmental Degradation**

It is possible to have anything go for you as long as you have money. These officers from both national and county governments are easy to go your way. When they come to complain you can always turn their face {implying bribing the officials}.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

I think the state agencies are sometimes to blame. The officers need to change their attitude and be committed to duty. They should stop taking bribes.

## **Respondent L<sub>27</sub>** (Mwalundo, a citizen who was a charcoal burner in Embu County)

#### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

There was so little on education goal in education may be for those who did Geography. I have no idea on environmental policies.

#### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

Practices on environmental sustainability have not been effective in this part of the world.

#### **3. Underlying Factors for Incessant Environmental Degradation**

I have a Diploma in Sales and Marketing but for the last five years I have not gotten any formal employment...instead of staying idle, I have decided to burn charcoal as you can see. I have a family and life must continue.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

Let the government create job opportunities for the millions of young people out here (out of school and jobless). Other issues can come later.

**Respondent L<sub>28</sub>** (Dalton, a citizen and a timber dealer, interviewed while logging timber in Mulinduko {a gazetted forest} in Embu County)

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I do not know any.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

All that I know is that Kenya is not doing well as a country in environmental protection. We have really messed up things. Am told Rwanda is doing pretty well. We should just borrow from them.

##### **3. Underlying Factors for Incessant Environmental Degradation**

Sometimes these politicians and senior government officers lead in grabbing and encroaching gazetted pieces of land in our country. As a result, they have no moral authority to speak against such vices. You would see a government officer grow rich so quickly. One has no idea what they do up there! There is a lot of looting in the government my friend. The common citizen has nothing to loot.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

I wish the institutional officers on environment would be more vigilant. They have never been seen on the ground. Maybe they are not enough to manage the whole county. I cannot remember the last time they engaged us in protection. They should involve us to achieve sustainability. I think we know better what is on the ground. The government should embrace a bottom-up approach instead of top-down on matters to do with environmental protection.

**Respondent L<sub>30</sub>** (Ndiuni, a citizen in Embu County)

##### **1. Awareness of the Nature of Ecocentric Goal of Education and Policies**

I can't remember any goal of education on the environment.

##### **2. Effectiveness of the Ecocentric Goal of Education and Policies**

I see people throwing litter and garbage carelessly in the streets, I do not think whether as a country we are moving in the right direction.

##### **3. Underlying Factors for Incessant Environmental Degradation**

The police and NEMA people are busy collecting bribes. There is lot of poverty among our people. The leaders in government are not good examples themselves, they grab public everywhere.

#### **4. Alternative Measures to Ensure Sustainable Environmental Protection**

It is necessary that conservational projects of direct benefit to people like storm water recycling, greenfields, and wetland projects be emphasized. We need to create public awareness on e-governance to enable reduction in paper use and less travelling. Let's promote and publicize the 3Rs: Reduce, Reuse and Recycle and make eco-houses affordable in Kenya.