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INSTITUTE OF DIPLOMACY AND INTERNATIONAL STUDIES

MA RESEARCH PROJECT

**MULTILATERAL FOREST MANAGEMENT INITIATIVES AND
ENVIRONMENTAL SECURITY IN EAST AFRICA: A CASE STUDY OF KENYA**

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DECLARATION

I hereby declare that this research project is entirely my own original composition. It has not been presented in any other University.

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This research project has been submitted for examination with my approval as University Supervisor.

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ABSTRACT

Multilateral forest management is the international agreement that covers provisions whose intention is to control certain actions connected to forests. Nevertheless, there is no general lawful instrument in which forests are the major focus; there is no existing global accord in which the entire social-Economic and environmental elements of forest ecosystems are included. The existing significance on development collaboration amongst these elements may not be adequate towards guaranteeing sustainable forest management, and hence shift its focuses within the Convention on Biological Diversity to include sustainable forest management, additionally, numerous Forest Management Initiatives have also been undertaken. Environmental safety assesses risks and threats caused by environmental measures and trends to the country, persons, and communities. This research seeks to examine multilateral forest management initiatives and environmental security in East Africa with focus to Kenya by looking at the status of multilateral environmental agreements toward addressing regional environmental security in East Africa. Further assess the prospects challenges and examine the key actors and strategies to address forest management through multilateralism and other initiatives. This research utilized mixed of both qualitative and qualitative study approaches and use both primary and secondary data sources. Questionnaires will be used and the results of this questionnaire can significantly benefit stakeholders to shape strategic direction in relations of environmental security.

The study made the following recommendations based on the finding. It is imperative to devise a communication plan on environmental offences that will be equally internal and external. There is a need to conduct more studies on diversity of sectors to bring on board authentic levels of the crimes planned, and others which may not have been recorded. Key amongst these offences are those associated with dangerous wastes, where data is negligible and non-authoritative, particularly on discarding and haulage of waste. The situation is comparable with bush meat trade, snaring, and unlawful logging. Multi Agency would be critical in management of forest resource apart from Kenya Forest Service; there are other organization and stakeholders who are critical in Management of forest for sustainable development. Bringing awareness on the scope, nature and prominence of environmental crime, predominantly amongst local communities, and formal and informal institutions, will assist in the fight against it.

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LIST OF ABBREVIATIONS/ACRONYMS

AU-African Union
CBD-Convention on Biological Diversity
CFC-Chlorofluorocarbons
CITIES-Convention on International Trade in Endangered Species
CSD-Commission on Sustainable Development
CFA-Community Forest Association
EAC-East African Community
EALA-East African Legislative Assembly
EMCA-Environment Management Coordination Act
EU-European Union
FAO-Food and Agriculture Organization
GDP-Gross Domestic Product
GCF-Global Conservation Fund
IGAD–Intergovernmental Forum on Forest
IMF-International Monetary Fund
IOM-International Organization for Migration
IPCC-Intergovernmental Panel on Climate Change
MEA-Multilateral Environmental Treaties
MOU-Memorandum of Understanding
MEAs-Multilateral environmental agreements
MEWNR-Ministry of Environment and Water Resources
MDGs-Millennium Development Goals
NAPAs-National Adaptation Programme of Actions
NEPAD-New Partnership for Africa’s Development
NES-National Environment Secretariat
NRM-Natural Resource Management
NTFPs-Non-Timber Forest Products
UNCCC-United Nation Convention on Climate Change
UNCCD-United Nation Convention to Combat Desertification
UNCED-United Nation Conference on Environment and Development
UNCHE-United Nations conference on the environment
UNCLOS-United Nations Convention on the Law of the Sea
UNECA-The United Nations Economic Commission for Africa

UNEP-United Nation Environmental Program

UNFCCC-United Nation Framework Convention on Climate Change.

UNISDR-United Nations International Strategy for Disaster Reduction

WWF-worldwide Fund

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CHAPTER ONE

1.1 INTRODUCTION TO THE STUDY

1.1.1 Background of the study

It is usually acknowledged all over the globe that the environment has a critical importance to play as the world faces the problem of global warming and change in climate, food shortage and livelihoods improvement for an increasing number of people worldwide. The consequences of which forms a block to the attainment of sustainable development and environmental sustainability.

Environmental security mainly observes various threats caused by environmental events and activities to individuals, states and community. For instance, the world loses about fifteen million hectares of forests each year.¹ Increasing temperature and rainfall pattern change in the Amazon rainforest are connected with increased danger of disastrous dieback with risky local, national, regional, and global results.² For instance, the Congo Basin, the intense pressure that mineral exploitation and movement network will pose to the integrity of rainforest area. In Africa there is intrinsic linkage between forests and climate change and this goes past carbon emission but also touches on environmental security issues.³ Thus in order to address environmental security matters, under international law the main instruments available for state to work together, on a wide range of universal environmental challenges are universal conventions and agreements on environment and natural resources also known

¹ Intergovernmental Panel on Climate Change (IPPC). *Climate Change and Land*. An IPCC Special Report on climate change, desertification, sustainable land management, food security, and greenhouse gas fluxes in terrestrial systems, (2019), pp. 4-5.

² Anon, Roy. *National Forest Resources Monitoring and Assessment*. Key Findings Document. NAFORMA, Ministry of Natural Resources and Tourism, United Republic of Tanzania, (2015), p. 6-9.

³ Cheboiwo, Jsohua. *Potential Opportunities in Timber Trade between Kenya, Democratic Republic of Congo and Tanzania*. Kenya Forestry Research Institute (KEFRI) Policy Brief No. 4. Kenya, (2015), pp. 10-15.

as Multilateral Environmental Agreements (MEAs).⁴ The perception of environmental security from the academic angle is seen as the relationship between concerns of security and natural environmental concerns.

Ambalam contends that like the rest of the world, Africa, is facing numerous environmental security issues that result to direct social, environmental and economic impacts. In order to solve the multifaceted environmental problems, governments implement the instruments of Multilateral Environmental Agreements.⁵ Some of these problems include exploitation of biodiversity and other natural resources unsustainably, unlawful trade in threatened plant and animal species, effluence and climate change.⁶ Thus these encounters pose a serious hazard to the regions' sustainable development goals.

Sand posits that African states such as, South Africa, Ghana, Botswana, Nigeria and others tends to use at least two approaches in implementing MEAs and other international environmental commitment, that is, regional and national implementations.⁷ At the regional level, Africa uses model laws, charters, declarations, guidelines and other like instruments to have common approaches and to influence the development of national environmental actions, a perfect case in point is the Nagoya Protocol.

The second approach that Africa uses is the national approach through the direct or indirect incorporation of MEAs in national laws, institutions, policies and programmes including the constitution.⁸ Thus most of the modern environmental laws in Africa integrate

⁴ Ibid, (2015), p. 21.

⁵ Ambalam, Kannan. Challenges of Compliance with Multilateral Environmental Agreement: the case of the United Nations Convention to Combat Desertification in Africa, (2019), pp. 2-5.

⁶ Ibid, (2019), p. 6-7.

⁷ Sand, Peter. *The Effectiveness of Multilateral Environmental Agreements: Theory and Practice*. International Environmental Law-making and Diplomacy, University of Eastern Finland, (2016), pp. 11-12.

⁸ Ibid, (2016), p. 14.

MEAs in various forms including in sectoral laws such as land, water, air, waste, soil, wildlife and genetic resources.

Lorraine states that MEAs are agreements between states which may be in form of soft-law and “hard-law” hence spelling out non legally-binding philosophies which parties are obliged to address a specific environmental subject or which require legally compulsory actions to be began towards an environmental objective.⁹ The global environmental issues that MEAs are planned to respond to in sub Saharan African (SSA) context include hostile influences of climate change, the loss of biological multiplicity/diversity, depletion of the ozone, marine effluence, trade in vulnerable species, and destruction of wetlands.¹⁰

In East African (EA) forestry insecurity is perceived to be ‘victimless’ and least prioritized. This makes such criminalities to hasten the required response from enforcement teams and the government. Ultimately illegal forestry activities become a security threats to the region.¹¹ In East Africa there is high demand for wood for timber, poles and fuelwood and this stimulates the illegitimate trade, hence threatening regional security and stability. Kenya’s unique landscape supports rich wildlife habitat and a wide range of various essential scientific wildlife of high economic value.¹² Kenya’s goal is to advance its MEAs’ capacity to implementation, in order to boost national economic growth and eliminate poverty hence contributing towards the countries global ecosystem integrity. However, despite this effort the state of biodiversity in the country has continued to deteriorate.

⁹ Lorraine, Elliott. Transnational environmental crime in the Asia-Pacific: Complexity, policy and lessons learned, in Elliott L (ed) Transnational crime in the Asia-Pacific: A workshop report. Canberra: RSPAS, Australian National University, (2007), pp. 1-8.

¹⁰ Kamweti, David and Osiro, Deborah. *The environment and law report in Kenya*. Kenya Law Reports, Environment and Land, Nairobi, (2009), pp. 1-13.

¹¹ Benedickson, Jamie. *Environmental Law*, Toronto: Irwin Law, (2009), p. 380.

¹² Mukeka, Joseph and Ogutu, Joseph. *Human-wildlife conflicts and their correlates in Narok County, Kenya*. Kenya Wildlife Service, Nairobi, Kenya. *Global Ecology and Conservation Journal*, (2019), pp. 1-5.

1.1.2 Statement of the Research Problem

Elliott argues that many prevailing international agreements contain provisions that are aimed at regulating certain actions that are associated to climate change. Many of the African states are subjects to these Multilateral Environmental Agreements. Nevertheless, there lacks global legal instrument where forests management and all economic and environmental aspects of forest ecosystems are subject to and no international treaty in which they are included.¹³ In majority of the African states the achievement of the objectives of many of these MEAs still remains a far target in most instances due to varied reasons.

The Government of Kenya has taken initiatives to implement various biodiversity MEA at a national level as part of its international obligation.¹⁴ Despite the recent advances, attitudes to environmental security, it is only at the national level, that attempts are being made to domesticate the MEAs through a wide range of actions which includes National Biodiversity Strategy Action Plans (NBSAPs) and the National Environmental Action Plans (NEAPs).¹⁵ Kenya now require to direct its law enforcement apparatuses, indicating that lack of compliance with the conditions means losing the war to save the environment.

In the County levels, because of poor forest management initiatives, illegal forest activities have escalated. The government has made steps to advocate for open door policy, within the environmental realm, these steps have not yet taken roots. The lack of available enforcement information, forest management initiatives and lack of insufficient proactive data disclosure undermine the contribution of citizens in environmental security enforcement.

¹³ Elliott, Levy. *Transnational environmental crime in the Asia-Pacific: Complexity, policy and lessons learned*, in Elliott L (ed) *Transnational crime in the Asia-Pacific: A workshop report*. Canberra: RSPAS, Australian National University, (2007), pp. 1-8.

¹⁴ ISS [Institute for Security Studies]. *Environmental Crime Status in Tanzania*. Report of the Validation Workshop held in Dar-es-Salaam, Tanzania. Pretoria, South Africa: Institute for Security Studies, (2008).

¹⁵ Ambalam, Kannan. *Challenges of Compliance with Multilateral Environmental Agreement: the case of the United Nations Convention to Combat Desertification in Africa*, (2019), p. 9.

1.1.3 Research Objectives

The general objective of the study is to examine multilateral forest management initiatives and environmental security in East Africa. The specific objectives were as follows.

- i.** To analyse the status of multilateral environmental agreements toward addressing regional environmental security in East Africa.
- ii.** To assess the prospect and challenges of multilateral forest management initiatives and environmental security in East Africa.
- iii.** To examine the roles of key actors, strategies and frameworks in addressing forest management issues through multilateral forest management initiatives in Kenya.

1.1.4 Research Questions

- i.** What is the critical analysis of the status of multilateral environmental agreements toward addressing regional environmental security in East Africa?
- ii.** What are the prospects and challenges of multilateral forest management initiatives and environmental security in East Africa?
- iii.** What roles do the key actors, strategies and frameworks in addressing forest management issues through multilateral forest management initiatives in Kenya?

1.1.5 Literature Review

In this section a good numbers of scholars have made attempts to elaborate on multilateral forest management initiatives and environmental security in East Africa. In addition, these subsections reviewed theoretical and empirical literature on the subject matter.

1.1.5.1 Multilateral agreement and environmental security

In various part of the world, climate change effects on social-natural contexts will be experienced through changes in mean conditions, over long-period of time, additionally through increments in the power and sometimes recurrence of surges, dry seasons, tempests and violent winds, fires, heat-waves, and scourges. There have been a number of attempts at

defining and measuring the of multilateral agreements effects by changing the conduct of States at the level of national environmental plans, policies, strategies and regulations.

Ambalam states that environmental laws and conventions form part of important overall frame work which is as result of multilateral environmental agreements. In order to harmonize local legislation, mutual or regional agreements, MEA form the main international legal foundation for universal efforts to tackle specific environmental matter.¹⁶

Sand argues that at the moment there are a number of aatmospheric related conventions, UNFCCC, Kyoto, Ozone; multilateral environmental agreements implementation have been in the form of climate change, energy, air quality policies and laws. To respond to the ever-growing problem of air quality, Africa has taken some steps by making regional “agreements” with the objective of regulating, preventing, controlling and abating air pollution to ensure clean and healthy air. These agreements are, however, not binding as none is yet to come into force. The key ones are the (i) The Lusaka Agreement 2008 on SADC Regional guiding principle structure on Air effluence (ii)The Nairobi accord 2008 on Air Pollution Framework in Eastern African Regional (iii) Abidjan Agreement-2009 on Central and West African Regional structure accord on Air Pollution and (iv) North African Framework Agreement on Air Pollution.¹⁷

Zulu opines that matters of climate change continue to persist. Outside of these short- and long haul changes, which are anticipated to happen with elevated amounts of assurance,

¹⁶ Ambalam, Kannan. Challenges of Compliance with Multilateral Environmental Agreement: the case of the United Nations Convention to Combat Desertification in Africa, (2019), pp. 2-5.

¹⁷ Sand, Peter. *The Effectiveness of Multilateral Environmental Agreements: Theory and Practice*. International Environmental Law-making and Diplomacy, University of Eastern Finland, (2016), pp. 11-12.

likewise exist fairly more unquantifiable dangers of high-effect occasions.¹⁸ These incorporate dissolving of icy masses and permafrost which may add a few meters to worldwide ocean levels, breakdown of the Thermohaline Circulation (THC)¹⁹ which may bring about noteworthy provincial atmosphere changes in the northern half of the globe, and extensive scale shifts in the Asian rainstorm and the El Nino Southern Oscillation marvel.²⁰

Worldwide there is a major problem of biodiversity conservation. The reasons vary from lack of political will, resistance from communities to government approaches in conservation. In 1990, global forest and environmental convention was initiated under International negotiations. This proposal was authorized by the G-7 key developed countries. During that period, it was believed that it was reasonable to finalise a forest agreement in 1992. This is happened during a meeting at Rio de Janeiro, Brazil when the United Nations Conference on Environment and Development (UNCED) took place. However, during the discussions in Rio it became clear that the international community would not agree on constructing or drafting the content of forest convection.²¹ A heated discussion arose as to whether such a convention ought to be discussed at all. In its place, the juridical lame "Non-Legally Mandatory Authoritative Declaration of Principles for a Universal Agreement on the Management of all Types of Forests Conservation and Sustainable Development" (Forest Principles) was accepted. A non-legally binding statement by its nature needed more

¹⁸ Zulu, Chitumba. *Problems with participatory mapping in forest management. A case of Handei Village Forest Reserve*, East Usambara, Muheza, Tanzania. M.Sc. Thesis (unpublished). ITC, Holland, (2004), p. 37.

¹⁹ Thermohaline circulation (THC) is a part of the large-scale ocean circulation that is driven by global density gradients created by surface heat and freshwater fluxes. The adjective *thermohaline* derives from thermo - referring to temperature and *-haline* referring to salt content, factors which together determine the density of sea water. Catherine, McMullen. *Climate Change Science Compendium*, UNEP, (2009), p. 53.

²⁰ Catherine, McMullen. *Climate Change Science Compendium*, UNEP, (2009), p. 57.

²¹ Sand, Peter. *The Effectiveness of Multilateral Environmental Agreements: Theory and Practice*. International Environmental Law-making and Diplomacy, University of Eastern Finland, (2016), pp. 11-12.

emphasis, indicating divergence views during the UNCED discussions.²² However the description that it was "authoritative" could not do anything to give it the binding agreement weight.

In the post-UNCED institutional action with reference to forests, it was not necessary to discuss what the conflicting opinions were; it suffice to say that, the 1995 to 1997 Intergovernmental Panel on Forests (IPF), the 1997 to 2000 Intergovernmental Forum on Forests (IFF,) and 2000 to the present United Nations debate on forest (UNFF), the global force to achieve lawfully compulsory accord has been progressively fading.²³ The declining willingness to arrive at a universal agreement is not restricted to forests only, however this can as well be observed in other parts of global environmental law, as demonstrated recently on areas adjacent to the recognition of Kyoto Protocol on climate change controversies.²⁴

In 1992, states demonstrated a well-built sense of necessity and special cooperative spirit amongst themselves to put the sustainable growth programme for the prospect of the globe. If the highest accomplishment during those environmental hey days on the Forest Principles were clearly outlined during the onset of the conference, a significant lawfully requisite tool appears a fewer practical prospect. Perhaps it would even be difficult to achieve international consensus on the Forest Principles if they had to be negotiated today.

The United Nation Framework on Forests (UNFF) and mutual affiliation on forest (CPF) was basically developed to maintain the effort and constitute the current global agreement on forest. The arrangements mandates was to strengthen a extended period political dispensation to sustainable forest management and process in a consistent way which is complementary towards the prevailing lawfully compulsory instrument significant

²² Catherine, McMullen. *Climate Change Science Compendium*, UNEP, (2009), p. 57.

²³ Sand, Peter. *The Effectiveness of Multilateral Environmental Agreements: Theory and Practice*. International Environmental Law-making and Diplomacy, University of Eastern Finland, (2016), pp. 11-12.

²⁴ Ibid, (2009), p. 62.

towards forests.²⁵ In developing states and regions of the world, global warming and climate change poses serious danger to economic development particularly in Africa. This is due to variations in natural resources and systems, and the long-lasting prosperity and the survival of already vulnerable populations. As a result of this will lead to persistence of social, economic, and environmental susceptibilities particularly for the economic sector and livelihood development.²⁶ In Africa Global warming and Climate change variability has led to increased disaster risks and its associated with additional burden to sustainable development.

1.1.5.2 Challenges of Multilateralism and Environmental Security

In this Sub-Region, the East African Community forest management and protection bill was enacted in 2015. The main objectives being to provide for management and protection of the national forests and trans boundary forest ecosystem, regulate cross border trade in forest products and make general provisions for regional forest management, monitoring and evaluation and reporting. This was informed by the 1992 Rio Earth Summit which saw the coming of many conventions on environmental protection and biodiversity conservation initiatives.²⁷

Environmental security deals with the control of various threats, which is as a result of interaction between human beings and nature which comprises of extraction of natural resources or conversion of forests for crop cultivation for food for livelihood purposes and in,

²⁵ Sand, Peter. *The Effectiveness of Multilateral Environmental Agreements: Theory and Practice*. International Environmental Law-making and Diplomacy, University of Eastern Finland, (2016), pp. 11-12.

²⁶ IPCC report. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, (2007), p. 29.

²⁷ Alleny, Braden. *Environmental Security. Concept and implementation*. Volume 1, (2000), pp. 5-9.

infrastructure development by the government.²⁸ Additionally, environmental Security protects people from environmental threats such as natural and manmade disaster which include threats from natural catastrophes, ecology degradation, loss of biodiversity, desertification, effluence from air and water, absence of access to clean water, Forest degradation and climate change impacts.²⁹ Therefore these are common phenomenal in East Africa countries.³⁰ The state is the major actor in providing security to the people is the state because it is assumed that environment becomes securitized when environmental problems coerce the state to spend a lot of resources to handle the impacts.³¹

Environmental security scrutinizes threats brought about by environmental actions, their impacts to people, societies and the states. This might put a lot of emphasis on the human conflict impact on the environment, and the issues of environmental problems cross state boundaries. environmental security problem began to receive a lot of attention In the late 1980s, with the resulted publication of many academic and policy articles journals and this led to the shift from a state-centric approach and emphasize the security consequences of environmental issues for individuals, groups, communities, ecosystems, and the planet as a whole.³²

Aleny contends that most environmental security issues are not restricted to a certain region. This is because environmental degradation usually links to to the global ecology as a

²⁸ Ibid, (2000), p. 11.

²⁹ Chaundry, Shazia. *The impact of climate change on Human security. The case of Mau Forest Complex. Journal of Development rural community.* Vol 58. (2015), p. 7.

³⁰ Catherine, McMullen. *Climate Change Science Compendium*, UNEP, (2009), p. 62.

³¹ Geun, Lee. *Environmental security in East Africa.* Environmental security complex, volume 26, (2002), pp. 77-91.

³² Liftin, Karen. *Constructing environmental security and Ecological interdependence.* Journal Volume 5, (1999), pp. 359-372.

whole.³³ Nevertheless, environmental problems or concerns such as trans boundary in nature and those that run cross a regional boundary need to be handled at the regional level. Besides, due to the probability of forming a "tragedy of the commons" when the universal, rather than regional ecosystem is involved, states requirement is to divide up the global commons into a few regional units to intensify the success of managing trans boundary environmental matters especially forest conservation and management issues.³⁴

In developing world, Human security indicates to a comprehensive international vulnerability whose defenders challenge the customary thought of national security by belligerence that the best possible reference for security must be the individual instead of the state.³⁵ People-focused perception of Human security holds that a security is essential for state, local and global strength.

In the international system Violence appears to be on a long-term decline. Climate change is likely to create more violent conflict as mentioned in 2001 and 2007 on the third and Fourth appraisal reports beginning the Intergovernmental Panel on Climate Change (IPCC), available respectively.³⁶ The experimental literature testing for associations between climate change and a variety of form of argument has undergone a major growth ever since then.

Buzan opines that security went through many progressive changes at the connectional point after the end of the Cold War. And this is basically where the beginning of

³³ Alleny, Braden. *Environmental Security. Concept and implementation*. Volume 1, (2000), pp. 5-9.

³⁴ Ibid, (2000), p. 13.

³⁵ Leitzmann, Chrales. *Nutrition ecology: The contribution of vegetarian diets*. Am. J.Clinical Nutrition: 78 (2003): pp. 657- 659.

³⁶ Ibid (2003), p. 689.

human security are to be found.³⁷ According to Buzan *et al.*, some of these changes involved addition of new non-military aspects of security, including climate issues, economic, demographic, information, health together with other genres that incorporated other players like non-state actors, such as communities, non-governmental organizations, local leaders, trend setters among other groups.³⁸

The Eastern Africa's coastal forests and Arc Mountain in Tanzania's are internationally documented by biologists as centre of Endemism, home to species establish nowhere else on the world. For the most of the coastal plain forests, occupied by people for thousands of years, have extended since been cleared. A mere 10 percent of the original coastal forest habitat remains and the surviving delicate patches are a riches trove of attractive plants and animals, some of them unique to only one or two forest remnants.³⁹

Barr argues that the reduction glaciers of East African Mountains could have grave hydrological consequences on and around the three glacierized ridges of East Africa Mountains, which is in Kenya, Kilimanjaro and Rwenzori).⁴⁰ Climate change could have damaging effects and can be felt in the short-term. These could comprise natural hazards, such as floods, landslides, and hurricanes; and in the long-term, through firm environmental degradation.⁴¹ The unfavourable effects of these measures are by now felt in several countries

³⁷ Buzan, Barry, Ole Waeve and Jaap de Wilde (1998), *Security: A New Framework for Analysis*, Lynne Rienner Publishers, London, (1998), p. 33.

³⁸ Ibid, (1998), p. 37.

³⁹ IPCC report, (2007), *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, p. 29.

⁴⁰ Barr, Jane and Chander, Arshia. *Africa without glaciers*, UNEP, (2012), pp. 2-4.

⁴¹ World Health Organization. *Gender inequities in environmental health*. 25th Session of the European Environment and Health Committee, (2008), p. 60.

and comprises in agriculture, areas of food security, ecosystems, biodiversity and water resources; human health; human settlements and movement patterns of people.

The relationship between mountain forests biological communities and human security is equal. While backwoods corruption adds to human instability, the converse is likewise valid. Frailty as unending neediness, common war, or the mass developments of inside uprooted individuals can annihilate environments and as asset rich, multi-utilitarian frameworks, forest specifically frequently endure the worst part of instability.⁴²

Forests in Eastern Africa's are crucially significant for the people of the region, and also for biodiversity, and movement of Palearctic bird species. Tanzania's Eastern Arc Mountains and the coastal forests and are also universally known by biologists.⁴³ Mountain forests make up 33 percent of all normal woodland spread around the world. They are found on all mainlands except for the Antarctic. They develop past a height of 500 meters.⁴⁴ That area implies mountain woods comprise of trees that aren't found in lower-lying zones. The trees have adjusted to the cool atmosphere, substantial deluges and extreme daylight.⁴⁵ In low-lying territories, they're pressed out by various tree species.

In the meantime, the woodlands have a cooling impact and make for an adjusted provincial atmosphere. Mountain forests are home to a novel gathering of plant and creatures. They incorporate unequivocally specific species that you don't discover in low-lying territories. The jagged scene and diverse temperature zones likewise prompt distinctive

⁴² Ibid, (2008), p. 67.

⁴³ Duraiappah, Annathan. *Exploring the Links- Human Well-Being, Poverty & Ecosystem Services*, UNEP/IISD, Nairobi, Kenya, (2004), p. 67.

⁴⁴ Ibid, (2004), p. 70.

⁴⁵ World Health Organization. *Gender inequities in environmental health*. 25th Session of the European Environment and Health Committee, (2008), p. 60.

creature and plant natural surroundings. Some of these are little. In this manner you have islands of differing plant and creature species.

Over the long haul, woodland protection will just succeed in states of security for the groups living in and around them. Woodlands need human security as much as human security needs forests. Counting the ecological measurements of powerlessness in the comprehension of human security would center open consideration, arrangement producers and assets on the long haul estimation of backwoods preservation and reasonable woodland administration.⁴⁶

Forests are esteemed just over the fleeting and fundamentally as wellsprings of timber. This undervaluation implies that the genuine expenses of deforestation and mangrove devastation are not considered in strategy choices that approve upland logging, shrimp ranch extension or beach front tourism advancement in a debacle inclined ranges.⁴⁷ It is these long haul and difficult to-quality costs that get to be evident after common catastrophes and it is the neighborhood influenced individuals that are left to endure them.

Climate change is an inauspicious reality. Researchers let us know that the world is getting hotter by the day.⁴⁸ Great climate wonders, for example, surges, dry spells, heat waves and twisters, experienced in various parts of our globe, are among the broad results of climate change, giving us a biting preview of what more terrible may come sooner rather than later.⁴⁹ The connection between climate change and human security is currently as clear as ever. Concentrating on dangers disregards the naturally related open doors accessible to

⁴⁶ Duraiappah, Annathan. *Exploring the Links- Human Well-Being, Poverty & Ecosystem Services*, UNEP/IISD, Nairobi, Kenya, (2004), p. 67.

⁴⁷ Drakenberg, Olof. *Greening Development Planning: A Review of Country Case Studies for Making the Economic Case for Improved Management of Environment and Natural Resources*, OECD Environment Working Papers, No. 5, OECD publishing, Paris, France, (2009), p. 8.

⁴⁸ Catherine, McMullen. *Climate Change Science Compendium*, UNEP, (2009), p. 57.

⁴⁹ Ibid, (2009), p. 90.

enhance human security. Securing and upgrading nature can have exceptionally constructive results for individuals' occupations, prosperity and open doors for satisfaction. While ecological corruption builds the potential for hardship, relocation and debilitation, biological community trustworthiness is liable to diminish vulnerabilities.

Kenya's high-height woodlands are the hotspot for the greater part of the water on which the dry spell tormented country depends.⁵⁰ Presently, following quite a while of government-abetted misuse of these districts, another protection system of working with neighbourhood groups is hinting at achievement. Expelling unlawful pioneers has been moderate in spots, particularly where the pilgrims still have great political associations or where no place has been found to move them. What's more, individuals with certifiable connections to the water-tower backwoods have been unjustifiably gotten up to speed in the evacuations.⁵¹ The most remarkable casualties have been individuals from the generally woodland abiding Ogiek tribe, who say their true rights have been disregarded.

1.1.5.3 The role of actors and frameworks to address forest management in Kenya.

The prospect of the World's forests is unsure today than at any time from the time when science-based sustainable forest management was developed in various developed states more than a century ago. Experts in Forest that there is rising intra-regional and inter-regional illegitimate business of timber and other forest commodities flowing across Tanzania, Kenya, Uganda, Madagascar, Zambia, Mozambique, Malawi, over and above additional in the direction of the Western and Central Africa. It is vital to note that in East Africa the flows of timber within, to and from countries in Eastern is important due to the

⁵⁰ Catherine, McMullen. *Climate Change Science Compendium*, UNEP, (2009), p. 57.

⁵¹ Duraiappah, Annathan. *Exploring the Links- Human Well-Being, Poverty & Ecosystem Services*, UNEP/IISD, Nairobi, Kenya, (2004), p. 67.

wide spread of illegal logging in recent years that had serious effect on the forest resources in the region, leading to environmental, social and economic consequences⁵².

Kenya has a total forest area of 2.4million hectares comprising of indigenous and exotic plantations trees meant to provide timber and poles as building material and charcoal as fuel from indigenous tree species. Currently, the forest cover stands at 7.2% according to (KFS Annual report, 2019) which is way below the internationally recommended at 10%. However, the forest sector faces many forest conservation and management challenges which require well thought strategies and frameworks to address them. The major forest management issues in East Africa and in particular Kenya are forest mismanagement including forest destruction through illegal felling of trees, forest fires, failure to plant trees in clear felled areas, encroachment and government infrastructure development such as road and dams constructions.

Kenya as a country, keep on to contribute to sustainable management of the environment by forcing the impact of current environmental problems such as international climate change, ozone layer reduction, ocean and air pollution, and resource deprivation. This will require grappling with the unique features of environmental international relations, and adapting attitudes and other strategies accordingly.

One of the major actors in forestry sub sector is Kenya forest service which is a lead agency in forest management and conservation has put in place frameworks and strategies to address the issues. The Forest policy of 2014 provided for a structure to develop forest governance, resource distribution, partnerships and partnership with the state and non-state

⁵² Kenya Forest Service annual report, (2019).

actors to enable the sector contribute in meeting the country's development and poverty improvement goals within a sustainable environment.⁵³

One of the strategy in the policy was to prepare local plan to boost and uphold forest and tree cover to at least 10% of the total land area and for the restoration and rehabilitation of degraded forest ecosystems, and the establishment of a national forest resource monitoring system. The Forest conservation and management Act of 2016 was enacted to provide for prudent management and conservation initiatives incorporating participatory management where stakeholders and involved.⁵⁴

The East Africa Community through East African legislative Assembly (EALA) enacted forest management Bill in 2015 to protect, conserve and sustainably use of forest resource this was to be implemented in all the East African Countries. Further, the Forestry Agencies from Kenya Uganda Tanzania Madagascar Mozambique and Zanzibar met in Arusha in 2013 to discuss the resolutions made in Zanzibar under the umbrella of Zanzibar Declaration and started to develop Memorandum of Understanding to collaborate with the neighboring countries to improve forest management and Governance and forest law Enforcements as pertains to Trans- boundary forest product and Timber trade⁵⁵. In this initiative a Memorandum of Understanding (MOU) between Kenya and Tanzania was drafted and signed by Directors of forest from both countries in Arusha Tanzania.

Other actors are communities bordering the forests commonly known as Community Forest Association (CFA), Kenya Wildlife Service (KWS), Kenya Water Towers Agency, donor funded projects such as Green Zone project funded by African Development bank, Miti Mingi projects supported by the Government of Finland in collaboration with Government of

⁵³ Forest policy,2014 ministry of environment and natural resources.

⁵⁴ FCMA, (2016).

⁵⁵ East African Timber Trade,2015

Kenya. The projects were involved in enhancement of tree planting by the communities and building resilience to the local communities to the effect of climate change, Natural Resource Management (NRM) project and other Non-Governmental organizations such as worldwide funds for Nature (WWF). They have played a role in supporting conservation and management work of forests in Kenya.

1.1.6 Justification of the Study

1.1.6.1 Policy justification

The study will tease out new Knowledge to policy makers' in order to effectively address challenges and step up efforts implementation of multilateral forest management and environmental security. This will further inform strategies; policies on how to integrate multilateral Environmental securities in, Regional National frameworks in order to effectively implement the requirements of MEAS. and further identify future prospects in international Environmental negotiations. The study forms the bas is of understanding strategy implementation and points out new areas off research. Other researchers and academicians can make reference or do similar research. The study is intended to stimulate a modern approach to forest management and conservation using the law by integrating conservation and development imperatives. This study aims to churn out new knowledge to policy makers in order to effectively address challenges and step up the efforts in forest management initiatives.

1.1.6.2 Academic justification

The government is giving priority to forest activities management and security in East Africa particularly in Kenya. This study intends to acts as reference point for academicians, and scholars, on multilateral forest management initiatives and environmental security in East Africa.

1.1.7 Theoretical Framework

1.1.7.1 Ecological system theory

This research aims to employ Ecological systems theory to examine multilateral forest management initiatives and environmental security in East Africa. The Ecological system was a creation of Urie Bronfenbrenne Theory who divided the environment into five diverse levels. One of them is the micro-system which is the most influential, and has the closest relationship to the person.⁵⁶

This theory looks at the relationship between the child's development within the context of the system and her environment. It describes multifaceted "layers" of environment, where child's development is affected by each layer of environment. This theory has lately been given new name as "*bio-ecological systems theory*" to underscore that a child's own biology is a main driver of her growth.⁵⁷ The factors influencing child's development are as a result of interaction between the child's maturing biology, community environment, his immediate family and the societal landscape. Therefore, variations or destruction in any one forest section will affect through other forest sections. This is comparable, to natural vegetations that changes from the herbs, shrubs, and pioneer tree species, and the natural forest as climax.

Bronfenbrenner's ecological systems theory emphasis two things one is the quality and framework of the child's environment. He states that the interconnectedness within these environments becomes more complex as a child develops. However, as the child grows and

⁵⁶ Bronfenbrenner, Urie. *Foreword*. In A. R. Pence (Ed.), *Ecological research with children and families: From concepts to methodology*. New York: Teachers College Press, (1988), p. 19.

⁵⁷ Bronfenbrenner, U., and Ceci, S. J. (1994). Nature-nurture reconceptualized in developmental perspective: A bio-ecological model. *Psychological Review*, 101(4), pp. 568-586.

matures physically and structurally, the complexity increases.⁵⁸ Consequently, a complex forest comprising of enormous biological gene pools is able to offer a variety of products, goods and services. In Bronfenbrenner's theory, he believed that a person's growth was affected by its environmental surrounding. The people's environment is separated into five diverse levels: the micro system, the meso system, the exosystem, the macrosystem, and the chronosystem.

A section of Bronfenbrenner's Ecological Model include, the microsystems layer, is the least piece in which the child is well-established, it is composed of the surroundings where the child lives and moves.⁵⁹ In the forest also there are various site indices, such as, different soil types, topography, temperature range and rainfall pattern, will determine forest composition and structure. The microsystem of a child is composed of the people and organizations the child interacts with in that surroundings. The main examples being the instant relative members, school teachers, and the peers, and possibly locality they play with. This will depend on other factors which include the age of the child; school, and spiritual institution may be part of the arrangement. However, the microsystems are eclipsed in the mesosystems layer.

The relationship between mesosystem and microsystem layer are related to the interaction of the people in the microsystem as parent interact with child care providers and neighbors interaction with each other. The interdependencies of the mesosystems layer and the microsystem relates to the interactions of the people in the microsystems have with each

⁵⁸ Bronfenbrenner, Urie. The bioecological model from a life course perspective: Reflections of a participant observer. In P. Moen, G. H. Elder, & K. Luscher (Eds.), *Examining lives in context: Perspectives on the ecology of human development*. Washington, DC: American Psychological Association, (1995), pp. 599-618.

⁵⁹ Bronfenbrenner, Urie. *Foreword*. In A. R. Pence (Ed.), *Ecological research with children and families: From concepts to methodology*. New York: Teachers College Press, (1988), pp. 11-19.

other, as parents interrelate with childcare provider, or as neighbors relate with each other.⁶⁰ However the child is not indirectly concerned with the mesosystems, however affected by them. Consequently, climate change adaptation and mitigation efforts must provide synergies and balance with local forest objectives and national objectives.

Bronfenbrenner says that exo systems layer is a broader framework as it is related to the community in which the child lives. The child is affected during development and socialization as in other systems though the youngster could not include direct contact with it.⁶¹ Since the people in the child life are affected by the exo systems and meso systems, also the child is affected. Another example of how the exo system affects the child is where the parent is sacked from work or when he goes to work. The variations in the parent's life influence the child's life. The same applies to the forest structure, when there is an unnatural phenomenon such as fires, pests, extreme temperatures, landslides and other, will also affect the composition of that forests.

This section argues that increased interdependence between the forests and other physical conditions, will help in determining the conservation strategy approaches and policy guidelines to sustainably conserve and manage the forest, and this can only be possible if there is dependence between states across East Africa adopting relevant policy guidelines.

In short, harmful effects of global warming and greenhouse gases emission can be cushioned by the Forests and forest products which plays a significant role in its mitigation. They sequester carbon and absorb emissions and accumulation of large amounts of carbon over a long period of time. Forests play a critical role in adaptation strategy to address continuous variations in the natural resources that sustains people's livelihood. Therefore

⁶⁰ Ibid, (1988), p. 23.

⁶¹ Bronfenbrenner, Urie. *On the nature of bioecological theory and research*. In U. Bronfenbrenner (Ed.), *Making human beings human: Bioecological perspectives on human development*. Thousand Oaks, CA: Sage Publications, (2005), pp. 1-15.

Sustainable forest management is a crucial constituent of several policy and action plan that is followed to tackle the increasing international fear in East African region about the impact of climate change.

1.1.8. Hypotheses of the Study

1.1.8.1 There is a positive linkage between MEAs implementation and environmental security in East Africa.

1.1.8.2 The MEAs conservation measures adopted to tackle environmental security in East Africa are not adequately coordinated amongst the stakeholders.

1.1.8.3 There is weak implementation of MEAs policies in Kenya.

1.1.9 Research Methodology

This section explored the methodology of the research study in responding to the research objectives, sample and research instruments. This study applied case study as a research design study. Case studies are often done in the subject's real-world context, which gives a good view of what they are really like. Case studies offer rich information for advancing theoretical ideas, therefore this study was based on East Africa, particularly in Kenya, with a particularly focus on specific Counties that have had an upsurge of illegal forest activities.

This research utilized mixed of both qualitative and qualitative study approaches. This study will be keen on both primary and secondary data sources. The primary data was collected using key informant interview, and the secondary data was collected through books, journal, articles and periodicals on forest crimes as a threat. The information will help to generate deeper undertaking of illegal forest crimes in Kenya. Questionnaires will be used and the results of this questionnaire can significantly benefit stakeholders to shape strategic

direction in relations of environmental security. This can develop better customized strategies to assist member countries on national, regional, and global levels.

The primary target population for this study included Kenya Forest Service, Kenya Wild life Service, Kenya Police Service, Ministry of Tourism, the Judiciary of Kenya, Kenya Wildlife Service, The National Council for Law Reporting (Kenya Law), Directorate of Public Prosecutions, African Wildlife Foundation, Big Life Foundation, Space for Giants, Wildlife Direct, Non Governmental Organizations, Community Forest Association, and other experts in the areas of environmental crimes.

The data collection procedure to be employed was a desk-top review and structured questionnaire method. The questionnaires if used appropriately can be used to gather critical information at very low budget and also perceived as anonymous and therefore the respondent cannot shy away from giving the required information. Purposive sampling technique was used to produce maximum variation in a sample size. Participants being chosen grounded on their experience and work to establish emerging issues on environmental crime management and security in Africa with reference to Kenya.

In order to ensure validity and reliability, this study understood a pre-test the data extraction tool (data collection instrument). The trial study will allow the researcher to recognize items that will require adjustment. The outcome will help the researcher to correct discrepancies arising from the instruments, which will ensure that they measure what is envisioned with maximum validity and reliability. Document analysis and context analysis will be used as an approach for data analysis. The final results will then be presented in narrative form, pie chart, bar graph and frequency tables.

1.1.10 Study Outline

Chapter 1: Introduction to the Study

Chapter 2: The status of multilateral environmental agreements toward addressing regional environmental security and in East Africa

Chapter 3: The multilateral forest management initiatives and environmental security in East Africa

Chapter 4: The key actors, strategies and frameworks in addressing forest management issues through multilateral forest management initiatives in Kenya

Chapter 5: Summary, conclusion and recommendations

CHAPTER TWO

THE STATUS OF MULTILATERAL ENVIRONMENTAL AGREEMENTS TOWARD ADDRESSING REGIONAL ENVIRONMENTAL SECURITY IN EAST AFRICA

2.0 Introduction

Multilateral Environmental agreements are instruments used to enable countries to collaborate on various broad ranges of global environmental challenges under the international law. They are generally in the form of agreements, conventions, on environmental and natural resources. The Global environmental Issues that MEAs responds to are damage of biological diversity, climate change impact, depletion of ozone layer, hazardous waste, organic pollutant.

2.1 The Impact of Global Environmental change in Africa

The ability of the economy to adapt and become more climate change resilient in the twenty first century's, the competitiveness of the resource efficient depend on the high level of ecological innovation, of a societal, economic, organisational and technological nature.⁶² Climate change has progressively been termed as 'security' threat, and there is always assumption that climate change might surge the danger of violent skirmishes.⁶³ There is now a body of research that reveals that climate change have impacts on systems.

Drakenberg found that multilateral environmental agreements could be linking two countries, generally known as bilateral agreements. Additionally, mainly MEAs are among three or more countries, and hence known as multilateral agreements.⁶⁴ In universal law

⁶² ISS [Institute for Security Studies]. 2008. *Environmental Crime Status in Tanzania*. Report of the Validation Workshop held in Dar-es-Salaam, Tanzania, October 2008. Pretoria, South Africa: Institute for Security Studies.

⁶³ Catherine, McMullen. *Climate Change Science Compendium*, UNEP, (2009), p. 57.

⁶⁴ Drakenberg, Olof. *Greening Development Planning: A Review of Country Case Studies for Making the Economic Case for Improved Management of Environment and Natural Resources*, OECD Environment Working Papers, No. 5, OECD publishing, Paris, France, (2009), p. 8.

ideologies, MEAs (as with other international agreements) frequently obligates individual states who have ratified to be committed by the MEA.⁶⁵ Though, MEA can distress non-Parties, for instance by stopping or limiting trade by entities with non-Parties.⁶⁶

Dominique states that environmental degradation increases hazards and decreases chances for the improvement of human well-being, this is particularly for susceptible populations.⁶⁷ Destructive environmental variations are an increasingly taking place in globalized, technologically advanced and interconnected world, with a rise in world populace and unsustainable manufacture and utilization designs.⁶⁸ The development prospects are reduced by scarcity of ecosystem services hence this might threaten future well-being of the people.⁶⁹

Chaudhry, states that the post-2015 context requires replicating the associations amongst poverty reduction, natural resource management and development, including local and universal environmental challenges.⁷⁰ A very important aspect is to identify and push a mutual plan to together manage joint worldwide environmental threats and to come up with flexible categories of states to contribute to complete and sustainable development, taking

⁶⁵ Ibid, (2009), p. 18.

⁶⁶ UNEP. UNEP/EA.2/18 Relationship between the United Nations Environment Programme and the multilateral environmental agreements for which it provides the secretariats. Nairobi, (Kenya): United Nations, (2018).

⁶⁷ Ibid, (2009), p. 51.

⁶⁸ Dominique, Kathleen. Policy and Governance Responses to the Water-Energy Nexus Challenge, Presentation at the 2014 UN-Water Annual International Zaragoza Conference on Preparing for World Water Day 2014.

⁶⁹ Ibid, (2014), pp. 31-31.

⁷⁰ Chaundry, Shazia. *The impact of climate change on Human security. The case of Mau Forest Complex. Journal of Development rural community.* Vol 58. (2015), p. 7.

into consideration the multidimensional issues such as the relationship between food and energy security.

This approach is articulated to put more emphasis on prevention, restoration and sustainable management. The capability of the global community to bring results to ecological difficulties is as a result of its ability to produce and uphold elastic and all-inclusive management and governance a situations of universally and nationwide levels.⁷¹ Preferably, contexts to complete these objects ought to be based on robust and measurable goals, verifiable strategic plans, and strong assessment tools.⁷² Governance addresses multi-dimensional approach in development, growing environmental and socio-economic problems that indicate a high degree of uncertainty.⁷³

Hovorka and Celin claim that in order to address environmental challenges regionally, national and regional responses have begun, a polycentric governance approach and needed to achieve efficient ,effective, and equal results.⁷⁴ This method identifies a variety of settings then assumes several midpoints of activities and authority, which, specified the variety of volume needs, are critical to create suitable answers to ecological problems.⁷⁵

Environmental problems are hardly tackled in an unified style. The

⁷¹ Hovorka, Alice and Celin, Valli-Laurente. *Compassionate Conservation: Exploring the Lives of African Wild Dogs in Botswana*. Department of Community Health Sciences, University of Calgary, Calgary, AB T2N 4Z6, Canada 2 Faculty of Environmental Studies, York University, Toronto, ON M3J 1P3, (2019), p. 3.

⁷² Chaundry, Shazia. *The impact of climate change on Human security. The case of Mau Forest Complex. Journal of Development rural community*. Vol 58. (2015), p. 7.

⁷³ Duraiappah, Annathan. *Exploring the Links- Human Well-Being, Poverty & Ecosystem Services*, UNEP/IISD, Nairobi, Kenya, (2004), p. 67.

⁷⁴ Hovorka, Alice and Celin, Valli-Laurente. *Compassionate Conservation: Exploring the Lives of African Wild Dogs in Botswana*. Department of Community Health Sciences, University of Calgary, Calgary, AB T2N 4Z6, Canada 2 Faculty of Environmental Studies, York University, Toronto, ON M3J 1P3, (2019), p. 3.

⁷⁵ Chaundry, Shazia. *The impact of climate change on Human security. The case of Mau Forest Complex. Journal of Development rural community*. Vol 58. (2015), p. 7.

interconnectedness of climate alteration, aquatic resources, desertification together with biodiversity loss, for instance, makes secluded governance replies insufficient and possibly counterproductive. Duraiappah opines that there are no single, principal answers to environmental encounters. However, numerous environmental problems, especially those connected to the international commons, can only be solved through joint action.⁷⁶ Of critical importance are Universal responses which enhance local capability and enabling the acceptance of answers among states with regional uniformity.⁷⁷ National and Global levels Responses interrelate and create structural, incremental, and transformational discrepancies. The involvement of non-state actors at various stages has, for example, developed information exchange and reinforced capabilities⁷⁸.

Specifically, in the environmental situation, there is an acceptance that environmental deprivation is often a international problem and, therefore requires global responses. The depletion of the ozone layer, the loss of flora and fauna, and the extent of persistent organic pollutants, for instance, result from human activity in countries around the world and have impacts that extend far beyond national borders. Due to national protection and environmental management strategies alone are insufficient to conserve shared natural resources and safeguard the global ecosystem. It has also been recognized as the best and most effective method for governments to confront trans boundary or international environmental difficulties.

⁷⁶ Duraiappah, Annathan. *Exploring the Links- Human Well-Being, Poverty & Ecosystem Services*, UNEP/IISD, Nairobi, Kenya, (2004), p. 67.

⁷⁷ Hovorka, Alice and Celin, Valli-Laurente. *Compassionate Conservation: Exploring the Lives of African Wild Dogs in Botswana*. Department of Community Health Sciences, University of Calgary, Calgary, AB T2N 4Z6, Canada 2 Faculty of Environmental Studies, York University, Toronto, ON M3J 1P3, (2019), p. 3.

⁷⁸ Kamwet et al, Nature and extent of environment, crime in Kenya ,pretoria,south Africa,institute of security study pp8-12

Kamweti, Osiro and Mwiturubani suggest that Kenya's exceptional scenery supports plentiful and varied wildlife of scientific, inherent, and economic worth and has a significant range of wildlife habitat. A very important number of wildlife living externally in the protected areas seasonally and on permanent basis, the country's wildlife reserve has suffered from the impacts of human economic events, human-wildlife conflict and poaching of wildlife, demand for wildlife products in the black market, and poor legislation, among other factors⁷⁹.

Mitchell found that the advantage of environmental sustainability to growth was stipulated in Strategic Development Goals⁸⁰. Nevertheless due to some advancement in the direction of meeting this goal, there is still important uncompleted business and new global and local encounters jeopardise the development and environmental benefits achieved so far⁸¹. World-wide environmental alteration example climate change global warming, and the deprivation of ecosystem amenities is increasing risks and dropping prospects, particularly for unfortunate and susceptible populations. Such variations are taking place in an progressively globalizing, urbanizing, unified and fast-growing world amidst fluctuating geopolitical influence balances.

Increasing flow of goods, and services, expertise, investment and, information and labour all fuel a rising worldwide populace with insinuations for forms of consumption and production. The level and persistence of worldwide environmental challenges require continued collective efforts to meet globally agreed goals. Amongst the numerous environmental

⁷⁹ Mitchel Donald international environmental agreement (IFA)database project, (2016) p.88-91.

⁸⁰ Ibid (2016) p98.

⁸¹ Geun, Lee. Environmental security in East Africa. Environmental security complex, volume26, (2002).

challenges that Kenya is facing include degradation of land and marine diversity, soil erosion, environmental pollution and deteriorating water quality.

Chee and Khor found that in Kenya, when it comes to environmental sustainability through climate change, public disclosure of protection information is meagre across many laws and under various responsible establishments. Even though steps in the direction of more open government are being engaged, these have not sourced in the environmental execution realm. The deficits in available execution information and the absence of practical data disclosure weaken population participation in environmental enforcement.⁸² Kenyans warrant a comprehensive, online environmental execution and compliance database so that they might find out what is not happening in their communities, and this has stimulated the researcher to get facts on the global environmental sustainability through climate change action plan. United Nations Convention on Biological Diversity (UNCBD), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Convention on Combating Desertification (UNCCD), Stockholm Convention on Persistent Organic Pollutants (POPs).

2.2 Status of Multilateral Environmental Agreements in East Africa

In order for one to appreciate the implementation of MEAs in Africa, one has to take a historical viewpoint to assess the trends.⁸³ Africa was among the first continents where multilateral action on intercontinental environmental issues was taken. The source of MEA in Africa can be traced from the colonial historical periods in the 1900s. The initial effort in shaping it was through the ‘Convention on the Preservation of Wild Animals, Birds, and Fish

⁸² Hovorka, Alice and Celin, Valli-Laurente. *Compassionate Conservation: Exploring the Lives of African Wild Dogs in Botswana*. Department of Community Health Sciences

⁸³ Chee, Ling and Khor, Martin. *International Environmental Governance: Some Issues from a Developing Country Perspective*, (2011), pp. 29-34.

in Africa' signed by European colonial powers in London on 19 May 1900. This Convention was not endorsed by any signatory but aided some of the colonial powers to indorse legislation associated to exploitation and protection of wild fauna in their colonial territories.⁸⁴ Colonial efforts for a new convention culminated in the approval of the 'Convention Comparative to the Preservation of biodiversity in the Normal State (London Convention)' on 8 November 1933.⁸⁵

In numerous cases, States realize an ecological challenge, discussed at MEA to address the various shortcomings, and then signed and endorsed the MEA, without showing a serious assessment of whether specific countries have the, personnel technical and financial, resources to implement the MEA.⁸⁶ Now, numerous States are confronted with the problem of implementing frequent MEAs with inadequate resources.⁸⁷ Further, to scarce resources, politicians often need to be influenced of an MEA's importance since the other persistent significances fronting a developing country.

Werksman opines over 250 multilateral environmental agreements (MEAs) dealing with numerous environmental matters is available and are currently in used in Africa. About 20 of these consist of requirements that can affect business.⁸⁸ Trachtman contends that the number of multilateral environmental treaties on matters of forests and institutions has grown progressively over the preceding few years.⁸⁹ The work going on under these agreements and

⁸⁴ Ambalam, Kannan. Challenges of Compliance with Multilateral Environmental Agreement: the case of the United Nations Convention to Combat Desertification in Africa, (2019), pp. 2-5.

⁸⁵ Ibid, (2019), p. 9.

⁸⁶ Chee, Ling and Khor, Martin. *International Environmental Governance: Some Issues from a Developing Country Perspective*, (2011), pp. 29-34.

⁸⁷ Ibid, (2019), p. 9.

⁸⁸ Werksman, Jacob. *Compliance and the Kyoto Protocol: Building a Backbone into a Flexible. Regime*, Yearbook of International Environmental Law, (2018), p. 57.

⁸⁹ Trachtman, Joel. *The Domain of WTO Dispute Resolution*, Harvard International, (1999), pp. 77-82.

within these organizations is growing in capacity and specificity, and it is overwhelming an increasingly practical influence, particularly as there is an increasing importance on practical execution.

Sand contends that multilateral environmental agreements to be real at achieving their goals they must be worked on.⁹⁰ There has been considerable enhancement in the negotiation of new MEAs over the previous decades; up to recent consideration to implementation at the state level has lagged behind.⁹¹ Numerous MEAs necessitate parties to submit nationwide information on their implementation-related actions plan.⁹² Some also encompass procedures for the evaluation of party implementation; some go further and review compliance with MEA tasks; however, some MEAs assess their own success.⁹³ Jointly, these practices and related rules and subsidiary bodies are categorized as evaluation organizations.

Bandi proposes that collaboration and coordination among MEAs is critical to avoiding conflicts amongst agencies, reducing overlapping of events, and improving the effectiveness and efficiency of the policy process at all echelons.⁹⁴ The importance of synchronization and synergies amongst the several agreements has been constantly confirmed by the various governing bodies and the Environmental Management Group has reviewed the synchronization of reporting.⁹⁵

⁹⁰ Sand, Peter. *The Effectiveness of Multilateral Environmental Agreements: Theory and Practice*. International Environmental Law-making and Diplomacy, University of Eastern Finland, (2016), pp. 11-12.

⁹¹ Ibid, (2016), p. 16.

⁹² Zulu, Chitumba. *Problems with participatory mapping in forest management. A case of Handei Village Forest Reserve, East Usambara, Muheza, Tanzania*. M.Sc. Thesis (unpublished). ITC, Holland, (2004), p. 37.

⁹³ Ibid, (2016), p. 17.

⁹⁴ Bandi, Gyula, *Some Methodological Aspects of Designing Regulations and Setting Priorities in Economies Under Transition*, Proceedings: Third International Conference On Environmental Enforcement, vol. 1, (2014), pp. 115-129.

⁹⁵ Chee, Ling and Khor, Martin. *International Environmental Governance: Some Issues from a Developing Country Perspective*, (2011), pp. 29-34.

2.3 Domestication of MEA in Addressing Regional Environmental Security in EA

A multilateral environmental agreement is a treaty among willing countries with compulsory international obligations between themselves, in written form and supervised by international law.⁹⁶ The obligations contain commitments to meet specific environment related objectives. Compulsory obligations under MEAs are practical requirements which help a member party not to act in a specific way in order to protect, conserve or expand the environment.⁹⁷ The provisions in a MEA may take the formula of quantifiable targets, instituting values or restrictions, specific prohibitions and can also focus on processes.

Trachtman argues that MEAs have been developed in response to the recognition that some environmental matters cross local borders and international support is obligated to address them. To illustrate this, parts of the planet such as Antarctica or the global atmosphere are not the autonomous domain of any state.⁹⁸

Climate change phenomenon, ozone depletion, persistent organic pollutants are environmental challenges common to humankind without national boundaries. They require global collective action and MEAs are seen as the means to entrench international environmental governance.⁹⁹ MEAs therefore have been used as the platform to encourage and create management agendas over which to structure practical international action with respect to environmental fortification and conservation.

Trachtman posits that domestication of MEAs is categorized into four levels. The highest level of domesticating MEAs is implementation which is the process of translating

⁹⁶ UNEP. UNEP/EA.2/18 Relationship between the United Nations Environment Programme and the multilateral environmental agreements for which it provides the secretariats. Nairobi, (Kenya): United Nations, (2018).

⁹⁷ Ibid, (2018).

⁹⁸ Trachtman, Joel. *The Domain of WTO Dispute Resolution*, Harvard International, (1999), pp. 77-82.

⁹⁹ Zulu, Chitumba. *Problems with participatory mapping in forest management. A case of Handei Village Forest Reserve, East Usambara, Muheza, Tanzania*. M.Sc. Thesis (unpublished). ITC, Holland, (2004), p. 37.

MEAs obligations and commitments into effective national measures. This takes the form of instituting policies, laws or regulations. The next level is compliance which relates to participating countries adherence to MEAs provisions and implementation measures, including procedural measures.¹⁰⁰ The other level is that of enforcement and this refers to instituting procedures to compel compliance and mechanisms to deter non-compliance. One form of mechanism to deter noncompliance is application of trade barriers. The fourth level of domestication is effectiveness which points at whether a MEA resolves the problem that caused its creation or not.¹⁰¹

Duraiappah suggests that are provided are substantive customs of environmental protection, several MEAs improve the governance of natural resource management, as well as largely encouraging participatory decision making and transparency, accountability, and conflict determination.¹⁰² Additionally, MEAs often pursue to evade or limit resource-driven fights by promoting equitable measures, for instance concerning access to new water inside an international watercourse basin.

The execution of MEAs nationally reflects the disintegration of the global environmental governance structure. Action plans at the national level and relevant projects, are the accountable channels for changing MEAs into a certainty nationally. The challenges with these strategies have been excess focus on projects as well as poor integration with national development plans. A comprehensive strategy is essential to seize prospects usually overlooked to emphasis on promising partnerships with various environmental actions such as varied capacity strengthening on management of chemicals widely as opposed to one

¹⁰⁰ World Health Organization. *Gender inequities in environmental health*. 25th Session of the European Environment and Health Committee, (2008), p. 60.

¹⁰¹ Ibid, (2004), p. 41.

¹⁰² Duraiappah, Annathan. *Exploring the Links- Human Well-Being, Poverty & Ecosystem Services*, UNEP/IISD, Nairobi, Kenya, (2004), p. 67.

treaty. Common of the action plans were originated aiming at attracting international funding despite the overemphasis on discussion and ownership of these activities nationally.

2.4 Implementation of MEA and Regional Environmental Security in Kenya

East Africa has tended to use two approaches in implementing MEAs and other international environmental commitments, that is, regional and national level implementation.¹⁰³ At the regional level, Africa uses model laws, declarations, charters, guidelines and other like instruments to have common approaches and to influence the development of national environmental actions. There are some cases in point to elaborate this trend. In the implementation of the Nagoya Protocol, AU adopted the 2001 African Model Law aimed at the guarding of the Rights of the Resident Communities, Farmers and Breeders and towards the Regulation of Access to Biological Resources (“the African Model Law”). The African - Union Practical Guidelines for the Coordinated Implementation of the Nagoya Protocol in Africa is another instrument to implement MEAs.¹⁰⁴

Zulu reveals that over time several concerns have arisen with respect to implementation of MEAs in individual member states.¹⁰⁵ These concerns relate to aspects on effectiveness, international regulatory, efficiency, timeliness, congestion, duplication and overlay of institutional mandates. These concerns arise particularly in developing countries where there are capacity constraints and strategic assessments are not done in determining the ratification of MEAs. A report of United Nations Environment Programme (UNEP) on

¹⁰³ Cheboiwo, Jsohua. *Potential Opportunities in Timber Trade between Kenya, Democratic Republic of Congo and Tanzania*. Kenya Forestry Research Institute (KEFRI) Policy Brief No. 4. Kenya, (2015), pp. 10-15.

¹⁰⁴ World Health Organization. *Gender inequities in environmental health*. 25th Session of the European Environment and Health Committee, (2008), p. 60.

¹⁰⁵ Zulu, Chitumba. *Problems with participatory mapping in forest management. A case of Handei Village Forest Reserve, East Usambara, Muheza, Tanzania*. M.Sc. Thesis (unpublished). ITC, Holland, (2004), p. 37.

development of Multilateral Environmental Agreements, asserts that ratification of the several agreements and procedures on the environment signify one of the most remaining successes of the global community in the environmental field to date. Despite multiple efforts at improved global governance, the international environment goes on degrading at an shocking rate, and global boundaries are being moved to new borders. This has brought critical queries about the institutional performance of the environmental agreements, as well as how local policies based on international environmental obligations contribute to resolving worldwide environmental problems.¹⁰⁶

Zulu opines that whereas Kenya has ratified a number of MEAs in the realm of biological diversity, ecosystem and habitat conservation, her implementation of the obligations arising from these MEAs has encountered a number of challenges.¹⁰⁷ As a result, cases of the integrity of Kenya's biological diversity and ecosystem have been compromised in numerous instances. Having ratified MEAs in the thematic area of biological diversity, ecosystem and habitat conservation, Kenya is obliged to pass laws, regulations and policies, taking other measures and initiatives to effectively implement her obligations under these MEAs.¹⁰⁸ Nonetheless, Kenya is working towards effectively implementing her MEAs obligations in the field of biological diversity, ecology and habitat conservation.

2.5 Chapter Summary

This section argues that it's imperative to highlight that regardless of fears about the treaty, bottleneck and linkages, MEA organizations and discussions over new organizations show

¹⁰⁶ World Health Organization. *Gender inequities in environmental health*. 25th Session of the European Environment and Health Committee, (2008), p. 60.

¹⁰⁷ Zulu, Chitumba. *Problems with participatory mapping in forest management. A case of Handei Village Forest Reserve*, East Usambara, Muheza, Tanzania. M.Sc. Thesis (unpublished). ITC, Holland, (2004), p. 37.

¹⁰⁸ World Health Organization. *Gender inequities in environmental health*. 25th Session of the European Environment and Health Committee, (2008), p. 60.

extraordinary resemblances. This proposes that although official organization may be insufficient, in training government delegates taught of experiences in other MEAs and try to develop upon and integrate teachings learned in other areas.

This section further found that in number, East African countries develop a enormous share of negotiating parties. However, their impact is immensely negligible in assessment to their numbers. Developed states are the crucial players due to their economic and management strong point. Additionally, negotiating discussion are frequently comprising of personnel from numerous government ministries that represent their situations. This produces a gross unevenness towards African states as some of them have only one individual at international negotiations that have inadequate information on the matters being discussed. The philological of a negotiated writing can be extremely practical or legal. Short of a vigorous evolving country input, it becomes fundamentally “unimplementable” in their own state.

CHAPTER THREE
**THE PROSPECTS AND CHALLENGES OF MULTILATERAL FOREST
MANAGEMENT INITIATIVES AND ENVIRONMENTAL SECURITY IN EAST
AFRICA**

3.0 Introduction

It is worth nothing from the onset that there are challenges of forest management initiatives in addressing environmental security. There are many of these challenges, such as, poor forest governance, the lack of clear multilateral environmental agreement specific on forest management, the lack of clear implementation and enforcement frameworks, inadequate resources or funding and the lack of awareness to the general population in the region. One key restriction is that African states have not effectively utilized its raw natural resources and traditional knowledge to take advantage of the processing to add value and benefit the people.

3.1 Prospects of forest management initiatives

As result of the acknowledgment of the several function and functions of forests in flora and fauna and climate change mitigation and adaptation, and a several forest area management and preservation enterprises have been started within Africa. This is strategic by the means of organizations that are sub-regional for example ECOWAS, East Africa Commission, SADC and COMIFAC are very vital forest ecosystems.

The potential opportunities of multilateral forest management and Environmental Security will centre on International affairs in financing to express Sustainable forest management and Environmental security. These have savings by domestic and resident administrations by soft loans, subsidies, non-monetary inducements, and direct savings, financial distributions, and income got from forests owned by the governments. Through Multidimensional ODA institutions: which includes; GEF, IDA, ITTO, GM, UNEP, FAO, UNDP, and district progress banks grants, asset guarantee, investment loaning, Polygonal focused on programme for instance NFP, PROFOR, CGIAR, FLEG, BPF, and Multifaceted monetary institutions: IFC, IBRD, and regional expansion groups.

Conservation NGOs through Financial support to local NGOs and looking at the beneficiaries' financial support to international NGOs.

An assessment of monetary guidelines in forest sector and other associated sectors which are facilitated by FAO found out that a number of African states have financial strategies and forest income assortment procedure which can be utilised to produce capital from the forest subdivision (FAO, 2001). The main causes of joint bankrolling to forestry are the World Bank, and payment improved from 51% to 73% during the 2000-2007 Financial year.¹⁰⁹ . ITTO's payment for forestry ODA remained 5% of multilateral financing in 2001 however it has gone down 2% because of constrictions connected to decline donations from donors.

Global Conservation Fund (GCF) provides monetary and planned support to let local NGOs, communities, and government to preserve their natural resources. This fund is designed to focus on growing and rising protected areas and ensuring their successful Management.¹¹⁰

Payment for the Environmental services

Compensation for environmental services is vital because in order to support and develop supply of environmental services and compensation of forest owners. This has got considerable attention in order to support venture in sustainable forest management and climate change alleviation. Immense prediction has been set on growth of payments for environmental services (PESs) as a possible basis of income and funding for, Sustainable Forest Management. The PES schemes of international public goods from forests been understood as the greatest capable method to lift extra monetary streams to Sustainable Forest Management in East Africa. The initiatives include Carbon Finance due to the roles played by the trees as carbon sinks. Imbursement for carbon confiscation to alleviate climatically environment change being one of the best rising conservational services markets. Underneath the Kyoto decorum, some three mechanisms developed, that is the protocol's Clean Development Mechanism (CDM), joint execution and emanation trading. Another current feature of multilateral forest management and payment of environmental service revolves around MEA in International relation is security to the eco-security.

¹⁰⁹ Simula, M. 2008. Mapping of existing and em-Legally

¹¹⁰ UNDP. 1996. Financial mechanisms and sources of finance for sustainable forestry. 4-7 June. Pretoria, South Africa. Workshop proceedings. New York.

Eco-securitisation leads to ways where maintainable ordinary resource projects can be financed in forestry¹¹¹ by use of tradable bond to stockholders. These pledges are securitized by the monies flow from discrete resources; this could involve incomes from wood manufacture in plantations and usual forests and from bionetwork facilities and they might be more suitable for well managed forests.

3.2 Recognition of forests as a matter of global concern within international negotiations

In developing country's Forest deprivation are obviously seen as problem. The main forest fortification, however, stands at a matter of worldwide alarm, due to the position these forests take part in global life-support system, particularly in meeting international flora and Fauna and sustainable development goals¹¹². at present, attempt to talk about a global forest accord has been unproductive and jungles are preserved in a structured and clumsy way by the significant joint environmental agreements. Though, main chances survive for nation-wide managements to talk about strategies that give confidence the main forest protection throughout key international treaties, mainly the Convention on Biological Diversity (CBD) the U.N. Framework Convention on Climate Change (UNFCCC) and the UN Forum on Forests (UNFF). A most imperative problem to policy stress on key forests in universal discussion is insufficient usage made of science-based forest definitions¹¹³.

Community consciousness through the CFA, that support group-based discussions, so as to stop the forest fires and give confidence to farmers to write suggestions to UNDP that sustain income generating actions, some farmers have fish ponds intended to add to food security. whilst others are dealing with the epi-culture and rabbit keeping. The tea factories such as Ndima, Kimunye, Thumaiata and Imenti tea factories within the Mt Kenya regions have come up with micro-financing schemes through which they provide farmer some loans to enhance their business. COMPACT (Community Forest Management and Conservation), WWF (World Wide Fund) based within Nanyuki area, and Mount Kenya East Conservation

¹¹¹ UNFCCC. 2007. Investment and Financial Flows to Address Climate Change. Bonn.

¹¹² Nepstad, D., Mcgrath, D., Stickler, C., *et al.* (2014). Slowing Amazon deforestation through public policy and interventions in beef and soy supply chains

¹¹³ OECD). (2013). *System of environmental-economic accounting 2012 experimental ecosystem accounting.*

Project (MKEP) are the mainly significant projects. This part of Mt Kenya region establishes that unlawful cataloguing, illegal animal grazing, encroachment and plundering of wildlife continue in such areas. Overgrazing and Agrarian growth too are an increasing difficulty and main cause of the damage of plants with wood cover, particularly for, Southern, west and east Africa. Bearing in mind that the high demand on agriculture, there is raising demands to maximise the agricultural region to see up the food needs of the increasing populace and hence handle food security threat.

Africa identifies the enormous worth of its forests and has brought on board forests in its growth programme. The NEPAD Environmental Action Plan (NEPAD-EAP) traces woodlands and forests in Programme Area 6. Trans- boundary protection or management of natural resources, which underscores the security and manageable management of Africa's forest.

Assessment is done so that adjustment in forest cover in Eastern Africa is 0.51 per cent yearly. However, there is considerable disparity among countries, with Burundi undergoing a reject 9 per cent compare with 2 per cent in Uganda. There is, on the other hand, not dependable information on the range of woodlands and forests that are sustainably accomplished. At the existing deforestation charges, and if maintainable forest management practices are not promptly accepted, woodlands and forests may get deteriorate quickly by 2020.

Forests are critical resource and their successful use is significant and must be grounded on the logical allocation of costs, aids and consideration. Forests are a foundation of prosperity that can be appreciated through sustainable exploitation of wooden and non-wooden products, ecotourism, tourism and carbon trading. Forests too give water catchment security, in addition to being pools for flora and fauna. There is prospective to get better

community benefits through combined forest management. The forest breaking point catchment worth for Uganda, for instance, has been designed to be US\$13.2 million per year. Collective forest management and forest user groups raise community involvement and help realize financial development.

The scope of concerns of forest decline is mirrored in the beginning of wide afforestation and replanting programmes and the variety of activities engaged lately to shield and add to forested areas. Zones with forests are being delineated in all the nations, and forest reserves that have come up recently have been opened in some countries like Sudan as a consequence of growing alertness and attention in conservation. Handling forests on a practical foundation is being followed in a local context.

Many governments confess the probable worth and option those woodlands and forests carry to getting better man's wellbeing, mainly in rural areas, and are progressively realizing that protected freehold is a vital aspect of this. A number of states have going ahead with reorganizations to provision local communities, such as the authorisation of resident forms and groups to manage common resources through a process of devolution of administrative powers and tasks and devolution of tasks.

Forests are very essential resource and their successful utilization is therefore anchored in the reasonable contribution of costs, profit and knowledge. Forests which can be valued by maintainable collecting of non-timber and timber products, ecotourism and tourism, and carbon interchange are a source of wealth to states and people. There is probable to develop public profits over participatory forest supervision. For example, in Uganda the forest watershed catchment value has been estimated to be US\$13.2 million annually. Hence, participatory forest organisation and forest operator groups boost community contribution and assistance attain financial growth.

Forest zonation is being delineated in all the nation state, additionally; novel forest assets have been opened in some states for example Sudan due to growing awareness and interest in conservation matters. It is further noted that the management of forests on a practical foundation is being pushed in an area setting.

The probable worth and chance of woodlands and forests bring to improving livelihood, especially in countryside zones, are progressively distinguishing that safe tenure is a vital feature which is acknowledged by numerous regimes. A number of nations have started provision resident societies through permission of home-grown bodies and publics to control common incomes through a procedure of decentralisation of organisational powers and tasks and decentralization of responsibilities.

3.3 Key Challenges to Forest Management Initiates in East Africa

Currently, environment change is not just an environmental issue but also viewed as a security risk. Consequently, increasing energy consumption contributes to global warming. Similarly, courtiers have realized that energy is an important development resource and therefore the need to raise their energy requirements. Energy demands have impacts on policies which are intended at extenuating the possessions of climate change. A policy intended to cut hydrocarbon energy use and hence carbon emissions in Africa would increase economic growth. This would lead to easier management and reduction in poverty and saving further climate change effects.

The change from usage of fossil energies to renewable (low-carbon) energy foundations is likely to be expensive for poor thrifts countries since this procedure requires a moderately large part of inadequate fiscal resources. Therefore, mitigation of climate change efforts, and dealings to decrease energy utility in emerging countries, likely to diminish human safekeeping, threaten food security and increase poverty. Sub-Saharan Africa

countries' economies depending heavily on agricultural production have caused immense effects on macroclimate change on cultivation productivity.

The East African area had the main proportion of undernourished citizens internationally, with the income of most citizens existing in a state of persistent starvation. This condition of affairs is predictable to get bad underneath climate change, which might drive livestock, harvests and agriculturalists away from their maintenance functions, and also upsurge the incidence and harshness of floods, proliferation of persistent species and lead to long-lasting droughts.

The key challenge to forest conservation has been wild fires. This happens when the local forest community are preparing their farm lands for cultivation, occasionally the fires spared to the forest resulting in serious destruction, and these has been common in areas such as Narumoru, Gathiuru and Ontulili. The other challenge to forest conservation measures is the introduction of invasive tree spices, where farmers use *Lantana kamara*, which hampers the growth of other tree crops, and this is most common in areas such as chogoria, Irangi and Ruthumbi forest blocks of Mount Kenya¹¹⁴.

The other key challenge is the destruction of trees by animals, where some trees that are palatable to elephants, such as *Pinus patula* and *Cupressus lusitanica* are often destroyed by various animals, and thereby hampering conservation measures, and furthermore the increases number of wild animals in the forest may harm forest rangers, making patrolling difficult.

This section found that the other challenge to forest conservation is the fact that the local authority, some of them finds the forest as dumping sites for waste disposal, such as in

¹¹⁴ World Health Organization. Gender inequities in environmental health. 25th Session of the European Environment and Health Committee, (2008), p. 60.

Imenti in Meru, and Chehe forest block in Nyeri. Another challenge is pest and diseases that defoliate some tree species, and thereby destroy the forest.

Humans are also a serious threat to forest conservation through illegal logging, poaching and, human encroachment illegal cultivation, especially in steep areas. This can be mitigated though education, and provision of an alternative source of livelihood. The security aspect of climate change is additionally obvious currently to before, the matter is unmoving not life spoken by the global climate command, neither fixes it have any lawful power. Though, studies and information are enduring to emphasize the subject while organizations, nations are creating variations to their local policies to accommodate these concerns and threats. While threats thrive and become more varied and the globe endures to deep, such security alarms will convert more global naturally; and go past the common limitations, hence climate change, which drive thus need intensive and build synergy in terms of international response.

Climate change having constantly converted a key hazard to mountain communities within Mount Kenya. Kenya has often been considered a country that resolve be seriously pretentious harmfully by climate change due to the mixture of cruel climate-associated influences, consequently, extremely climate-hoping economies, and realms with the smallest capability for becoming accustomed to highly vulnerable to climate effect. This study further established out that humanoid safekeeping and ecological security are mutually reliant on each other. On one side, the deprivation of ordinary resources weakens incomes, and upsurges susceptibility to disasters and subject human security at danger. Conversely, matters of self-governing supremacy, such as inequity, forceful conflicts, unsuitable or insufficient plan agendas, and political uncertainty lead to the mistreatment of naturally available resources and mal administration of fairness.

3.4 Future of Multilateral Forest Management Initiatives and the Environment

It is accepted that the bodily aspects of environment alteration, such as melting of ice caps in Mount Kenya, extreme conditions like flooding, desertification, and hydrologic cycle disruptions which create major problems to vital water transport and energy infrastructure.¹¹⁵ However, some forest blocks are facing key challenges, like proliferation of invasive species, dumping of solid waste, and illegal logging. The dwindling of the springs and other water within the forest ecosystem could result in the reduction of water flows in the rivers, which has the potential to heighten rivalry within the pastoral communities and resident farmers.

The presence of institutions, such as Kenya Forest Service, Kenya Forest Research Institute, National Museum of Kenya, and National Environment and Management Authority, working with and through recognised communities can help in reversing the increasing climate change effects. Increased demand, driven by population growth or economic development, or declining supply, driven by overexploitation or environmental degradation, could create scarcities of key natural resources, generating competition between affected countries or communities.¹¹⁶

Conversely, the abundance in certain areas of highly valuable natural resources such as forest, rivers, and wildlife and water ponds may render these areas a target for contending powers, whether neighbouring nations or domestic insurgents, seeking to exploit the resources for revenue.¹¹⁷ Finally, severe and chronic environmental pressures such as landslides, fires, or sudden acute disasters such as floods, may displace communities from

¹¹⁵Bauder, Harald. *Labor Movement: How Migration Regulates Labor Markets*, New York: Oxford University Press, (2006), p. 10.

¹¹⁶ FAO (Food and Agriculture Organization), 2006. *The state of food insecurity in the world, 2006: Eradicating world hunger, taking stock 10 years after the World Food Summit*. Rome: FAO.

¹¹⁷ FAO (Food and Agriculture Organization), 2006. *The state of food insecurity in the world, 2006: Eradicating world hunger, taking stock 10 years after the World Food Summit*. Rome: FAO.

one region into another, straining local capacities and possibly sparking conflict between the affected communities. In addition, the emergence of unique pests and diseases which were not prevalent may also occur on that region.

Environmental deprivation, unequal access to natural resources and the cross-boundary curriculum of dangerous constituents can cause struggle and cause hazard to human well-being and nationwide security.¹¹⁸ Environmental change risks that cause human security have not been eradicated, and the extent of usage and effluence in recent, high-energy use has led to reduction in forest cover; reduction in fish stocks; land degradation, biodiversity losses; and water scarcity and water pollution and their ecological changes are global as they are unclear and because some pollutants such as radioactive wastes and greenhouse gases have global consequences.

The relationship between the problems of human safety and health compared with climate change have progressed to a stage in which by now they form familiar and vital parts in climate change discussion, and are being talked in a varied variety of fora over summits, conferences and deviations in policy.¹¹⁹ Complex linkage between processes of environmental change and their consequences across both space and time include a new element to the theory of human security - an aspect that raises vital questions about both sustainability and equity.

For example, Trans-boundary pollution can disturb relationships between neighbouring communities, who segment a shared resource base. Healthiness jeopardise and instinctive relocation owing to water scarcity, unequal access to terrestrial resources,

¹¹⁸ Ibid, p. 21.

¹¹⁹ FAO (Food and Agriculture Organization), 2006. *The state of food insecurity in the world, 2006: Eradicating world hunger, taking stock 10 years after the World Food Summit*. Rome: FAO.

pasture, unrestrained stocks of outdated insecticides and extra procedures of radiation emitting surplus and harmful matters have been recognized as intimidations to peace and stability.¹²⁰ Conservational crimes have, been treated as misdemeanours, and not crimes for long time. Environmental crime is a grave and rising worry that leads to the extermination of precious natural world species thus considerably causing the organic integrity of the globe.¹²¹

General problems which relate to the utilization of normal resources can also convey individuals to labour together in the direction of a common objective. Therefore the community forest association as a concept through which the government has brought together different local communities having user rights which has brought environmental cooperation, that currently acts like an influential means for stopping conflicts and indorsing peace and harmony amongst groups and society.¹²² Ultimately, securing human well-being depends upon protecting the environment from human pressures; that is, safeguarding the natural resources and ecological systems that sustain us all forms of life from over-exploitation by humans.

In Kenya, when it comes to environmental offences, public revelation of execution data is reduced across many decrees and beneath numerous accountable institutions. Even though stages in the direction of more exposed governance are actually taken, they have no source in the environmental protection realm. The deficiencies existing in enforcement information and inconsistent legal frameworks on the management of natural resources and lack of practical data admission deteriorate citizen contribution in eco-friendly execution. Kenyans merit a

¹²⁰ Akech, M (2006). The environment and law report in Kenya. Kenya Law Reports, (Environment & Land) xiv, Nairobi.

¹²¹ Ibid.

¹²² Environmental Crime: The Criminal Justice System's Role in Protecting the Environment By Yingyi Situ, David Emmons Published by Sage Publications, (1999).

complete, connected environmental implementation and acquiescence catalogue so that they may discover out what is, and is not happening in their communities, and this has inspired the researcher to get full facts on the environmental crime in Kenya.

3.5 Chapter Summary

Woodlands and forests are among the most important basis of energy for most of the families and although this is a chance, it is straight linked to the key intimidations while: deteriorating forest value and deforestation. Within the sub-region, the degree of off-take in the forests is higher than the normal rejuvenation capability. There is very small asset in afforestation and replanting.

In natural environment human beings and the communities in which we survive with the resources, we need to accomplish lives of dignity and well-being – clean water to drink fuels for energy, clean air to breathe; food; protection from storms, floods, fires and drought; disease control and climate regulation; and places to assemble for recreational, aesthetic and spiritual enjoyment. The environmental endowments, frequently known as ecosystem services, are vital to core survival and essential to human survival.

CHAPTER FOUR
**THE ROLES OF KEY ACTORS, STRATEGIES AND FRAMEWORKS IN
ADDRESSING FOREST MANAGEMENT ISSUES THROUGH MULTILATERAL
FOREST MANAGEMENT INITIATIVES IN KENYA**

4.1 Introduction

This chapter examined multilateral forest management initiatives and environmental security in East Africa. The collected data was sorted and analysed using document and thematic analysis techniques, based on the emerging issues (contents) under study. The results of the study were presented as bar graphs, pie charts, frequency tables and narrative form.

This study aims at contributing to effective policy making informed by provision of deeper understanding on the physical composition changes of multilateral forest management initiatives. In addition, this study seeks to contribute to effective forest management and action-oriented climate mitigation by governments, forest managers, relevant agencies, communities, actors and stakeholders in Kenya and the rest of East Africa.

4.1.1 Respondents profile and return rate

The field data was collected, synthesized, sorted, and then analysed using content analysis, thematic and document analysis techniques. It is worth noting in this section that the final texts, tables and graphics used complemented each other in providing a clear reporting of the research finding, in addition, the analysed deductions were ultimately bounced against existing scholarly literature to accurately corroborate the research findings.

This section found that a total of 15 respondents successfully completed the interview guide, out of 25 initially administered for the study and thus this represented 60 percent return rate which this research considered adequate for the analysis, as the sample size remained as close to the original size as possible. The viable respondents captured were coded in alphabetical order that is; (a, b, c, d, e, f, g, h, i, j, k, l, m, n, and o).

List of Interviewee

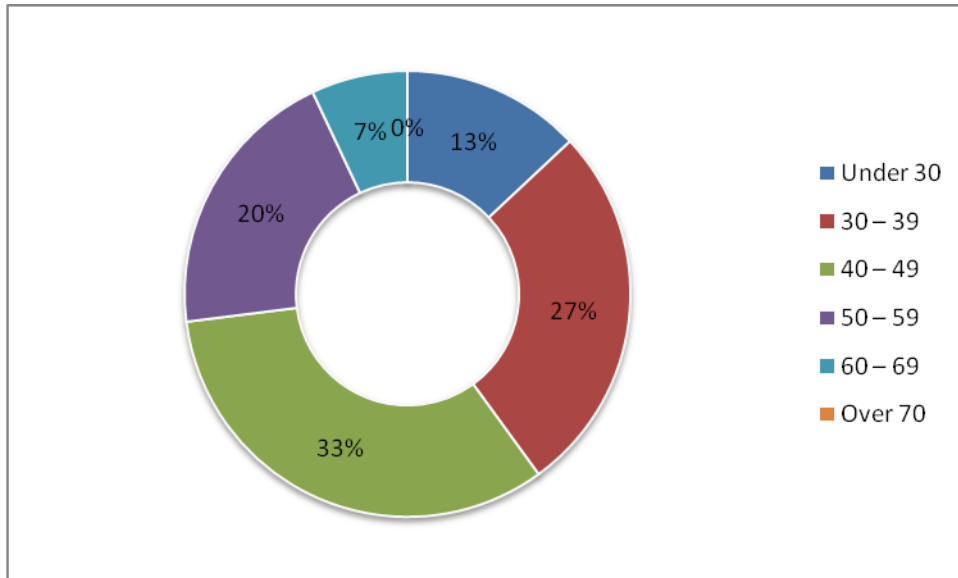
S/N	Organization	Interviewee	Occupation
1	KFS	Alex Lemarkoko	Forest Officer
2	KWS	G.Nagwala	Wildlife officer
3	Friends of Karura	Prof.Karanja	CFA -Chairman
4	Ministry of Foreign affairs	Catherine Nyakoe	Diplomat
5	Ministry of Foreign affairs	William Oddoh	Diplomat
6	USIU	Joy Ngugi	Student International relation
7	Ministry of Education	Edith Kagwiria	Teacher
8	M.Defence	Col Farah	Military
9	Department of Immigration	Rotich	Immigration
10	Ministry of Defence	Col Kipgetich	Military
11	Ministry of Interior	B.Walumoli	Senior Police Officer
12	OP	Masese	NIS
13	NDC KENYA	3 Others	

Table 1

4.1.2 Respondents by age

The respondents were asked to indicate their age distribution.

Figure 1: Respondents by age



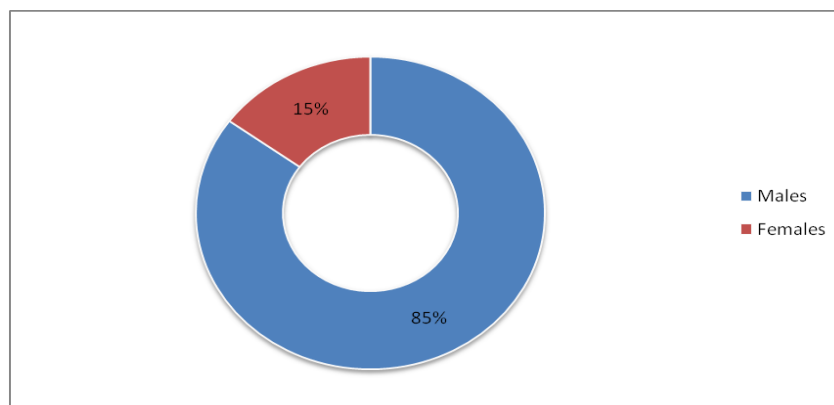
Source: Field data (2020)

The outcome showed in Figure 1 indicates that the age distribution found was higher among the respondents in age group 40-49 years at (33%), an indicating that most were mature, reliable informants and had a good grasp of the subject matter under research.

4.1.3 Respondents by gender

The respondents were requested to show their gender distribution.

Figure 2: Respondents by gender



Source: Field data (2020)

The outcome showed in Figure 2 indicates that the gender distribution found was highest in males (85%) than females (15%), indicating that males more accessible at the time of study.

4.1.4 Respondents by occupation

The respondents too were requested to stipulate their occupation distribution.

Table 2: Occupation of Respondents

Occupation	Frequency	Percentage (%)
Academia	3	20
Community	1	6
Kenya Forest Service	3	20
Kenya Wildlife	4	27
Others	4	27
Total	15	100

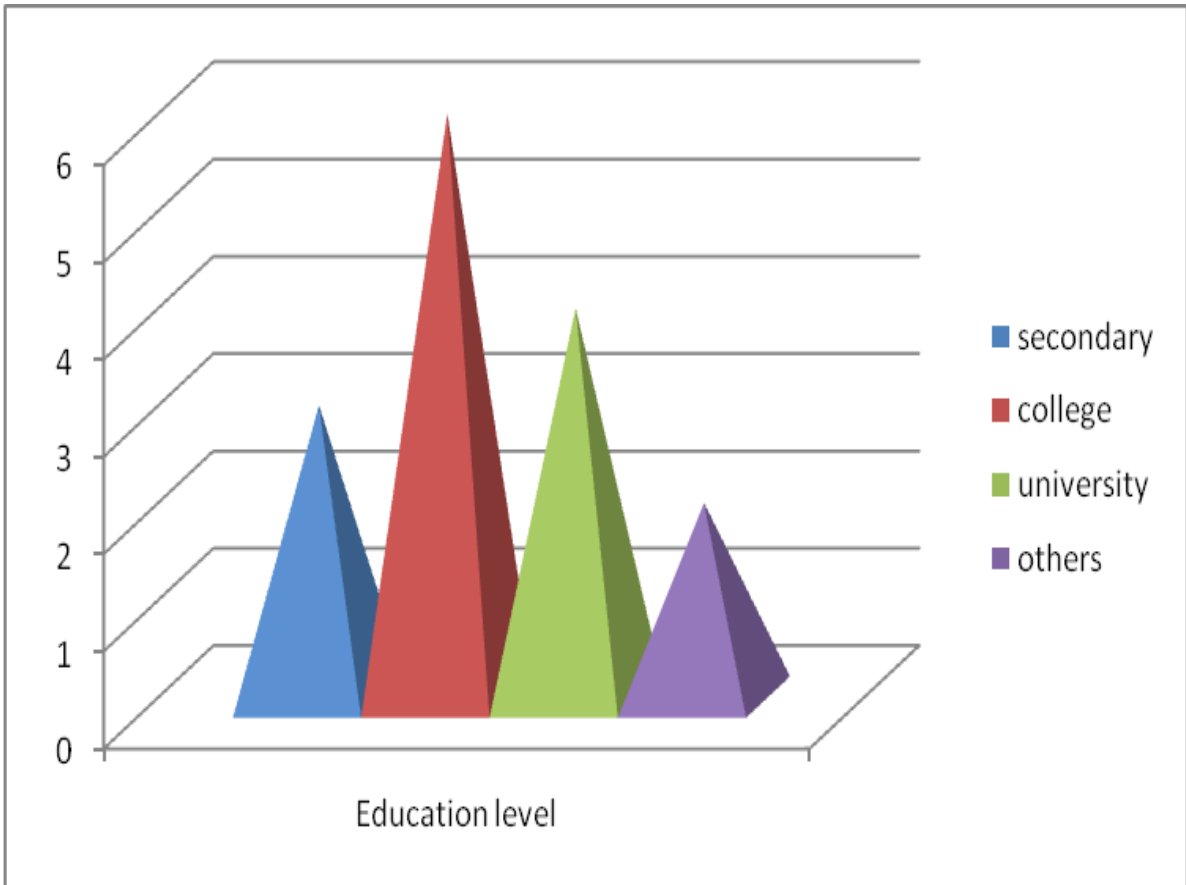
Source: Field data (2020)

The study found a wide variety of respondents from diverse backgrounds to present their views on the place of on the subject matter in Africa as shown Table 1.

4.2.4 Respondents by education

The education level of the targeted respondents was determined and the response shown in Figure 3.

Figure 3: Participant education level



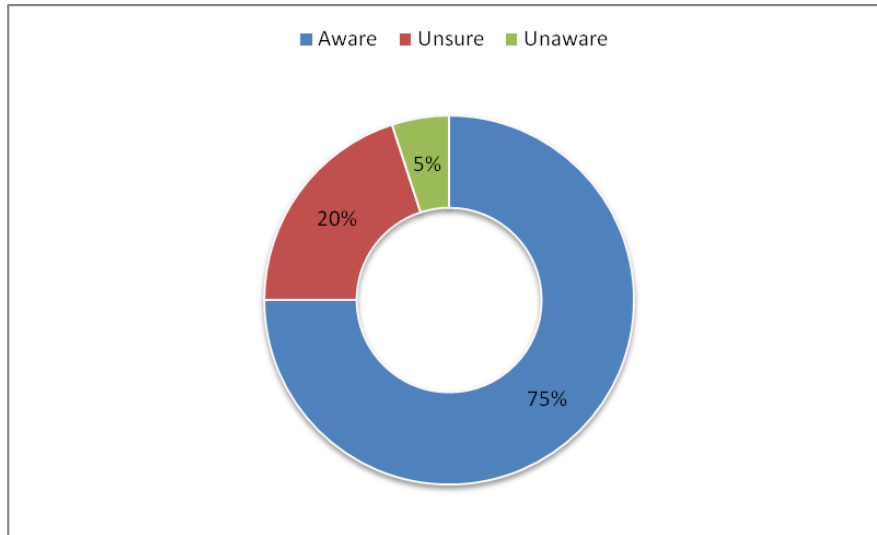
Source: Field data (2020)

This study demonstrated education level of respondents Figure 3 shows that majority of the participants education was college (6), university (4), secondary (3) and others (2) respectively, indicating that they were all fairly exposed to some degree to the topic of study.

4.2.5 Conceptualization of multilateral forest management initiatives

The concepts considered in this research for the responded to articulate multilateral forest management initiatives as a concept.

Figure 4: Respondents by awareness



Source: Field data (2020)

The respondents were probed on the concept of soft power and the results showed those aware comprised (75%), unsure (20%) and unaware (5%) as illustrated in Figure 4.

Thus, MEAs and domestic environmental laws can both be reinforced through the integration of human security principles, even as they add in to the ongoing realization of human security. The matters of human security and conflicts in accordance to climate change have progressed to a level where they now constitute an important and recognized section in the climate change debate and they are being addressed in a various forms through reports, changes in policy and meetings. The complex links between the outcomes of the processes of environmental change and processes of environmental change itself across both time and space add a new dimension to the notion of human security, a dimension that raises imperative questions about both sustainability and equity.

4.2.6 Linkage of the concepts under research

The concepts considered in this study for the respondents to articulate included; climate change and human security, conservation measures adopted to tackle climate change and mountain forests. This study found that environmental protection shields human security. Similarly, adherence to human security such as those that ensure involvement in decision

making and public access to information contributes to more fair decisions about the protection and utilization of environmental resources and protects against the possibility of abuse under the support of environmental action.¹²³

It is therefore worth mentioning that the study identified that (90%) of the respondents appreciated climate change concept. Most (99%) stated that climate change will cause new challenges to nation-states and will gradually shape both the policies of nationwide security conditions, human security conditions as well. Physical aspects of climate change such as extreme conditions like flooding, melting of ice caps in Mount Kenya, desertification, and hydrologic cycle disruptions which pose major challenges to water, vital transport and energy infrastructure¹²⁴. Some forest blocks are undergoing major challenges, like proliferation of invasive species, dumping of solid waste, and illegal logging. The dwindling of the springs and other water within the forest ecosystem could result in the reduction of water flows in the rivers, which has the potential to heighten rivalry within the pastoral communities and resident farmers. The presence of institutions, such as Kenya Forest Service, National Museum of Kenya, Kenya Forest Research Institute and National Environment and Management Authority, working with and through recognised communities can help in reversing the increasing climate change effect(s).

The majority of the participants (89%) stated that several pathways by which climatic factors could contribute to socio-economic conflicts and competition to access of resources. Increased demand, driven by population growth or economic development, or declining supply, driven by overexploitation or environmental degradation, could create scarcities of key natural resources, generating competition between affected countries or communities¹²⁵.

¹²³ FAO (Food and Agriculture Organization), 2006. The state of food insecurity in the world, 2006: Eradicating world hunger, taking stock 10 years after the World Food Summit. Rome: FAO.

¹²⁴ FAO (Food and Agriculture Organization), 2006. The state of food insecurity in the world, 2006: Eradicating world hunger, taking stock 10 years after the World Food Summit. Rome: FAO.

¹²⁵ Ibid, p. 21.

Conversely, the abundance in certain areas of highly valuable natural resources such as rivers, forests and wildlife and water ponds may render these areas a target for contending powers, whether neighbouring nations or domestic insurgents, seeking to exploit the resources for revenue.¹²⁶ Finally, severe and chronic environmental pressures such as landslides, fires, or sudden acute disasters such as floods, may displace communities from one region into another, straining local capacities and possibly sparking conflict between the affected communities. In addition, the emergence of unique pests and disease which were not prevalent may also occur on that region.

Environmental dilapidation, trans-boundary movement of hazardous materials and the unbalanced access to natural resources can cause conflict and pose a risk to national security and human health.¹²⁷ Though the risks that environmental variation poses to human security have not been eradicated, the measure of utilization and pollution in modern, biodiversity losses, high-energy use has caused a huge reduction of fish stocks, decrease in primary forest cover; land degradation and water scarcity and high incidences of water pollution and these environmental changes are global in nature because they are ubiquitous and because some pollutants such as radioactive wastes and greenhouse gases have global consequences.

For example, trans-boundary pollution can disarrange disorder relationship among adjacent communities, which divide a ordinary resource base. Health threats and unintentional relocation because of water scarcity, grazing land, unrestrained stocks of outdated pesticides or other radioactive waste forms unfair access to land resources and dangerous substances have been recognized as threats to peace and stability¹²⁸. Environmental offence is a grave

¹²⁶ FAO (Food and Agriculture Organization), 2006. The state of food insecurity in the world, 2006: Eradicating world hunger, taking stock 10 years after the World Food Summit. Rome: FAO.

¹²⁷ Aketch, M (2006). The environment and law report in Kenya. Kenya Law Reports, (Environment & Land) xiv, Nairobi.

¹²⁸ Environmental Crime: The Criminal Justice System's Role in Protecting the Environment By Yingyi Situ, David Emmons Published by Sage Publications, (1999).

and rising alarm, resultant to the almost extermination of expensive wildlife species thus considerably affecting the biological honesty of the planet¹²⁹.

Shared challenges connected to employ natural resources can also convey persons to work jointly in the direction of a common objective. Therefore the community forest association as a concept through which the government has brought together different local communities having user rights which has brought environmental cooperation, that currently acts as a influential means for avoiding conflicts between communities and societies and promoting peace.¹³⁰ Ultimately, securing human well-being depends upon protecting the environment from human pressures; that is, safeguarding the natural resources and ecological systems that sustain us all forms of life from over-exploitation by humans.

In Kenya, when it comes to environmental crime, public revelation of enforcement information is dispossessed across frequent statutes and under a variety of accountable institution. Even though adjustments towards extra open governance are being taken, they haven't stabilized yet in the environmental administration area. The deficiencies accessible, enforcement information and contradictory lawful procedures on the administration of natural resources and lack of anticipatory information revelation weaken citizen contribution in environmental enforcement. Kenyans warrant a widespread, online environmental compliance and enforcement records so that they can establish what it is and what it is not, taking place in their communities, and this has inspired the researcher to get full facts on the environmental crime in Kenya.

The Sustainable Development Goals Report addresses the continued challenges and obstacles facing the achievement of SDGs, including climate. Therefore, this study will

¹²⁹ Environmental Crime: The Criminal Justice System's Role in Protecting the Environment By Yingyi Situ, David Emmons Published by Sage Publications, (1999).

¹³⁰ Ibid, (2006).

provide new information in regards to the forms of environmental security issues in Kenya, which will add a voice to policy makers and scholars.

Actors in environmental sector

The research established that African Union (AU) has advanced accomplishment arrangement of the Environment proposals of The New Corporation projected at Africa's Development (NEPAD). This plan recognizes eleven regional essential environmental matters that are in addition recognized as crucial program areas for regional environmental partnership. They comprise: fighting drought, land deprivation and desertification, preservation and sustainable use of coastal, marine, freshwater assets and wetlands, averting, management and control of invasive foreign variety, climate change adaptation, mitigation and trans-boundary preservation or management of natural resources, sustainable organization of cities; sustainable management of sub-soil, management of cultural inheritance; non-renewable incorporated waste disposal supervision and effluence control; sustainable energy consumption and production and addressing negative effects of populace dynamics together with HIV/AIDS and armed fights on the environment¹³¹. This agenda of major anxiety environmental issue isn't insufficient or contentious, mainly preceding vital regional actors get on board, and the challenges are mainly in line with the ones that are recognized by other key actors operational regionally include UNDP, EU, AfDB, the World Bank and UNEP. Tactics controlling these actors' work in the region consist of the World Bank's Africa Environment policy, UNDP/UNEP's Poverty–Environment proposal, AfDB's Regional Environmental Strategy and EU/European Commission's Sub-regional Environmental Strategies. Sub-regionally: At this level there is a large set of actors,

¹³¹ AMCEN, 2008. Climate Change Adaptation in Africa: Scoping paper for the African Ministerial Conference on the Environment (AMCEN) Expert Group Meeting

programs and agendas. Key sub-regional actors comprise: COMESA and EAC which all have developed environmental.

In Kenya the Forests Act was focusing on the thought that forests play a significant part in the safeguarding of ground water and soils, sustain the behaviour of dependable agricultural functions protecting water catchments areas. It further moderate climate by absorbing greenhouse gases. Additionally, the law demonstrates that forests offer the major spotlight of Kenya's biological variety and a mainly vital habitat for wildlife and acknowledge that forests are the foremost supply of domestic fuelwood for the Kenyan populace. The Kenya Forest Service was established under the Forests Act of 2005 and is mandated to conservation, management and utilization of forests and forest products. Other key institution comprise of the National Environment Management Authority that was created by the Environmental Management and Coordination Act 2009.¹³²

The Forest Conservation Management Act 2016, being the most recent ratified law in the area of environmental management in Kenya, should be synchronized to convey synergy on the institutional and lawful mandates for forestry management within the foundation of sustainable improvement. This study found out that in order to make sure that ecological felonies are prosecuted; many countries have created prosecutor offices with a mandate to prosecute precise environmental crimes. These offices have the advantage that they are in particular trained, funded and supposed to track environmental crimes and violations. This office can give organization that ensures that environmental offences be sued. The management of trans-boundary ecological resources together with forestry requires regional and worldwide collaboration.

Kenya has ratified a number of mutual and regional engagements, conventions, and treaties that influence forestry. These comprise: the Nagoya Protocol on access to generic

¹³² Ibid 2009

resources and benefit sharing (ABS) mainly of which resources in Kenya happen in forests; the meeting on Biological Diversity (CBD) in relation to Flora and Fauna, United Nations Framework Convention on Climate Change (UNFCCC) and its Paris Agreement categorises forestry as a most important medium for bringing international climate change goals. Kenya's obligation has developed; the National Climate Change Action Plan and the climate change strategy and Act. The performance of the action plan will add to the attainment of the 10% tree cover; United Nations Convention to Combat Desertification (UNCCD) recognizes afforestation as vital way to preventing the spread of deserts. Kenya has committed to ensuring land deprivation neutrality by 2030. National action plan for re-establishment of degraded sites in ASALs, and Climate Smart Agriculture Strategy survive to back the nationwide efforts; United Nations Forum on Forests (UNFF) which has come out with a Strategic Plan for Forests (2017-2030) that operationalizes the Global Forest Goals on practical administration of all forests and trees outside forest; Convention on International Trade in Endangered Species (CITES). Aspects of multilateral environmental agreements (MEAs) and other regional tools and procedures require to be incorporated into forestry plans and programmes, strategies Multilateral Environmental Agreements (MEAs) and other regional tools will be localised and employed for sustainable forest management in relation to the Constitution and other regulations and other frameworks.. The government propose to support the synchronization of regional forest resource policies, including business in forest commodities and additionally support the organization of trans-boundary forest resource management agreements.

4.2 The Multilateral Forest Management Initiatives and Environmental Security

The matter of climate change are at present being organised as a security risk, rather than being just an environmental concern. Global warming leads to increased energy use subsequently, energy is a major expansion resource and developing states are expected to boost their energy requirement. Energy demand therefore has consequences for a policy intended at mitigating the effects of climate change. A policy meant to reduce hydrocarbon energy use and reduction on carbon emissions in Africa would boost economic growth, creation poverty reduction easier to manage, and saving further climate change effects.

4.2.1 Multi-lateral Timber Trade Initiative

The Forestry Agencies from Kenya, Uganda, Tanzania and Zanzibar Met in Arusha in 2013 to discuss the resolutions made in Zanzibar under the umbrella of Zanzibar Declaration which focused on trans-boundary forest management and governance. This led to signing of several MOUs aimed at enhancing collaboration with the neighboring countries in order to improve forest management, Governance and forest law Enforcements as pertains to Trans- boundary forest product and Timber trade. The main objective of the MOUs were to monitor illegal forest materials and timber across their common border, sharing information with the foresters, security agencies, Joint patrols, Joint Trainings of the Enforcement Officers. Currently an MOU between Kenya and Tanzania, Tanzania and Mozambique is in force while, Kenya and Uganda MOU is in the pipeline.

A technical committee to oversee and supervise its implementation was appointed by their respective Directors of Forestry Agencies from the region, in addition, the committee usually submit Quarterly report to a meeting of directors held once a year rotational in all the countries. The initiative have been supported and coordinated by NGOs which include World Wildlife Fund (WWF), TRAFFIC International and International Union for Conservation of Nature (IUCN), Academia, and civil society Organizations. This multilateral initiative was to

implement the East African Community forest Management and protection bill of May 2015, which provided for the management and protection of National forests, Trans-boundary forests ecosystems and to regulate cross border trade on forest products.

4.2.2 Forest Governance through FLEGT initiatives

Forest governance is referred to as a way in which public and private actors, together with informal, formal institutions large, medium-sized and small enterprises, smallholder and, civil-society organization and other stakeholders discuss, create and implement compulsory decision about the exercise, conservation and management of forest resources¹³³ .

The idea of forest governance has developed to connect some actors at several scales, from local to international. It include: governmental strategy about who income from forest resources and traditional rights; regulations concerning how forests should be administered, the application of private-sector approaches such as voluntary certification to maintain lawful wood supply and SFM; and global measures to support timber legitimacy and encourage good governance, such as the European Union’s Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan and payment schemes for environmental services, for example REDD+¹³⁴ .

4.3 National Forest programme

The National Forest Programme (NFP) is a strategic structure for forest plan, arrangement and execution to organize the sector’s development. The NFP is intended to sustain and reinstate the resilience of forests in the country by ensuring that forests are able to endure and improve from climate-related stresses and instability such as wildfires ,droughts, and epidemic of insect and diseases while adhering to the values of sustainable forest

¹³³ Ibid.

¹³⁴ Ibid.

management. Sustainable forest management will guarantee that benefits initiated from forests assemble existing want and still add to the requirements for long-term development. In spite of this, investing in forestry research is significant in the development of suitable technologies and in supporting innovation¹³⁵.

The Forests Act was anchored on the assessment that forests take part in a key function in the protection of ground water and soil; sustain the behaviour of dependable agricultural activity and role in protecting water catchments in Kenya. In addition, it moderate climate change by absorbing greenhouse gases. Further the legislation recognises forests offer the major focus of Kenya's natural diversity and a main habitat for wildlife and acknowledges that forests are the main source of domestic fuelwood for the Kenyan citizens¹³⁶.

The Kenya Forest Service was created under the Forests Act of 2005 and is mandated to conservation, management and use of forests and forest produce¹³⁷. Other key institutions are the National Environment Management Authority that was established by the Environmental Management and Coordination Act 2009. The Forest Conservation Management Act 2016, being the most recent enacted law in the area of environmental management in Kenya, should be co-ordinated to convey synergy on the institutional and lawful functions for forestry management in the structure of sustainable development.

This study found that in addition, shifting from fossil fuels to renewable energy sources will be expensive for poor economies since this course of action requires a relatively huge allocation of inadequate economic resources. Consequently, efforts to moderate climate

¹³⁵ KFS. 2015d. KFS strategic plan 2014/14–2018/19.

¹³⁶ See the Preamble to the Forests Act 2005, Act No. 7 of 2005

¹³⁶ Situma FDP "Forestry Law and the Environment in Kenya" in Okidi C O et al (eds) (2008) Environmental Governance in Kenya: Implementing the Framework Law 235 241.

change, such as way to lessen energy use in developing countries, are possibly likely to lessen human security, threaten food security and add to poverty.

This study showed that the economy of sub-Saharan Africa is extremely reliant on agricultural activities which have created huge attention in the outcome of climate change on agriculture. The East African region also has the main percentage of malnourished people worldwide, with many of the population living in a state of persistent starvation. This circumstance is projected to worsen under climate change, which could press on livestock, crops, and farmers out of their livelihood niches, and risen the occurrence and severity of floods, proliferation of invasive species and long-standing droughts.

This study noted that in new years, researchers in international relations and other field have begun to recognize security more generally, moving away from a state-centric approach to national security and more toward the thought of human security, which puts more effort on the individual and human well-being. Looking at international environmental transformation in the lens of human security connects such inconvenience as melting ice caps and carbon emissions to equity, poverty and conflict¹³⁸.

This study recognized that even as the security aspect of climate change is more obvious than before, the matter is not being taken care of by international climate regime, nor it does not have any lawful force or support. However, countries, institutions and a variety of studies and reports are progressing to emphasize the matter, and a number of countries are making changes to their national policies to accommodate these concerns and threats. As these threats flourish and turn into more varied and the globe continues to warm, such security concern will turn into more international in nature; go past boundaries, climate change, which will require rigorous and joined international response.

¹³⁸ Environmental Crime: The Criminal Justice System's Role in Protecting the Environment By Yingyi Situ, David Emmons Published by Sage Publications, (1999)

This study noted that climate change threats to mankind security in mountain areas need more enquiries. There is a need for additional inclusive proof, collected across frequent locations, and over extended period, to put up and experiment theories on the associations connecting climate change and civilization, livelihood, conflict and relocation. Meeting this need requires investigation of the understanding of varied livelihood systems to climate change; and the effect of cultural, economic, and political changes on the susceptibility and flexibility of livelihoods.

Conflicts in the midst of pastoral communities in the semi-arid and arid borderlands of southern Sudan, southern Ethiopia and northern Kenya are connected with the antagonism over access to water and pasture lands, livestock raiding and the huge occurrence of small arms. In these regions, inter-seasonal and inter-annual inconsistency in rainfall patterns determines inter-community relationships, pastoral mobility and the make use of fallback grazing areas, altered land tenure activities and conflicts all of which overgrazing of extremely used rangeland.

The study establish that accessibility of community forest resources across irregular pastoralist lands and national boundaries conflicts over significant natural resources are common characteristics that are assisting climate reduction particularly on the North Western part of Mount Kenya. Even though the accessibility of resources might appear as a natural cause, pastoral conflict might as well be started by the lack of good institution and outside intrusion. The drastic decrease of rains is connected with improved concern about conflict is a strong pointer to the part institutional governance can play in the use of natural resources such as access to pastoral lands and forests. This demonstrate that pastoralists conflicts happen more throughout a period of shortage, leading to deaths and the disturbance of livelihoods.

The study established that in addition to the socio-economic weakness of a lot of communities, fierce conflict is still common; in the North Western part the Mountain areas. In a number of Counties, like Samburu, Liakipia, and Turkana the rise in aggressive conflicts is the generally exceptional element of the communal effects of climate change. Conflict per se based on socio-cultural differences is not essentially a problem as such, but fierce conflict as a result of water and grazing land shortage due to climate change. The way the results of conflict are handled matters the most as far as policy is concerned.

This study notes that the disparity in temperature have been connected with increasing concentration of atmospheric carbon dioxide (CO₂) and other greenhouse gases (GHGs) in the ambience. In order to reduce GHG emissions and atmospheric concentration, usually are growing energy effectiveness and preservation and by cleaner, option energy sources. Less recognizable yet evenly significant using forests to tackle climate change. exceptional among all likely remedies, forests can both prevent and reduce GHG emissions while simultaneously giving vital environmental and social benefits, including forest produce, clean water, recreation, wildlife habitat and other principles and uses. Climate change will influence forest ecology in countless ways, with consequences for the ability of forests, in turn, to mitigate global warming.

This study establishes that mitigating option concerning Kenya forests and examines policies relating to forests' task in climate change. It as well recommends way to direct successful climate change moderation during carbon-trading markets, forests and forest management and bio-based renewable energy.

The study showed that the high dependence on agriculture for economic development and poverty are the major reason for the fact that a lot of developing countries will be worse hit by climate change. so far, these economies are the least able to pay for the cost of managing or mitigating the effects of climate change. Payment for ecosystem services has

been measured a competent way of satisfying communities living nearby to forest ecosystems and achieving preservation outcomes. Compensating end users, for instance the local farmers and wood concessionaries for avoided deforestation is single way to control GHG emissions and to lessen climate change impact. This asks and answers the enquiry as to who really owns the trees in diverse parts of Africa.

4.4 Key actors and forest conservation activity in East Africa as well as in Kenya

The study observes that it is demanding to get data to local communities that are often found in remote areas. Local organizations are in a enhanced position to proffer training to local communities and bring information, but they too require equipment that are appropriate for community audiences and skills in training delivery and plan. This guide is part of partnership between local partners and global conservationists. The aim is to put up a resource of local trainer and training equipment that can make easy growth of learning to local communities, bringing vital data that is accessible in ways that work well for community learner. Expert local instructors can help get vital information concerning climate change to local communities faster and be more readily obtainable for follow-up training performance.

The study establishes that that in order to improve forest management, CFA, KFS and other stakeholders focused on the preparation of a management approach. The study establish that Gathiuru Forest station on 14th April 2010 the Participatory Forest Management Plan (PFMP) (2010-2014) was accepted. Forest Management Agreement was signed one year later. This has empowered the community forest association and the process of implementing the plan and has used it as sources for soliciting donor funding, who have been able to back some of the user rights agreements.

This study indicated that cases of illegal activities have also reduced tremendously after the involvement of community forest scouts who are well trained in patrols and policing

within the forest boundaries. This tremendous achievement could not have been possible were it not for the financial support by Green Zones Support Project (GZDSP) funded by African development bank through Kenya Forest Service, funding of the key forestry programmes by KFS and support of other institutions like Laikipia Wildlife Forum.

This study further found that since recommendation on human centred approach to manageable development by the World Commission on Environment and Development (WCED, 1987), efforts towards sustainable development have been globally sustained. The new approach to environmental improvement has assisted in integrating the environmental dimensions of poverty into local development planning and implementation.

The study identified that in Kenya; a new paradigm of forest administration has been embraced based on the realization that involvement of the broader stakeholders would greatly contribute towards maintainable management of forests. The shift in forestry resource management from “protection through command and control system with minimal participation of other stakeholders” (PFM Guidelines Revised Version, 2006), to Participatory Forest Management, is aimed to (a) ensure the sustainable use of our forests and their products and (b) reservation of biodiversity while at the same time enhancing people’s livelihoods so that present and future generations benefit. The PFM approach has been designed in line with provisions by the Forest Act 2005 and the current enactment of the Forest Conservation and Management Act 2016 in involving the local communities and other participants to participate in administration of forest resources.

Collaboration between the forest community and KFS in the management of Gathiuru Forest has kicked off and is growing with time. The formation of user groups and introduction of PELIS have been vital ingredients in jumpstarting the partnership. The recognized local institution under the Forests Act 2005 is the Gathiuru Community Forest Association, which comprises of two CBOs, namely Gathiuru north and Gathiuru South

CBOs. Under the two CBOs are affiliated user groups which include grazers, bee keepers, water projects, fish farming, firewood collectors, herbal medicine, quarrying, eco-tourism, silviculture (pruning and thinning) and PELIS, timber traders, and research groups. The main products accessed from the Forest through the user groups include firewood, pasture and water. The main activities of the CFA revolve around forest rehabilitation through planting mainly under PELIS. The CFA also runs two tree nurseries through the Njoguini and Kabendera Youth Groups. Apart from the KFS, the CFA also works in collaboration with other groups, the major ones being the MKEPP and Green Belt Movement.

4.5 Chapter Summary

The study identified that fast population increase raises the burden on natural resources such as forests, water and land. It also affects forest degradation and undermines economic growth. Generally, Kenyans rely on natural resources and thus they are susceptible to climate change effect. Unpredictable rainfall, dry spells, floods, landslides, droughts, mudslides, cold spells, and heat waves have led to crop failure and a decrease in land intended for agriculture.

Climate Changes have also minimized hydroelectric power generation, brought water deficiencies and deforestation, and displaced a lot of people. Communities are neither read nor capable of adopting these effects; For example, approximately four percent of agricultural land is presently being used for irrigation. In order to efficiently become accustomed to climate change, there is a serious need to transform agricultural production, various food crops, enlarge irrigation programs and discover other sources of energy to reduce deforestation.

The study thus concludes that the relations linking population dynamics and these climate change threats can potentially have extensive repercussions on human and environmental well-being. Since climate and population change, more Kenyans are

established down in delicate ecosystems; fish production and agricultural production are deteriorating; and Kenyans' livelihoods are at jeopardy.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This section reviewed the multilateral forest management initiatives and environmental security in East Africa.

5.2 Summary of Findings

The study observes that it is apparent that East Africa suffers considerably from the variable environment patterns and the effects of climate change. Focusing on the relationship linking agricultural performance and climate change is expected to make it necessary to have a multifaceted set of policy strategies. This is an essential prerequisite, given East Africa's considerable over reliance on agriculture. Agricultural production is affected directly by climate change through superior dependency on rain fed agriculture for crops, high temperatures, more changeable and unpredictable

This study exposed that Climate change is steadily growing to be a continuous agenda point at many policy-making forums. Such importance is a sign of the perceptible effect of climate change in the influencing and determining of the balance of influence and growth course in the international political economy. It is diverse from natural climate unevenness in that it is brought about by human activities that adjust the flora and fauna composition.

Climate change is linked to natural changes, for example the rising spread of desert in the direction of the South of Sub Sahara, more strong storms and recurrent flash floods, a increase in temperature, the melting of the snow-caps of Mount Kilimanjaro and Kenya, a growing sea level and major variation to the way of daily lives.

In the East African region, desertification is leads to clashes involving farmers and herders since the accessibility of land for cultivation is being decimated. Climate-related

effect of this category are by now resulting in aggressive conflicts in Laikipia, Samburu, Tana river, Kitui and other North East counties of Kenya, together with the past of natural resource, ethnic and inter-county wars, is observed as being mainly susceptible to this originating climate-induced security hazard. regardless of being that the Country is least accountable for the release of global greenhouse gases or one of the major contributors to climate change, it will experience the effects of a varying climate most harshly.

The study recognized that the impact of climate change can be caused by a extensive and changing occurrence, such as, Prohibited logging leading to deforestation, denying forest communities of essential livelihoods, causes environmental inconvenience such as flooding and is a key donor to climate change. Illicit trade in ozone deteriorating materials supply to a deteriorating of ozone layer, which causes human health challenges such as cataracts and skin cancer. Illegal fishing causes direct losses, indirect economic losses which is an inevitable revenue); environmental impact; and socio-economic effects. Water and soil contamination from illegal injurious waste dumping can harm ecosystems and human health and illegal trade destabilises the genuine waste management and discarding industries.

The study revealed that climate change challenges are triggered by loosely organized cartels and networks of individuals with some specialist information of the area in which they work who have often been outdone by regulations. Activities are organized in the sense in which informal unity and reciprocity may be instituted rather than in the journalistic manner, for no central office or dictator directs work of members of the profession. In fact, a sole mafia-type association might exercise more restraint on exploiting threatened trees, animals and species than small competing enterprises found in a cut-throat tragedy of the commons. Complex systems of interaction exist linking raw materials and customers to producers via a

web of supplier relationships with the contribution of ancillary specialist services and other significant actors such as government officials, legitimate businessmen and consumers.

The study establishes that in mixture with present insecurities curtailing from economic, political and social factors, climate change determines and intensifies the risk of conflict and volatility, particularly under situation of deprived governance. Yet present exertions to prioritise alleviation and adaptation to climate change by tackling climate-related conflict and security challenges in a broad technique are still an illusion

The study further observes that there are a variety of ways to which Counties in Kenya can react to and moderate the negative effects of unfavourable climate change. Unfortunately, the deliberation until currently has majored on the importance of generating a safety 'hook' to which to hang climate change discussions, but modesty has been accomplished so far. The truth of the matter is that in spite of a number of the Countries producing the smallest amount of greenhouse gases they will still be hit by global warming; it has small or no say in discussions on probable solutions.

The study found that there were associations in amid climate change, security threats and governance in Countries and studies the reply of the global community in coming up with climate change policies to stop conflict and assurance of prospect security.

5.3 Conclusion

The study concludes that environmental protection and human security are equally reliant on one hand, the decrease of natural resources intensifies susceptibility to catastrophe, destabilises livelihoods and lays hominoid safety at risk. On the other hand, questions of self-ruled domination, i.e. insufficient or unsuitable plan outlines, aggressive conflict and partisan

unpredictability brought in the mistreatment of accepted resources and the misadministration of impartiality and mismanagement.

The study further concludes that there is a connection of climate change, insecurity (clash) and governance, socio-economic expansion and political growth with particular orientation to any known County within the Mount Kenya region. Climate change may cause diverse form of security pressure. These include rising temperatures and insufficient rainfall, which affect human livelihoods owing to eco-friendly strains, extending from serious droughts to reserve shortage and fight since the strengthened land use. In cases of insufficient dimensions and feeble governance and institutional constructions, these issues can elicit skirmish and cause volatility. Moreover, fight can also take place from novel environmental situation beginning from climate change allied proceedings, such as tremendous weather events and a rise in the sea levels. Thirdly, the ambiguity relating to the concentration of climate change may have lasting universal repercussions.

The answer is the use of the preventative code of acting in spite of the likelihood of the result of climate change being low for countries rich in minerals, association happens amid the utilization of natural resources, the movement of arms and the perseverance of struggle. Manage of the drift of armaments may support in dipping levels of the conflicts partly financed by resource revenue and unlawful exploitation of resources.

The study concludes that in mountain areas of East Africa, climate change challenges have been further intensified by human activities, particularly industrial activities for instance logging, cannot be easily disguised and may be deeply dependent on corruption. This challenge is not restricted to developing countries, however these challenges are usually more apparent and graver where a civil society is weaker, remuneration of bureaucrats and enforcement officials is often poor and transnational corporations that offer inward

investment are proportionately more influential. Issuing of licenses to exploit resources for instance timber can also be used as a mechanism for mobilizing wealth to reward engenders patronage and political allies.

Fighting Climate change is critical in the accomplishment of Vision 2030, especially because it affect human security, poverty levels and people's livelihoods. The dream can be achieved only when citizens become grateful for human safekeeping and live in a constructive atmosphere. The justifiable use of resources and their accessibility in acceptable quality and quantity are two very important. The increase of environmental misconducts need to be tackled in legislation and policies that make sure that local community's income from the state's natural resources so that they protect and give them value.

5.4 Recommendations

The study made the following recommendations based on the finding;

- Undertaking the studies on climate change matters: Additional educations on the variety of segments to bring on board the definite crime heights to be recorded and others that might not have been recorded. Critical amidst these offences are the ones touching on dangerous wastes, in which data is negligible and non-convincing, especially on dumping and haulage of waste product. The state of affairs is like with the scrub meat, snaring, 1 and unlawful sorting.
- Coming up with conservational communiqué strategies: It's very vital to devise a statement plan on ecological offences that can be equally exterior (targeting the media, technocrats and politicians, private and public sector and local communities) and domestic (among the main players).

- Awareness rising concerning position, nature, and amount of conservation crime, particularly amongst informal and formal institutions and local communities, will help in the fight against it.
- Capacity development of municipal establishments: Greatest environmental offences happen in areas under local authorities several that lack capability to recognize, implement and even gather and collect data on environmental crimes or have no environmental departments to deal with environmental offences. Volume structure is necessary. A size construction valuation of crucial municipal authorities should be done and a experimental program to be planned for them before a nation-wide implementation.

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APPENDICES

Appendix 1: Research Questionnaire

Appendix 2: NASCOTI Letter

Introduction

The general objective of the study is to examine Multilateral forest management initiatives and environmental Security in East Africa.

Instructions

This study is purely academic purposes only. It is my request that you please give a verbal consent to be a participant in this study.

Please fill in the questionnaire appropriately. Thanks, you for taking time to participate in this research. The personal information section is optional.

PART A Personal Information

1. Participants

Age.....

2. Gender.....

.....

3.

Occupation.....

.....

4. Ministry/Agency/Institution.....

....

5.Designation.....
.....

6.Are you familiar with climate change.....

PART B: To analyze the status of multilateral environmental agreement towards addressing environmental agreement in East Africa.

8. What do you understand by multilateral environmental agreement and mention some of them you are aware of?

.....
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.....

9.List some of the major multilateral forest management Initiatives?

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.....

10. Do you understand the multilateral forest management and Environmental Security?

Yes No

If yes what are the major Challenges in addressing Environmental Security in East Africa.

.....
.....

.....
.....

11. How do the management initiatives activities of other stakeholders within the region affect the climate change within the East African Region.

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12. There are many manifestations of climate change phenomenon in east African today?

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.....
.....

13. What is the linkage between climate change and Environmental security in East Africa?

.....
.....
.....
.....


PART C.To examine the roles of key actors, strategies and framework in addressing forest management issues through multilateral forest management initiatives in Kenya.(Tick)


14.What are the major key Actors in Forest Management in Kenya?

S Community NGOs MaKWS National Police

-END-

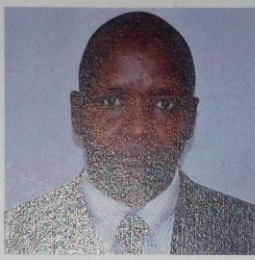
Appendix 2-Nacosti Letter


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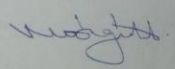


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