ENVIRONMENTAL CRIME MANAGEMENT IN KENYA

BY

WILSON K. KORIR

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SUPERVISOR: PROF. PHILIP NYINGURO

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DECLARATION

I hereby declare that this project is my original work and has not been submitted for any award in any other University.

WILSON K. KORIR

Signature…….. Date……

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

PROF. PHILIP NYINGURO

Signature……..…… Date…….

DEDICATION

This work is dedicated to my wife Joyce and children; Allan, Aggrey, Aldrich and Austin for their support and encouragement during the entire period of the study. They were all able to understand my long absence from home during the period I was undertaking the study. And for the few times that I was able to visit them home, they understood and encouraged me to work late into the night in order to accomplish my assignments.

May all of them receive God's abundant blessings.

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May God bless them all.

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LIST OF ABBREVIATIONS

CFCs - Chlorofluorocarbons

CITES - Convention on International Trade in Endangered Species of Wild Fauna and Flora

GHG - Green House Gas

INTERPOL - International Criminal Police Organization

KEPHIS - Kenya Plant Health Inspectorate Service

KFS - Kenya Forest Service

KWS - Kenya Wildlife Service

LATF - Lusaka Agreement Taskforce

MEAs - Multilateral Environmental Agreements

NEMA - National Environment Management Authority

NGOs - Non-Governmental Organizations

ODS - Ozone Depleting Substances

UN - United Nations

US - United States

USAID- United States Agency for International Development

UV - Ultra Violet

ABSTRACT

The objective of the study was to determine the effectiveness of environmental crime management in Kenya. Specifically, this included determination of factors affecting environmental crime management, causes of environmental crime, establishment of the nature and extent of environmental crime. All these assisted in understanding the effectiveness of environmental crime management in Kenya.

Research questions which the study attempted to answer include what factors affect environmental crime management, the causes of environmental crime, the nature and the extent of environmental crime and the effectiveness of environmental crime management in Kenya.

A conceptual framework was used to simplify the relationship between variables in the study. The relationship shows that environmental crime management in Kenya faces several challenges that in varied ways hinder proper environmental crime management.

The methodology adopted during the study included desk top review of existing scholarly materials for secondary data and focused questionnaire tool for primary data. The respondents were also made aware of the purpose of the research and informed on how and when they will get feedback of the study. The questionnaire was administered to key respondents and their profiles captured so as to give a picture of their understanding of their background and input to the study.

The study concludes that lack of understanding of the long term effects of environmental crimes among key stakeholders has led to crimes being treated as misdemeanors thus attracting low penalties if any, hence resulting in poor management of the crime.

The study recommends that the process of enacting legislation on environmental crime should be all inclusive, adopting a wider consultative approach. The study encourages the strengthening of environmental crime management policies. At the moment environmental crime management is a loose concept with weak policy. Environmental crimes should be addressed by policy and legislation that ensures that local communities benefit from the country's natural resources so that they value and protect them. Environmental crime management should be greatly enhanced by improving the capacity of the environmental law enforcement officials and other stakeholders through training.

MAP OF STUDY AREA

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Background of the Study

Environmental crime can be defined as a grave act against the environment that results in the infringement of the right of citizens to a clean and healthy environment. For such an act to constitute a crime, it must contravene laid-down legislation in the various sectors of the environment, such as forestry, water and wildlife. Environmental offences have, for a long time, been treated as misdemeanors, and not felonies. Environmental crime is a serious and growing concern, leading to the near extinction of valuable wildlife species, and significantly impacting on the biological integrity of the planet.[1]Broadly speaking, there seems to be various types of environmental crimes - wildlife crime is the illegal exploitation of the world's wild flora and fauna, while pollution crime is the trading and disposal of hazardous wastes or resources in contravention of national and international laws. In addition to these, new types of environmental crimes are now emerging, such as carbon trade and water management crimes.

Environmental crimes can also be broadly defined as illegal acts which directly harm the environment. They include: illegal trade in wildlife; smuggling of ozone depleting substances (ODS), illicit trade in hazardous waste; illegal, unregulated, and unreported fishing and illegal logging and the associated trade in stolen timber.[2] In as far as environmental crime and environmental crime management is concerned, one of the authorities on the emerging issues is

[1]Akech, M (2006). *The environment and law report in Kenya*: Kenya Law Reports, (Environment & Land) xiv, Nairobi.

[2] Environmental Refugees (2007) *The Forgotten Migrants*: a panel discussion – May 2007.

the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). According to CITES therefore environmental, crimes refer to acts committed in contravention of environmental national law, and at the international level, to violations of the CITES.[3]

Environmental crime management is currently being boosted by the effective enforcement of environmental laws, which are vital to any protection regimes that are designed to protect the environment. In the early days of environmental legislation, violations carried largely insignificant civil fines and penalties. Initial environmental laws and regulations had little or no deterrent effect on corporations, individuals, or governments to comply with environmental laws.[4] The literature illustrates that environmental law enforcement agencies and police services do not operate in a vacuum; the legislative instruments that political systems implement govern their activities and responsibilities within society. However, ostensibly it is the legislative instruments implemented by governments that determine many of the strategies utilized by police services in protecting the environment. Generally these International, Regional, National and County legislative instruments are designed to ensure industries, individuals, and governments comply with the various environmental obligations embedded in national statutes and laws.

Environmental crime is currently one of the most profitable forms of criminal activity and it is no surprise that organised criminal groups are attracted to its high profit margins. Estimating the scale of environmental crime is problematic but Interpol estimates that global

[3]Ibid.

[4] Environment crime now high on the world agenda (2009) http://www.unep.org/Documents.Multilingual/ Default.asp?DocumentID=530&ArticleID=5764&l=en. Accessed April 2014.

wildlife crime is worth billions of dollars a year; the World Bank states that illegal logging costs developing countries over 15 billion dollar in lost revenue and taxes annually.[5]

In the mid-1990s around 38,000 tons of chemicals chlorofluorocarbons (CFCs) were traded illegally every year – equivalent to 20 per cent of global trade in CFCs and worth over 500 million United States Dollars; and in 2006 up to 14,000 tons of CFCs were smuggled into developing countries.[6] The World agenda reveals that the characteristics of those involved in environmental crime, depend on whether the crime is intentional or not, and whether it is commercial (has some economic benefit).[7]

Perceived as 'victimless' and low on the priority list, such crimes often fail to prompt the required response from governments and the enforcement community. In reality, the impacts affect all of society. For example, illegal logging contributes to deforestation. It deprives forest communities of vital livelihoods, causes ecological problems like flooding, and is a major contributor to climate change – up to one-fifth of greenhouse gas emissions stem from deforestation. Illicit trade in ODS like the refrigerant CFCs, contributes to a thinning ozone layer, which causes human health problems like skin cancer and cataracts.[8] The World agenda document highlights the gravity of environmental crime, and plus the fact that it is not taken seriously as a crime as it should. The World agenda tries to bring out the vicious cycle of this crime, its complications and underlying issues that fuel environmental crime and in the case of

[5]Ibid.

[6] Ibid.

[7] Environment crime now high on the world agenda (2009) http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=530&ArticleID=5764&l=en. Accessed April 2014.

[8]Ibid.

developing countries the main environmental threats include; poverty, which leads to over-reliance on natural resources, land degradation in form of soil erosion, destruction of forests, loss of biodiversity through habitat loss, hazardous wastes, water pollution, air pollution, climate change and desertification.

Environmental crime can have detrimental consequences on the economies and security of a country. For individuals and communities, it may impact public health, livelihoods, and lower property values, as well as impacting on non-human species, and future generations.[9]Michael shows effects of a single environmental offence may not appear significant but the cumulative environmental consequences of repeated violations over time can be considerable.

Managing the growing and multi-faceted environmental crime challenge requires a balanced, integrated and all inclusive approach. The international community must look across traditional conservation, development and security stovepipes and establish innovative partnerships between public and private sector actors. A lot of efforts are currently being made by many different players, through effective environmental crime management.[10] Environmental law enforcement agencies operate at international level whereas others only operate at the local level. Furthermore, environmental law enforcement agencies utilize various enforcement methods to ensure compliance to environmental legislation. In some cases enforcement agencies rely on coercive powers to demand compliance to environmental laws, generally labelled "command and control" strategies, while others rely on conciliatory and educational strategies to

[9]Michael O'Hear (2004) "*Sentencing the Green-collar offender: punishment, culpability and environmental crime*" 95:1 Journal of Criminal Law and Criminology.

[10]Michael O'Hear (2004) "*Sentencing the Green-collar offender: punishment, culpability and environmental crime*" 95:1 Journal of Criminal Law and Criminology.

persuade individuals, organizations and governments to comply with environmental laws and regulations.

Kenya's unique landscape supports abundant and varied wildlife of intrinsic and economic value and has a considerable extent of wildlife habitat. With a significant population of wildlife living outside protected areas on a seasonal or permanent basis, the country's wildlife resource has suffered from the effects of human economic activities, poaching, human–wildlife conflict, demand for wildlife products in the illegal market, and weak legislation, among other factors.[11]The key institutions actively involved in environmental crime management currently are National Environmental Management Authority, Kenya Wildlife Service, Kenya Forest Service, Kenya Police, Kenya Plant Health Inspectorate Service. Other international institutions based in Kenya include Lusaka Agreement Taskforce, United Nations, and Non-governmental organizations.

1.2 Statement of the Research Problem

Environmental crime is currently a serious and growing international problem, and one which takes many different forms. Environmental crimes are criminal activities undertaken by persons that harm the environment and acting across national borders. They include illegal logging and timber smuggling, species smuggling, the black market in ozone depleting substances, the illegal movement of toxic and hazardous waste and other prohibited chemicals. Despite the recent

[11]Kamweti, D., D. Osiro, and Mwiturubani(2009)*Nature and Extent of EnvironmentalCrime in Kenya*. Pretoria, South Africa: Institute for Security Studies.

advances, attitudes to environmental crime have arguably continued to suffer from a 'mindset' that has underestimated its consequences or, at best, instilled a sense of ambivalence towards it.[12]

In Africa environmental crimes no longer pose only a conservation and biodiversity challenge. Poaching, wildlife trafficking and excessive fishing, illegal logging, charcoal, mining and waste trades are threats to international security and economic growth and development. Environmental-related crimes in Kenya have been evolving over time and continue to present growing challenges to concerned authorities. Therefore effective environmental crime management is vital as most local people depend on the environment for their livelihoods.

Currently in Kenya, when it comes to environmental crime management, the public disclosure of enforcement information is poor across various statutes and under various responsible institutions. Although steps towards more open government are being taken, these have not yet taken root in the environmental enforcement realm. The deficiencies in available enforcement information and the lack of proactive data disclosure undermine citizen participation in effective environmental enforcement.

1.3 Research Objectives

The goal of the study is to establish effectiveness of environmental crime management in Kenya. The specific objectives of this study include the following which will guide the study;

i. To determine the factors affecting environmental crime management in Kenya.

[12] Elliott L (2007) *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: 1–8. http://rspas.anu.edu.au/ir/tec/documents/Transnational Environmental Crime in the Asia-Pacific.pdf.

ii. To investigate the causes of environmental crime in Kenya, that will assist in environmental crime management.

iii. To establish the nature and extent of environmental crime in Kenya, that will assist in environmental crime management.

iv. To investigate the effectiveness of environmental crime management in Kenya.

1.4 Research Questions

i. What are the factors affecting environmental crime management in Kenya?

ii. What stimulates commitment of environmental crimes in Kenya?

iii. What is the nature and extent of environmental crime in Kenya?

iv. How effective is environmental crime management in Kenya?

1.5 Literature Review

Environmental crimes are committed in many communities across the nation and occur in a variety of settings. Nevertheless, anecdotal evidence strongly suggests that a disproportionately high percentage of environmental crimes take place in communities that lack adequate resources to prevent these crimes or effectively manage the environmental crimes or simply do not have the means to provide redress for the environmental violations that occur.[13]

According to Kangaspunta and Marshall, there is still no clear definition of environmental crime(s) in many countries and this has led to an indiscriminate use of the term,

[13]Environment crime now high on the world agenda 2009 -http://www.unep.org/Documents.Multilingual/.Accesesd April 2014.

contributing to confusion as to its true meaning. Some argue that it covers only activities prohibited by current criminal law. Others suggest that, given the influence of business interests over law and regulation, it should also include activities which are illegal but not criminal. Still others suggest that it should include activities which are "lawful but awful". Given how political, economic, social and cultural factors influence how societies define crime, it can be difficult to fully separate the question of what is illegal from what should be illegal. Underlying this debate are the various philosophical stances on the appropriate relationship between human beings and nature, the causes of environmental crime and the appropriate response to address them.[14]

Kangaspunta and Marshall attempt to define environmental crime, they clearly state that the subject matter has no clear definition and depends on who is talking, however the authors manage to show that environmental crime is now starting to be recognized by criminal law, and the authors also show a wide coverage of environmental crime and how it interconnects with other aspects like political and economic issues, and this is a clear indication that environmental crime is getting attention and it needs to be managed effectively, now more than ever before. Environmental crime includes poaching, illegal logging and fishing and poses a serious threat to sustainable development. As a major contributor to the fight against environmental crime, as well as a major destination for contraband, the European Union is currently in the process of reviewing its policies on environmental crime.[15]

The United Nations (UN) Secretary General, National Governments and independent NGO analyses have drawn direct and indirect links between environmental crime and

[14]KristiinaKangaspunta and InekeHaen Marshall, editors (2009), *Eco-Crime and Justice, Essays on Environmental Crime* (UNICRI: 2009).

[15] On 23 April 2013, R. Andreas Kraemer, Director, Ecologic Institute, Berlin and TuukkaCastrén, Senior Forestry Specialist, AES, discussed roles, responsibilities, and approaches of the EU in fighting international environmental crime.

transnational criminal organizations, insurgencies, even terrorist organizations in Africa. Europol has also discovered that many high-level drug traffickers in Brazil, Colombia and Mexico have taken on a significant role in the illegal wildlife trade, with drug and wildlife traffickers smuggling along similar routes and acting in concert with one another.[16] The UN study has raised the alarm on the connection between environmental crime and terrorism, theses two phenomena are now becoming a challenge to many countries in Africa. However this study says very little about the environmental crime management, especially in the African context.

In recent years, with greater understanding of the need to protect the environment and a better appreciation of what the environment can and cannot sustain, regulation, and in some cases, criminalization of harm to the environment is becoming more accepted. Environmental crime has been identified as one of the most profitable and fastest growing areas of international criminal activity, with increasing involvement of organized criminal networks. Serious environmental harms committed by otherwise legitimate corporations for financial motives are increasingly attracting media attention. At the 12th United Nations Congress on Crime Prevention and Criminal Justice, the international community acknowledged the challenges posed by emerging forms of crime that have significant impact on the environment and called on Member States to study this issue and share best practices.[17]Environmental crime management according to Samantha refers to the range of strategies that are implemented by individuals, communities, businesses, non-government organizations and all levels of government to target the various social and environmental factors that increase the risk of environmental crime,

[16]KristiinaKangaspunta and InekeHaen Marshall, editors (2009), *Eco-Crime and Justice, Essays on Environmental Crime* (UNICRI: 2009).

[17]Samantha Bricknell (2010) *Environmental Crime in Australia*. Australian Institute of Criminology Reports, Research and Public Policy Series No. 109. (Canberra: Australian Institute of Criminology) at p. 2.

disorder and victimization.[18]Samantha reveals that environmental crime is now beginning to be recognized as a serious criminal offence, and though it seems profitable, this crime has caused more harm than good, and the author states that it is about time that the crime is dealt with. However Samantha fails to give tangible solutions to the issues of emerging issues environmental crime, but instead the author vaguely gives possible definition and very general ways of environmental crime management.

Environmental crime is an illegal act which directly harms the environment. International bodies such as the G8, Interpol, EU, UN Environment Program and the UN Interregional Crime and Justice Research Institute have recognized the following environmental crimes: Illegal wildlife trade in endangered species in contravention to the Convention on International Trade in Endangered Species of Fauna and Flora (CITES); Smuggling of Ozone depleting substances (ODS) in contravention to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer.[19]Currently dumping and illicit trade in hazardous waste in contravention of the 1989 Basel Convention on the Control of Trans boundary Movement of Hazardous and other wastes and their disposal; Illegal, unreported and unregulated fishing; Illegal logging and the associated trade in stolen timber in violation of national laws.

According to a study carried out by Situ and Emmons, they found that in many cases, especially corporations found it more cost-effective to continue to pollute more than the law allowed and simply pay any associate fines if indeed the corporation was actually found and convicted of

[18]Ibid.

[19]Banks, D., Davies, C., Gosling, J., Newman, J., Rice, M., Wadley, J., Walravens, F. (2008)*Environmental Crime. A threat to our future.* Environmental Investigation Agency. Pg. 42.

violating environmental laws or regulations. Perversely, corporations actually had a disincentive to comply with environmental laws or regulations as compliance generally raised their operational costs which meant that many corporations obeying the environmental laws, whether out of a sense of legal duty or public obligation, were disadvantaged and lost a competitive edge and consequently suffered in the marketplace to competitors who disregarded environmental laws and regulations. As a result of weak environmental legislation and continued adverse public opinion regarding the management of the environment, many governments established various environmental enforcement regimes that dramatically increased the legal powers of environmental investigators.[20]Situ and Emmons, talk about environmental crime management in Australia, but from the perspective of business corporations, but the author still feels that they are the same who are involved in propagating environmental crime, by circumventing weak laws, meant for environmental crime management and as a result the author advocates for strong legislation that will lead to better environmental crime management. However Situ and Emmons fail to state categorically give examples of these laws that will lead to better environmental crime management.

Many reasons explain why environmental crimes occur in disadvantaged communities. One obvious reason is that industrial facilities where such crimes occur are often located in areas with low property values, making land acquisition less expensive. Another reason is that

[20]Yingyi Situ and David Emmons (1999) *Environmental Crime*: The Criminal Justice System's Role in Protecting the Environment. Published by Sage Publications, ISBN 0-7619-0036-5, ISBN 978-0-7619-0036-8.

environmental violators may believe that less oversight or law enforcement follow-up to violations occurs in such areas.[21]

For example, experience demonstrates that illegal "midnight" dumping of hazardous waste almost always occurs in poor neighborhoods. Under the cover of darkness, the dumper will take a load of drums containing dangerous waste materials to a secluded area, such as a vacant yard, an alley, or an abandoned building, and simply leave the drums there rather than pay the cost of properly disposing of them. As a result, people living in the area, including children and other sensitive populations, may be exposed to potentially injurious chemicals. Such dumping only rarely occurs in an affluent neighborhood.[22]Situ and Emmons further attempt to give a justification as to why environmental crimes take place, especially in disadvantaged areas, the examples used by the authors demonstrate that environmental crime management is not yet fully understood by disadvantaged communities and as a result, environmental crime begins to affects each and every person in one way or the other. Through their study, Situ and Emmons have managed to illustrate that environmental crime is not just a victimless crime, as earlier thought, and as a result environmental crime management is not seen or taken up as a personal responsibility for individuals in the communities.

Despite this growing awareness of environmental crimes, when it comes to environmental crime management, it still often fails to prompt the required response by governments, the enforcement community and the public. Often perceived as "victimless", environmental crimes do not always produce an immediate consequence, the harm may be diffused or go

[21]Yingyi Situ and David Emmons (1999) *Environmental Crime*: The Criminal Justice System's Role in Protecting the Environment. Published by Sage Publications, ISBN 0-7619-0036-5, ISBN 978-0-7619-0036-8.

[22]Ibid.

undetected for a lengthy period of time. Added to this is the fact that many environmental disruptions are actually legal and take place with the consent of society.[23] Classifying what is an environmental crime involves a complex balancing of communities' interest in jobs and income with ecosystem maintenance, biodiversity and sustainability.[24]

A socio-legal perspective broadens environmental "crime" to include regulatory and administrative violations. This equates crime to any illegal activity or formal rule-breaking, whatever form the rule might be. Green criminologists argue that studying criminal violations is too narrow, as environmental harms are often dealt with as civil or regulatory violations.[25] This study shows that the environmental crime, is not necessary viewed as a crime, as the laws on environmental crimes are still not clearly defined, as a result then environmental crime management is therefore not given serious consideration. This therefore study helps to support the importance of renewed interest in research studies involving environmental crime management, which will help raise greater awareness.

Intelligence-led policing is emerging in International Police (INTERPOL) member countries as a new and targeted approach to environmental crime. Within this model, sensitive information is collected, recorded, evaluated and also researched via INTERPOL's unique resources. This enables both INTERPOL and national decision-makers to proactively identify high-risk areas and persons and to devise tailored activities and operations in response. A vital

[23]Carole Gibbs *et al*, notes that one reason might be that environmental studies has largely been left to other disciplines. Carole Gibbs *et al*, (2010) *"Introducing Conservation Criminology: Towards Interdisciplinary Scholarship on Environmental Crimes and Risks"* 50 Brit. J. Criminal. 124-144 at p.124.

[24]Ibid.

[25]Ibid.

step towards effective intelligence-led policing is the comprehensive collection of data from our member countries across the world, in order to enable a truly global analysis of environmental crime. Interpol facilitates international police cooperation and assists its member countries in the effective enforcement of national and international environmental laws and treaties. Interpol began fighting environmental crime in 1992.[26]

The effective enforcement of environmental laws is vital to any protection regimes that are designed to protect the environment.[27]Despite the value they have to conservationists in the West, the reality is very different for those living next door to these animal populations. Southern African countries have fought hard against a total ban on trade in ivory, for it has the potential to generate much-needed revenue and fund conservation programs.[28] The literature shows in the early days of environmental legislation, violations carried largely insignificant civil fines and penalties. A major source of failure of US environmental protection legislation was the civil character of federal enforcement actions. Their main sanction was fines that many corporations took in stride as a cost of doing business. Therefore the US according to Yingyi Situ and David Emmons in spite of the clear legislature there is still a challenge in enforcement, when it comes to environmental crimes, and this was the main gap.

Aside from the potential negative consequences of over-criminalization mentioned above, there are two more fundamental problems associated with this current trend. First, criminalization of regulatory behavior might trivialize the criminal law itself. Every action that

[26]Interpol (2009) *Environmental crime*.

[27]Yingyi Situ and David Emmons (1999)*Environmental Crime*: The Criminal Justice System's Role in Protecting the Environment By Published by Sage Publications. ISBN 0-7619-0036-5, ISBN 978-0-7619-0036.

[28] Ibid.

harms society is a crime, the criminal law loses its one distinguishing characteristic-the moral stigma associated with being labeled a criminal. Second, focusing attention on "corporate crime" is likely to lead to misplaced priorities in environmental protection. A significant portion of our environmental ills are due to technological constraints and to behavior on the part of individual consumers. Instead of concentrating efforts on the few corporate actors who do not comply with existing laws, policymakers should place more emphasis on providing incentives for firms to develop less polluting production processes and products. Some of the largest sources of pollution come from farmers and consumers who do not utilize simple, relatively inexpensive environmentally sound practices for the disposal of hazardous products. Thus, education and enforcement programs targeting these sources might have significant benefits.[29]

Matthew Teague found that despite the imposition of the moratorium in some countries in Africa like, Botswana, Namibia, South Africa and Zimbabwe, they were still permitted one more sale of government owned ivory stocks.[30]These sale itself took place in the year 2008 and about 108 tons of ivory were sold to Japan and China. There was a great deal of concern that the sale would rekindle an appetite for African ivory, particularly by Asian countries like China, and the prediction has thus far been correct – hence the upsurge leading environmental crime.

Environmental crimes in the forestry sector include illegal trade in sandalwood, illegal logging, illegal trade in endemic flora, including bio prospecting and bio piracy; forest excisions, forest encroachment, illegal grazing, illegal forest fires, growing of bhang, and illegal charcoal making. Environmental crimes in the wildlife sector include illegal trade in wildlife and their

[29] Michael Rusin, Robert C. Anderson &Thomas J. Lareau (1989), *Managing the Environment. AReview of Present Programs and Their Goals and Methods,* DISCUSSION PAPER #57, AM. PETROLEUM INST. 47-8 (Feb. 1989).

[30] Matthew Teague (2010), *Great Migrations: The Lost Herds of Southern Sudan,* NATIONAL GEOGRAPHIC, Accessed April. 2014.

products; poaching, and illegal grazing. In the tourism sector, crimes include blockage of access to natural resources for local communities, aesthetic pollution, off road driving, destruction of marine, lacustrine and river ecosystems, and wastes pollution. Crimes in the water sector include diversion of water bodies, water pollution, and reclamation of wetlands and illegal development of riparian areas. Environmental crimes in the fisheries sector include illegal trade in ornamental fish, illegal fishing methods, illegal fish farming, illegal trawling and illegal fishing by foreign fisher folk.[31] Teague's study has been able to successfully show the different categories of environmental crimes, in addition theses author has been able to concisely discuss the impacts of these kinds of crime. However the author has not shown environmental crimes as pertains specific geographical areas. The examples used have been fairly general, but with no specific references based on the localities of environmental crimes in question.

The International Security Studies (ISS) is a regional research institute operating across sub-Saharan Africa and guided by a broad approach to security, reflecting the changing nature and origin of threats to human development. Its mission is to conceptualize, inform and enhance the debate on human security and environmental issues in Africa to support policy formulation, implementation and decision making at all levels.[32] The study by ISS is one of its kind, as it has given very good recommendations of effective environmental crime management in Africa.

Wildlife crimes encompasses a series of diverse and often overlapping offences which range from illegal hunting, processing, exporting and importing, trafficking, supplying, to receiving, possessing and consuming parts of wild animals.[33]Therefore wildlife crime frequently

[31] Matthew Teague (2010), *Great Migrations: The Lost Herds of Southern Sudan*, NATIONAL GEOGRAPHIC, Accessed April. 2014.

[32]Mathu, EM and Davies, TC (1996). *Geology and the environment in Kenya*. Journal of African Earth Sciences.

[33]Ibid.

involves other associated criminal offences, such as document fraud (such as, fake hunting licenses or export permits), money-laundering, tax evasion and corruption).

It was this recognition that gave rise to the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) in 1973.CITES is a trade agreement and primarily serves to regulate trade in wildlife in order to prevent the extinction of animal and plant species. The primary purpose of CITES is to "ensure that international trade in specimens of wild animals and plants does not threaten their survival." In order for these resources to be safeguarded for the future, CITES aims to ensure the sustainability of trade. Plant and animal species are divided into three appendices, depending on the degree of protection needed by a particular species. In order to determine which appendix applies to a particular species, a state is required "to make a determination [whether] trade in a particular species can continue without harm to the species, if trade must be closely regulated, or if it must stop in order to prevent extinction of that species.[34]

Transnational environmental crimes are criminal activities undertaken by persons acting across national borders including illegal logging and timber smuggling, species smuggling, the black market in ozone depleting substances, the illegal movement of toxic and hazardous waste and other prohibited chemicals.[35] In addition to the serious environmental consequences, these forms of illegal activity across borders can involve corruption and financial crime, loss of tax revenue, parallel trading with other forms of criminal activity, and distortion of the licit market.

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[34] Kenneth G**.** Dau-Schmidt. (1990),*An Economic Analysis of the Criminal Law As a Preference-Shaping Policy,* DUKEL.J. 1, 26-27.

[35] Richard A. Posner. (1985), *An Economic Theory of the Criminal Law,* 85 COLUM. L. REV. 1193, 1195.

Transnational criminal activities are a central problem for the effective implementation, compliance with and enforcement of environmental law, including Multilateral Environmental Agreements (MEAs). The implementation of international environmental law requires that international legal mechanisms are established and enforced at national level through appropriate legal regimes. Illegal activities challenge enforcement and undermine implementation of environmental law, including MEAs. Often these illegal activities have transnational elements and need to be combated through internationally coordinated efforts.[36]The study shows the relationship between MEA and the environment. Multilateral environmental agreements are a result of international action by governments to develop standards using treaties or through non-binding agreements from influential international declarations, resolutions, corporations and conference documents. Usually these treaties or non-binding agreements provide obligations for Governments to undertake either individual or joint action to implement international legal instruments. Posner focuses on Multilateral Environmental Agreements ("MEAs") in the form of treaties, which follow the process of ratification, adhesion, or accession by governments who then assume the obligations as soon as the treaty enters into force. And their influence on environmental crime, the author reveals that the ratification or adherence of a treaty by a state isthe beginning of the process of implementation and that once adopted and ratified.

One is confronted by tensions between technological development and the wish for a clean environment. The outlined research model represents an important starting point for an expansion of the field of legal protection of the environment in the Republic of Kenya (including possible supplements to, and changes in, legislation) and the development of a body of legal

[36] Ibid.

expertise. These will facilitate the safety of Kenyan society. Research questions need to focus upon an analysis of the forms of environmental crime and environmental crime management in Kenya and the characteristics of the offenders and their victims. If one draws from the literature and previous research into environmental crime, any research model has to include a review and analysis of the context of environmental crime management in Kenya. One of the leading agencies - when it comes to environmental crime management in Kenya is Kenya Wildlife Services (KWS) which works very closely with other law enforcement agencies in all matters of wildlife security. Engagement with the provincial administration, police, local communities, Customs and Immigration departments, Kenya Airports Authority, private ranches, and other conservation stakeholders has been intensified to address matters of mutual interest. Regionally, cross-border collaborations have yielded results in tackling crime along shared borders. INTERPOL and the Lusaka Agreement Task Force are instrumental in facilitating support when crimes of an international nature occur. Collaboration with courts in many parts of the country has also been intensified.

1.6 Definition of Terms

1.6.1 Natural Environment

The natural environment encompasses all living and non-living things occurring naturally on earth or some region thereof. It is an environment that encompasses the interaction of all living species.[37]

1.6.2 Environmental crime

[37]Johnson, D. L.; Ambrose, S. H.; Bassett, T. J.; Bowen, M. L.; Crummey, D. E.; Isaacson, J. S.; Johnson, D. N.; Lamb, P.; Saul, M.; Winter-Nelson, A. E. (1997). "Meanings of Environmental Terms". *Journal of Environmental Quality***26** (3): 581–589.

Environmental crime is an illegal act which directly harms the environment.[38]

1.6.3 Crime

Crime, also called an offence or a criminal offence, is an act harmful not only to some individual, but also to the community or the state (a public wrong). Such acts are forbidden and punishable by law.[39]

1.6.4 Environment

Environment may be broadly understood to mean our surroundings. It can be divided into non-living and living components. The Environment provides resources which support life on the earth and which also help in the growth of a relationship of interchange between living organisms and the environment in which they live. It is important to realize that humans enjoy a unique position in nature due to their exceptional ability to influence and mould the environment. In the recent past the term nature has been used as parallel to word environment.[40]

1.6.5 Poaching

Poaching is the illegal off-take of wildlife resources.[41]

1.6.6 Deforestation

Deforestation refers to the clearance or clearing is the removal of a forest or stand of trees where the land is thereafter converted to a non-forest use. Examples of deforestation include conversion of forestland to farms, ranches, or urban use.[42]

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[38]Banks, D., Davies, C., Gosling, J., Newman, J., Rice, M., Wadley, J., Walravens, F. (2008) *Environmental Crime. A threat to our future.* Environmental Investigation Agency.

[39]Oxford English Dictionary Second Edition on CD-ROM. (2009) Oxford: Oxford University Press.

[40] Mahesh Rangarajan. (2006), *Environmental Issues in India: A Reader*, NewDelhi.

[41]Kenya Wildlife Services. (2012).

1.6.7 Ozone Layer

The ozone layer refers to a region of Earth's stratosphere that absorbs most of the Sun's UV radiation. It contains high concentrations of ozone (O_3) relative to other parts of the atmosphere, although it is still very small relative to other gases in the stratosphere. The ozone layer contains less than ten parts per million of ozone, while the average ozone concentration in Earth's atmosphere as a whole is only about 0.6 parts per million.[43]

1.6.8 Greenhouse Gas

A greenhouse gas (sometimes abbreviated GHG) is a gas in an atmosphere that absorbs and emits radiation within the thermal infrared range. This process is the fundamental cause of the greenhouse effect.[44]

1.6.9 Environmental Dumping

Environmental dumping is the practice of trans-frontier shipment of waste (household waste, industrial / nuclear wastes from one country to another.[45]

1.7 Conceptual Framework

A conceptual framework helps simplify the proposed relationships between the variables in the study and show the same graphically.[46]

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[42]Sahney, S., Benton, M.J. & Falcon-Lang, H.J. (2010). "Rainforest collapse triggered Pennsylvanian tetrapod diversification in Euramerica". *Geology***38** (12): 1079–1082.

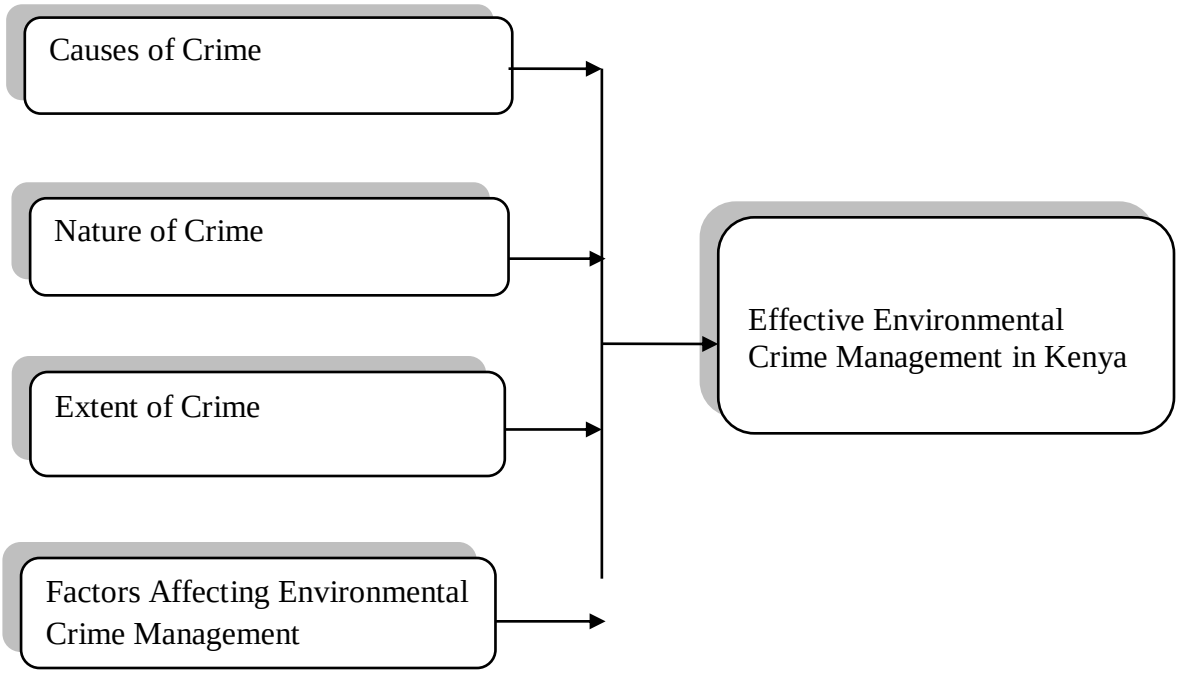
[43]World Meteorological Association. *Scientific Assessment of Ozone Depletion: 2010*, Geneva: WMO, 2011. sections 2.1-2.2.

[44]Lindeburgh, Michael R. (2006). *Mechanical engineering reference manual for the PE Exam*. Belmont CA: Professional Publications.

[45]Ibid.

[46]Mugenda Olive and Abel Mugenda; (2003) *Research Methods*; Acts Press, Nairobi, Kenya.

Figure 1: *Conceptual Framework*



Source: Author (2014)

The schematic diagram reveals that Environmental Crime Management in Kenya faces several challenges that in varied ways hinder proper environmental crime management. Some of the challenges include lack of understanding the true causes of environmental crimes, the true nature of environmental crimes, the lack of clarity in regards to the extent of environmental and finally lack of clear lacks on effective environmental crime management.

1.8 Hypothesis

H_0: Poor understanding of environmental crimes, results in poor environmental crime management in Kenya.

1.9 Justification of the Study

The 2007 Millennium Development Goals Report7 addresses the continued challenges and obstacles facing the achievement of MDGs, including deforestation among other environmental crimes. Therefore this study will provide new information in regards to the forms of environmental crime.

This study will help policy makers within the concerned institutions in particular, strengthen their fight against poaching, logging, dumping of hazardous wastes and charcoal burning in Kenya. Failure to address this crime will result in organized criminal groups increasing their wealth and continuing to launder it in order to make detection and confiscation of their assets more difficult for enforcement agencies.

The study will illustrate how environmental crimes is a threat to the economy, resulting in depletion of natural resources, as these crimes must thus be fought from all fronts if the country is to attain the goals set out in the government's Vision 2030.

This study will contribute to scholarly literature on environmental crime in Kenya and the rest of the rest of the developing countries of the world.

1.10 Methodology

1.10.1 Scope of the Study

The time scope of the study will be mainly from 2005 – 2012 as this is the time with the sharpest increase in environmental crime. The target population were employees of these institutions, such as the National Environmental Management Authority (NEMA), the Kenya Wildlife Service (KWS), the Kenya Forest Service (KFS), the police department, the fisheries department, the Kenya Plant Health Inspectorate Service (KEPHIS), the Lusaka Agreement Taskforce (LATF), the United Nations (UN), and nongovernmental organizations (NGO) and the Communities in the areas with high prevalence of environmental crime.

1.10.2 Data Gathering and Procedure

This included desk top review of exiting scholarly materials for secondary data and focused questionnaire tool for primary data. For scheduled questionnaire was used to guide on the discussion themes, this will be enhanced by taking notes.

A questionnaire is simply a 'tool' for collecting and recording information about environmental crime. It is mainly made up of a list of questions, but should also include clear instructions and space for answers or administrative details. Questionnaires should always have a definite purpose that is related to the objectives of the research, and it needs to be clear from the outset how the findings will be used. Respondents also need to be made aware of the purpose of the research wherever possible, and should be told how and when they will receive feedback on the findings.

1.10.3 Data Collection and Analysis

A questionnaire will be administered to the key respondents and their profiles were captured so as to give a picture of their understanding of their background and input towards the study. These informants included environmental sector stakeholders such as National Environmental Management Authority (NEMA), the Kenya Wildlife Service (KWS), the Kenya Forest Service (KFS), the police department, the fisheries department, the Kenya Plant Health Inspectorate Service (KEPHIS), the Lusaka Agreement Taskforce (LATF), the Interpol, the United Nations (UN), and nongovernmental organizations (NGOs), the European Union (EU), the United Nations Environment Program (UNEP) and the United Nations Interregional Crime and Justice Research Institute. After collection of the questionnaires and group discussion results, the mass of raw data collected will be systematically organized to facilitate analysis. Data analysis will be done using descriptive statistics and document analysis will be done. The researcher intends to use qualitative data collected to make general statements on how categories or themes of data are related. The main steps in the data analysis will involve; data organization, creating (identifying) categories, themes and patterns, analyzing and interpreting information. The data will be analyses by the use of Content and/or Document Analysis, through a review of literature and reports available on environmental crime.

Field researchers are often interested in studying extreme or deviant cases – that is, cases that don't fit into regular patterns of attitudes and behaviors. By studying the deviant cases, researchers can often gain a better understanding of the more regular patterns of behavior. This is where purposive sampling often takes place. For instance, if a researcher is interested in learning more about students at the top of their class, he or she is going to sample those students who fall

into the "top of the class" category. They will be purposively selected because they meet a certain characteristic.[47] Purposive sampling can be very useful for situations where you need to reach a targeted sample quickly and where sampling for proportionality is not the main concern. A sample size of 60 respondents was utilized for this study. This sample size was appropriate for the study since there (60) key stakeholders actively involved in wild life management.

1.10.4 Response Rate

The responses were obtained from the (60) key respondents are shown in figure 1.

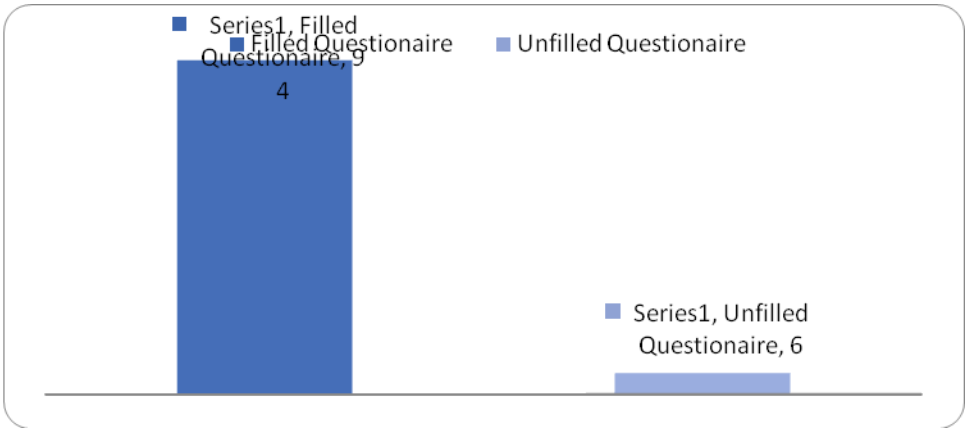


Figure 1: Response rate

The figure 1 revealed that (57) out of (60) questionnaires that were administered were successfully filled and returned. This represented (94%) response rate, ensuring that the sample size remained as close to the original size as possible.

1.10.5 Gender of Respondents

The respondents were asked to indicate their gender. The responses are presented in figure 2.

[47]Neuman, L. (2003). *Social research methods; Qualitative and quantative approaches*. (5th ed). Boston: Allyn and Bacon.

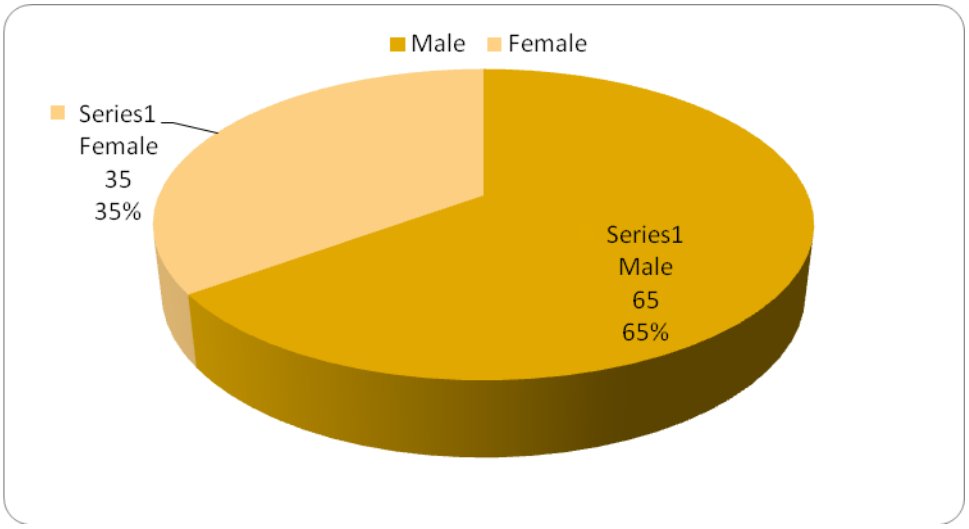


Figure 2: Gender of Respondents

The figure 2 indicates that 65% of the respondents were male while 35% were female, the number of males that responded was higher than that for female yet it is expected that the gender rule is applied in all organizations. This figure was also a clear indication of the gender distribution involvement in the fight against environmental crime, with the percentages indicating that males could be more actively involved in environmental crime more than women.

1.10.6 Age of Respondents

The respondents were asked to indicate their age. The responses are presented in table 4.2.

Table 4.2: Age of Respondents

Age	Frequency	Percent (%)
Below30 years	6	16.2
30-39 years	13	35.1
40-49 years	11	29.7
50-59 years	7	18.9
Total	37	100.0

The ages were grouped into four classes with a difference of ten years apart, The Modal class being the ages between 30-39 which was represented by 35.1% followed by 40-49 which had a percentage of 29.7%; 50-59 years had 18.9% while those who were below 30 had 16.2%. Generally the sampled population was well distributed in terms of age, as this would indicate proper knowledge and background of environmental crime management in Kenya.

1.10.7 Years Worked at the Organization

The respondents were asked to indicate the years worked. Responses presented in table 4.3.

Table 4.3: Years worked at the Organization

Years Worked	Frequency	Percent (%)
0-5 years	10	27.0
5-10 years	8	21.6
10-15 years	3	8.1
15-20 years	3	8.1
20 and above years	13	35.1
Total	37	100.0

The table 4.3 projects the number of years worked by the employees at various organizations, it was established that at least 35.1% had worked at the offices for more than 20 years. The years worked by employees were useful as it gave out information that could be considered as relevant for this study. This was used to indicate involvement of the organization in environmental crime management.

1.10.8 Level of Education

The respondents were asked to indicate their level of education. The responses in table 4.4.

Table 4.4: Highest Level of Education

Level of Education	Frequency	Percent (%)
Secondary	2	5.4
Tertiary College	12	32.4
Undergraduate	14	37.8
Postgraduate	9	24.3
Total	37	100.0

About 37.8% of the respondents had attained a university degree at graduate level, 32.4% had tertiary college education, and 24.3% of the respondents had attained postgraduate level of education while 5.4% had secondary education.

1.10.9 Locality

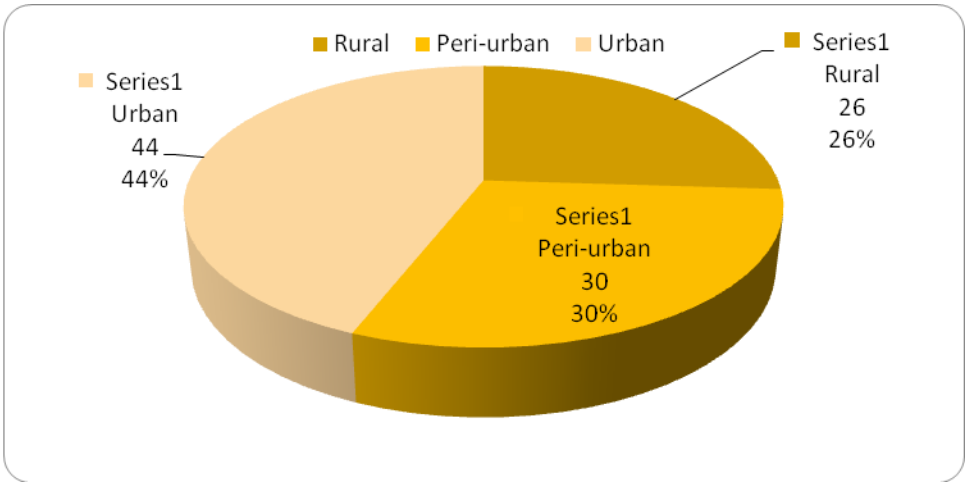


Figure 3: Locality of Respondents

The figure 3 indicates that 44% of the respondents lived in urban areas, 30% in peri-urban areas, and while 26% lived in rural areas respectively.

1.11 Study Outline

Chapter one gives a brief introduction to the study. This section is made up the background of the study. Here, the researcher lays makes conceptual framework of the variables to be addressed and particularly, what is to be investigated, why and how. Key components of this section are the problem statement, objectives, literature review and justification for the study.

Chapter two illustrates environmental crimes in many African countries with a special focus on Kenya. Investigations have revealed that organized criminal groups engaged in wildlife trade are also involved in drugs and weapons smuggling.

Chapter three shows that environmental crime management is made ineffective by corruption, poor legislature, limited resources, lack of capacity and others - a fact that should be acknowledged within cross-cutting resolutions on environmental crime within the United Nations and effective environmental crime management. The study established that dedicated funding is necessary for long-term planning. The Kenya Wildlife Service's received dedicated funding over a ten-year period, which allowed for targeted investment in compliance programs and long-term structural reorganization to improve enforcement efficiency.

Chapter four concludes with findings in regards to the objectives and the hypotheses of the study. It acts as the final and ultimate verdict on the issues addressed in the research. It makes discussions, conclusion and key recommendations on effective environmental crime management in Kenya.

CHAPTER TWO

CAUSES, NATURE AND EXTENT OF ENVIROMENTAL CRIME

2.1 Types of Environmental Crime

Environmental issues gained increasing prominence in the latter half of the 20th century.Global population growth has lead to increasing pressure on worldwide natural resources including air and water, arable land, and raw materials, and modern societies have generated an increasing demand for the use of industrial chemicals. The use of these chemicals has resulted in great benefits in raising the standard of living, prolonging human life and improving the environment.[48]This literature illustrates that the use chemicals is escalating just the environmental and human health impacts of these chemicals continue getting worse.

The illegal trade in flora and fauna and the illegal transportation and dumping of hazardous substances threaten the environment in many East African countries. The threats are caused by multiple and complex factors. Those committing the crimes are usually armed and are engaged in other criminal trades.[49]

Investigations have revealed that organized criminal groups engaged in wildlife trade are also involved in drugs and weapons smuggling. Furthermore, trade is so complex that it poses an enormous challenge to authorities in that region. It is difficult to detect these crimes and to persecute criminals and criminal groups because of the protection they receive from corrupt

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

[49] Ibid.

officials.[50] The ISS literature shows that environmental crime has become a global concern and several international conservation agencies and law enforcement bodies involved in combating it.

Environmental crime leads to the erosion of state authority and creates a culture of lawlessness. The Honduran Mosquitia, including remote areas like the Sico-Paulayavalle in the Rio Plano biosphere buffer zone, have been abandoned to an increasingly civil society with an endemically violent culture that is involved in illegal lobster fishing, illegal logging and drug-trafficking.[51] The environmental crime in Honduran Mosquitia is one of the highest and most wide spread in the World and it is currently getting worse, and the these crime might spread. The exact nature of this relationship between rarity and price varies. Demand for some luxury fashion items such as coats made from the wool of a threatened South American camelid called the vicua, for example, can switch relatively easily to other premium wools such as cashmere.

Demand for specific commodities in the TEAM pharmacopoeia may be less elastic because of the perceived importance of their use. Where demand does switch, it may generate new poaching problems elsewhere: for example, the trend towards using leopard bone rather than tiger bone in traditional medicine.[52] This is a clear illustration of the extent of the spread of environmental crimes, and Kenya should borrow from such illustration, on the best way to manage environmental crime challenges.

Environmental crime cases in which corporations are involved are often listed under the category economic crime. A comparison of different national statistics is thus often impossible

[50] Ibid.

[51]V. Holmes, (1999) *On the Scent:Conserving the Musk Deer*. The Uses of Musk and EuropeRole in its Trade (Cambridge: TRAFFIC International).

[52]J.A. Mills and P. Jackson (1994) *Killed for a Cure: A Review of the World-wide Trade in Tiger Bone* (Cambridge: TRAFFIC International.

due to the problems to filter out cases of environmental crime.[53]In some countries such as Germany the statutory offence that provides the most severe sanction is entered into the registry.

The principle that environmental considerations should be taken into account and, to every extent possible, integrated into development planning and management is arguably one of the most revolutionary ideas in development thought. It will be recalled that hitherto, the view in most quarters has been that environmental considerations impede development. Until recently, the general position has been that environmental degradation, particularly pollution, is historically part and parcel of the economic and industrial prosperity of the western world. Truly, this was in fact a manifest confusion of concepts because development should include qualitative improvement rather than simple cumulative sectoral growth.[54]Most outstanding is that the principle requires environmental legislation, which facilitates the integration of environmental exigencies into development planning and management. It reduces the traditional inordinate reliance on the State police powers characterized by command and control mechanisms.[55]

A high level of expertise is required for enforcement authorities, prosecutors and judges in some sectors, e.g. identification of ozone depleting substances or species protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).[56] Without this expertise the importance of a case cannot be determined with the resulting risk that the case is not correctly determined as organized environmental crime.

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[53]Ibid.

[54]K. Kummer, (1994). *Transboundary Movements of Hazardous Wastes at the Interface between Environment and Trade*, UNEPEnvironment and Trade Series No. 7 (Geneva: UNEP,), p. 8.

[55]P. Andreas, (2000). *Contraband capitalism: transnational crime in an era of economic liberalization*, paper presented at conference on International Organized Crime in the Global Century, p. 4.

[56]Ibid.

The problem of the agreed definition of the term "environmental crime" comes from different concepts, because some people use other terms for "environmental crime", such as "environmental criminality" or "criminality of environmental protection" (also "criminality of the environment", "green crimes", "crimes against the environment" and "ecocide"). Such disagreement in determining the basic meaning of the term have impacted upon criminological divisions and our ability to provide appropriate legal definitions, meaning that the criminal justice system is at present not adequately prepared to deal with this problem.[57] There are a number of different reasons that may explain the problems of defining environmental crime and may range from theoretical and abstract differences to political concepts due to the different interests of individual countries.

In forming a definition of environmental crime it is necessary to take into consideration both features and adjust them when searching for solutions. By discussing and abolishing the causes of such differences on the individual, local, regional, state, interstate and international levels, and by using accepted methods and tools, causes could grouped on all levels from the international down to the individual.[58]By taking such consideration as causes of environmental crime as such issues help clarify the definition, and division, of environmental crime. In all further definitions, the possibility of overlapping has to be taken into consideration and if possible, avoided.

Meško stressed, the key questions being asked by criminologists are: What are the reasons that people commit crimes? How severe has a punishment to be, so that people would be

[57]White, R. (2003). *Environmental Issues and the Criminological Imagination*. Theoretical Criminology, 7 (4), 483-506.

[58]White, R. (2003). *Environmental Issues and the Criminological Imagination*. Theoretical Criminology, 7 (4), 483-506.

deterred from committing crimes? Could the degree of penalty be a factor of preventing criminality at any level? Is criminality a social or an individual phenomenon? Is criminality a psychological, biological, social or an economical phenomenon?[59] It is important to be aware of the above questions when undertaking research in, or defining the term, environmental crime, as this is closely connected with the etiology and phenomenology of environmental crime.

Disagreements about the term ecological or environmental crime do not exist only at a theoretical level. Beside disagreements surrounding a satisfactory term, further problems are caused by different criminal-political concepts, because the interests of states regarding environmental criminal law can vary greatly. Similarly, the typologies of social politics in (post)-industrial societies are different and in today's globalized world it is almost impossible to avoid the international dimensions of life. Due to this, there is little hope of an independently formed political stance on environmental protection in some countries.[60]The literature shows that because of the ambiguity of the subject, environmental crime in modern times signifies one of the greatest challenges for legal theory and practice, criminal law legislation; criminology, sociology, ecology, criminalistics, victimology and crime prevention.

Clifford states that environmental crime is an act which is committed with the intention of damaging or causing damage to the ecological and biological systems to ensure business or

[59]Meško (2008a: 41) defines criminal etiology as the research of human nature, motives, state of mind, social conditions and economical factors. Criminal phenomenology deals with forms of phenomena, structure, structural changes and the dynamics of criminality and addresses the visible forms of crimes and criminal behavior. Finally, it leads to statements about personal and environmental factors as motives of criminality.

[60]While modern countries with stable economic systems tend to protect ecological systems by using criminal law, in less developed countries and other transitional economies, environmental (economical) crime is de facto a legalized form. In most of the legal systems of these countries there are ecological criminal acts and ecological criminal law, but none of them are enforced by competent authorities. Modern criminology in such cases speaks about 'normalization of the criminal' (Selinšek, 2006: 223).

personal benefit.[61] According to Situ and Emmons, environmental crime is actually a 'creation' of environmental legislation, because behavior, however threatening or aggressive, which does not violate the legislation, is not a criminal act.

A special feature of environmental crime reflects two real victims: people and environment. Pečar warns, that from the victim's viewpoint, environmental criminality is very similar to economic and other business criminality, where there are many victims with a lot of damage, which, when divided by thousands, do not represent a sizeable sacrifice for each individual. All this makes the problem of defining the term of environmental crime and green criminology even bigger.[62]Pečar notes that the the problem of the agreed definition of environmental crime has its basis indifferent understandings (environmental crime is also named as criminality of the environment, environmental criminality, ecocide, green crimes, etc.). Such difference of opinion in defining the basic naming of the term continues criminological and legal division and leads to inadequate criminal justice solutions to this problem. Reasons for disagreements in defining the term of environmental crime differ from theoretical and abstract differences to political concepts due to different interests of individual countries. With the incrimination of phenomena against the environment, a new field of expertise was born for criminology. This field differs from past research work, because it is all about a new deviation, which threatens resources in a special way, and it is all about a different causality as well.

Criminological discussions about environmental crime are mostly not just semantic; however, they refer to the question of how this criminality is portrayed in real life, how it is

[61]Clifford, M., Edwards, T. D. (1998). Defining 'Environmental Crime'. In: M. Clifford (Ed.), *Environmental Crime: Enforcement, Policy, and Social Responsibility* (pp. 121-145). Gaithersburg, Md.: Aspen Publishers.

[62]*Criminal law defines criminality as all actions which contradict legal norms (Selinšek, 2006:224).*

measured, explained, prevented, regulated and sanctioned. Kanduč suggests that, in respect of environmental criminality that we could talk about 'elite criminality' where powerful individuals and economic and other organizations are included, in which the environmental crime as such contains very different forms of harmful activities, whose motive is a desire for material enrichment.[63]Kanduč shows that harmful actions, which are done against the environment by a sole individual, are insignificant, but when we sum up two million of such activities, the issue becomes more important.

Furthermore, increasingly, attention is drawn into relationship between the environment and safety. The field of environmental crime, at both a national and global level, is still not investigated to a great extent.[64]Sutherland and Cressey states that the need for adequate criteria and a more structural and planned approach to such problems and responses is growing. Similarly, there is a growing comprehension that the consequences of environmental crime are becoming increasingly threatening. Some countries have typical characteristics in terms of the environmental crime they witness, and those who commit them. For this reason, universal comparisons should be made. Comparative criminology could be used to develop a survey that would originate from Sutherland's definition of criminology.

The issues surrounding the transfer of crime and criminal justice policies between countries and cultures are important. Accordingly it is important to understand just who is instigating such changes. The purpose of comparative studies of crime and criminal justice is to chart the impact of cultural, political, economic and other impacts on differences in attitudes towards law enforcement responses to crime and criminality. Comparative criminology enables

[63]Lane, P. (1998). Ecofeminism Meets Criminology. *Theoretical Criminology, 2* (2), 235-248.

[64]Sutherland, E. H., Cressey, D. R. (1974) (orig. 1960). *Principles of Criminology*. Philadelphia: Lippincott.

all this and, for this reason, it should be drawn upon more frequently in comparisons of environmental crime forms, green criminological research and environmental justice responses between countries.[65] The author has introduced a new concept known as green criminology which helps a lot when it comes to finally realizing the true definition of environmental crime.

Environmental Investigation Agency puts it that, environmental crime is "serious, transnational and organized. Grimes associated with illegal extraction, harvest, and waste are serious due to the environmental consequences, the ways in which these crimes undermine the rule of law and good governance-at local, national, and global levels and the links with violence, corruption, and arrange of cross-over crimes such as money laundering. The environmental consequences of TEC are well understood. Wildlife trafficking presents a serious threat to species and biodiversity. The demand for skins and traditional medicine pharmacopeia, for example, has contributed to the reduction in the number of tigers to such an extent that fewer than 3,200 are now estimated to exist in the wild.' The illegal pet trade has brought species such as the Lear's Macaw, native to Brazil, to the brink of extinction. Illegal logging and the trade in stolen timber is a major driver of deforestation, habitat destruction, and species endangerment.[66] Kenya has for a long time had a challenge of illegal logging, it is now said that Kenya's forests is shrinking and it would be prudent to learn from other countries that have gone through the challenges of environmental crime before, so as to borrow on their best practices.

Environmental crime covers a wide range of violations that result in harm befalling the environment and human life, from errors at the administrative or record keeping level to the

[65]Sutherland, E. H., Cressey, D. R. (1974) (orig. 1960). *Principles of Criminology*. Philadelphia: Lippincott.

[66]Ibid.

actual illegal dumping of pollutants into the environment.[67] The literature still goes to show that environmental crimes have no true definition and that it may further include but are not limited to the following: Littering, Improper waste disposal, Oil spills, Destruction of wetlands, Dumping into oceans, streams, lakes, or rivers, Improperly handling pesticides or other toxic chemicals, Burning garbage, Improperly removing and disposing of asbestos, Falsifying lab data pertaining to environmental regulations, Smuggling certain chemicals, such as CFC refrigerants, Bribing government officials and Committing fraud related to environmental crime.

2.2 The Causes and Types of Environmental Threat

Environmental crimes can be broadly defined as illegal acts which directly harm the environment. They include acts or omissions related to illegal taking of flora and fauna, pollution offences and transportation of banned substances. It is not easy to estimate the significance of environmental damage caused by criminal activity. However, it is widely agreed that this type of crime not only damages the ecosystem, but also impoverishes so many countries where pollution, deforestation and population displacement trigger conflict and prevent reaching the Millennium Development Goals.

Currently issues of environmental crimes are not restricted by borders, and can affect a nation's economy, security and even its existence. A significant proportion of both wildlife and pollution crime is carried out by organized criminal networks, drawn by the low risk and high profit nature of these types of crime. The same routes used to smuggle wildlife across countries and continents are often used to smuggle weapons, drugs and people. Indeed, environmental

[67]Ibid.

crime often occurs hand in hand with other offences such as document falsification, passport fraud, corruption, money laundering and murder.[68]

A growing body of evidence suggests that certain areas, populations and environments are more vulnerable to the effects of environmental crime. Specifically, these individuals and their communities due to socioeconomic status, geography, racial and ethnic health disparities and lack of access to care are likely to face greater susceptibility to such events. Moreover, the resultant frequency and intensity of impact from storms, wildfires, pollution, drought and other events that have been related to a changing climate will differ across areas where they reside. The common types of environments include forest, wildlife, agriculture, water, ozone, hazardous waste and many others.

2.2.1 Forests

International trade in wildlife (wild animals and plants, including forests and fish) should not be considered as synonymous with illegal wildlife trafficking. It is possible to have legal, sustainable and traceable trade in wildlife, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES or Convention) is a tool for ensuring this.

Living forests are vital to mitigating climate change because they absorb carbon dioxide from the atmosphere. Logging and clearing forest land, however, seriously contribute to climate change by releasing that carbon dioxide back into the atmosphere. Deforestation accounts for an estimated 17% of global carbon emissions, a percentage around 1.5 times greater than from all the world's air, road, rail and shipping traffic combined.[69]

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[68]Clifford, M., Edwards, T. D. (1998). *Defining'Environmental Crime'. In: M. Clifford (Ed.), Environmental Crime: Enforcement, Policy, and Social Responsibility*(pp. 121-145). Gaithersburg, Md.: Aspen Publishers.

[69] United Nations Development Programme (2004). *UNDP Development Reports*. Oxford: Oxford University Press.

National and international frameworks exist to protect forests, reduce illegal logging, support sustainable practices and reduce emission – for example, the international climate finance mechanism known as REDD or REDD+, which is supported by UN and World Bank initiatives. However, while recent years have seen increased concern for sustainable forestry, around only 8% of the world's forests are certified as sustainably managed. More than 90% of these certified forests are in North America and Europe, while the majority of the deforestation and illegal logging continues to take place in the tropical forests of the Amazon Basin, Central Africa, and Southeast Asia. It is estimated that illegal logging accounts for 50-90% of the volume of forestry activities in key producer tropical countries and 15-30% of all wood traded globally.[70] The literature illustrates that it is estimated that illegal logging still occurs in many formally protected forests, especially in tropical countries.

Forests are divided into natural and plantation forests and cover less than 3% of the country. Some 2-4-million ha have been designated as reserves. Kenya has felled more than 90% of its natural forests and ranks fifth in Africa in terms of the loss of forests. Forests are disappearing at a rate of more than 5,000 ha per year, following the settlement of people, cultivation and development projects in the reserves.[71] In Kenya environmental crimes in the forestry sector include illegal trade in sandalwood, illegal logging, illegal trade in endemic flora, including bio-prospecting and bio-piracy; forest excisions, forest encroachment, illegal grazing, illegal forest fires, growing of bhang, and illegal charcoal making.

Forest cover in Kenya is estimated at 1.7% of the total land area and an annual reduction rate of 3%. Deforestation is increasing due to encroachment, over-reliance on wood fuels,

[70]United Nations Development Programme (2004). *UNDP Development Reports*. Oxford: Oxford University Press.

[71] Jamie Benedickson (2009) *Environmental Law* (Toronto: Irwin Law) at 380.

charcoal burning, illegal logging, frequent forest fires and livestock grazing.[72]The illegal trade in Sandalwood is currently the most popular commercial illegal trade in flora. Sandalwood is the name of a class of fragrant woods from trees in the genus *Santalum*. The woods are heavy, yellow, and fine-grained, and unlike many other aromatic woods they retain their fragrance for decades. Essential oils are also extracted from the woods for use. Both the wood and the oil produce a distinctive fragrance that has been highly valued for centuries. Consequently, the slow-growing trees have been overharvested in many areas. A five-year presidential ban on harvesting sandalwood was imposed in February 2007. Sandalwood trees are in danger of extinction due to increased illegal logging in Tanzania and Kenya. Sandalwood has high commercial value in the perfume industry.[73] East African Sandalwood *Osyrislanceolata*is a semi-parasitic shrub or small tree with wood that yields commercially important aromatic oil. The species occurs in a range of open habitats, generally in arid and semi-arid environments. It is widespread, occurring mainly in the tropics and some parts of the Mediterranean. It is uncertain whether the recorded distribution for some countries relates to introduced plants.

In Kenya, the species has a wide but scattered distribution and population abundance is apparently low. Very few young plants have been observed in recent field surveys, with most stands aged 20 – 45 years. Studies at various localities reveal poor regeneration potential. Populations have reportedly been declining since 2002, as a result of the heavy exploitation for international trade. The sharp rise in extraction in Kenya is believed to be linked to overexploitation of the resource in Tanzania. In Tanzania, declines have been recorded in various

[72]Ibid.

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

parts of the country including Arusha, Manyara and Kilimanjaro Regions and the Eastern Arc Mountains. There is currently little information on the status of *Osyrislanceolata* in most other parts of its range, although there is no evidence of large-scale exploitation elsewhere.[74]

The species has been assessed nationally in both Namibia and South Africa as Least Concern. *Osyrislanceolata* was protected in Kenya by Legal Notice No 3176 of 2007 under the Forests Act, 2005. This gave protection to the species for a period of five years to allow for the development of sustainable harvesting mechanism.[75]Sandalwood contains essential oils with a fragrant scent and is used in the manufacture of cosmetics. The essential oils are more concentrated in the roots than in the stem, and as a result the whole tree is uprooted. The species has male and female plants, with the latter being favored for its fragrance.

Currently, there is a 'rush' for sandalwood because it fetches very good price son the international market: 1kg of essential oils sells for about US$ 1,500. These prices are not reflected locally, where farmers sell sandalwood to middlemen for between KSh. 80 and 200 (US$ 1 – US$ 2.50) per kg. Sandalwood was originally sourced from Chyulu Hills, and from Tsavo West in protected areas. It was then 'discovered' in the western and eastern parts of the country, with key areas including Baringo, Pokot, Samburu and Naivasha districts.[76] Sandalwood trees are in danger of extinction due to increased illegal logging in Ngorongoro and Karatu districts, Arusha Region.

Forests have in the past been excised illegally, even without the necessary degazettement. Key areas have included water catchments such as the Mau complex. The excisions have been

[74]Kalema, J. and Beentje, H.J. (2012). *Conservation checklist of the trees of Uganda.* Royal Botanic Gardens, Kew, England.

[75]Ibid

[76]Ibid.

done mainly with a view to settling indigenous communities such as the Ogiek, who have lived in the Mau all their lives, but the bulk of the land is hijacked by politicians and administrators.[77]

Effective compliance and enforcement requires international and national cooperation among the many different law enforcement agencies involved, including police and customs. Only through coordinated action can we tackle illegal logging and the associated efforts to conceal it.

The timber trade involves major crimes not only in the illegal harvesting of forests but in the illegal acquisition of logging rights, failure to pay relevant taxes, illegal transportation, transshipment, use of forged documents, mis-declarations at customs, bribery and corruption of officials, and a host of other financial and social crimes. Intimidation, human rights abuses, violence and even murder have all occurred as a result of the pernicious trade in stolen timber. While the illegal logging itself may occur far from the public gaze in remote forest regions, it is driven by demand for cheap timber in consumer markets in affluent nations.

Environmental crime is a global phenomenon but this fact sheet deals with just two of the largest flows; trafficking in timber from South-East Asia to the European Union and Asia. The trade in illegal timber from South-East Asia to the European Union and Asia was worth an estimated $3.5 billion in 2010.[78] Most of this was in the form of furniture and other finished products, but raw timber was also involved. The primary source of illicitly harvested timber was Indonesia. Indonesian wood is frequently misrepresented as coming from Malaysia and often trans-shipped from other parts of the region. Where's it is known in other developed countries

[77]Kamfor (2006). Environmental audit of Maasai Mara and Mau forest. Narok County Council, Narok.

[78]Brack D.; Hayman G., (2002) *InternationalEnvironmentalCrime*: The Nature and Control of Environmental BlackMarkets. Background Paper for RIIA workshop.

like the above case, Kenyan's statistics is still unclear, and could be a very good area to focus for further for further studies.

2.2.2 Wildlife

The international trade in wildlife is a serious conservation problem. Globally, illegal wildlife trade is said to be the second largest illegal trade in volume, second to narcotics and followed by arms and ammunition but there is no hard data supporting this claim and recently the CITES Secretariat has disavowed this statistic. Still, it's a serious threat to a number of endangered and vulnerable species. Not all of the wildlife trade is illegal: some of it is entirely legitimate, though it can put species under additional pressure, at a time when they are facing threats such as over-fishing, pollution, dredging, deforestation and other forms of habitat destruction. Items may be traded live or dead.

The international illegal wildlife trade is sometimes differentiated from bush meat trade by virtue of its geographic scale and commercialization. Bush meat, usually but not always referring to Africa, is the consumption of wildlife locally or nationally for protein.[79] The author shows that sometimes bush meat is internationalized through trade links from Africa to Europe or North America, but most bush meat is consumed near its place of origin. The international illegal trade of wildlife, conversely, is defined by the trade of high-value wild animals and products derived from wild animals across borders

Interpol has estimated the extent of the illegal wildlife trade between 10 billion and 20 billion dollars per year. While the trade is a global one, with routes extending to every continent, conservationists say the problem is most acute in Southeast Asia. There, trade linkages to key

[79]Roe, D. (2002). *Making a Killing Or Making a Living: Wildlife Trade, Trade Controls, and Rural Livelihoods*. IIED. ISBN 978-1-84369-215-7.

markets in China, the United States, and the European Union; lax law enforcement; weak border controls; and the perception of high profit and low risk contribute to large-scale commercial wildlife trafficking. The ASEAN Wildlife Enforcement Network (ASEAN-WEN) ASEAN Wildlife Enforcement Network, supported by the U.S. Agency for International Development and outside funders, is one response to the region's illegal wildlife trade networks.[80] This goes to show that environmental crime is not just a challenge for Kenya, but a problem the World over.

This is a crime in both forests and wildlife conservation areas and is closely tied to encroachment. It is a major problem especially in the Tsavos, Mau complex and Mt Kenya regions. Countrywide, about 500,000 animals are poached annually, with the Tsavos accounting for about 80%. The KWS alone arrests in the region of 1,000 persons a year, others are arrested by KFS and the police for trespassing on private property.[81]KWS has a challenge in managing environmental crime and the problem is difficult to manage as the boundary between the protected areas and forests has no barriers. The local communities, mostly pastoralists with high regard for their animals, also feel they have a 'right' to graze their animals anywhere. Illegal grazing also occurs in Laikipia, where pastoral communities invade private, agricultural and ranching farms.

Notable trade hubs of the wildlife trade include Suvarnabhumi International Airport in Bangkok, which offers smugglers direct jet service to Europe, the Middle East, North America and Africa. The Chatucak weekend market in Bangkok is a known center of illicit wildlife trade, and the sale of lizards, primates, and other endangered species has been widely documented.

[80]Ibid.

[81] Ibid.

Trade routes connecting in Southeast Asia link Madagascar to the United States (for the sale of turtles, lemurs, and other primates), Cambodia to Japan (for the sale of slow lorises as pets), and the sale of many species to China.[82] The literature shows that despite international and local laws designed to crack down on the trade, live animals and animal parts - often those of endangered or threatened species - are sold in open-air markets throughout Asia. The animals involved in the trade end up as trophies, or in specialty restaurants. Some are used in Traditional Chinese Medicine (TCM).

Wildlife-protected areas occupy about 8% of Kenya's land area. There are currently 23 terrestrial national parks, four marine national Parks, twenty eight Terrestrial National Reserves, six Marine National reserves, and four national sanctuaries. The protected areas are distributed in all ecosystems and therefore provide an important protection system for flora and fauna and their habitats.[83]Due to a rise in elephant populations, African countries began elephant culls through selective thinning to avert land degradation and sustain the carrying capacity of their habitat.

Culling for population control is common in wildlife management, particularly on African game farms and in Australia in national parks. In the case of very large animals such as elephants, adults are often targeted. Their orphaned young, easily captured and transported, are then relocated. Without proper elephant socialization, young male elephants are believed to become unruly and extremely dangerous to other elephants, wildlife and humans.[84] Culling is controversial in many African countries, but reintroduction of the practice has been

[82]Roe, D. (2002). *Making a Killing Or Making a Living: Wildlife Trade, Trade Controls, and Rural Livelihoods*. IIED. ISBN 978-1-84369-215-7.

[83]Kamfor (2006). *Environmental audit of Maasai Mara and Mau forest.* Narok County Council, Narok.

[84]Nduru, Moyiga (2005. *Is Culling a Four-Letter Word?*Interpress.

recommended in recent years for use at the Kruger National Park in South Africa, which has experienced a swell in its elephant population since culling was banned in 1995.[85] Despite the controversies surrounding culling of elephants in Kenya, Moyiga talks about at length, as possible option to environmental crime management, as in the case of poaching.

In some Countries in Africa, culling operations earlier viewed as highly controversial, for it often disrupted the structure of elephant herds and led to the killing of entire family groups in order to minimize disruption, but over time some Countries in Africa soften their stance. As a direct result of the interdiction of poachers and culling operations, many African nations had stockpiled ivory, including ivory from the natural deaths of elephants.[86] These nations were forced to sit on their stockpiles, which sometimes equaled up to 470 tons of ivory. Furthermore, governments not only had to store the ivory in humidified conditions, but also had to pay to protect it from theft.[87] The literature notes that some countries were unable to sell their stockpiled ivory even if the proceeds of a sale were to be used towards anti-poaching efforts, development funds, or compensation to villagers whose property had been damaged by elephants.

Recently, 18 crates of snakes and terrapins were impounded at Jomo Kenyatta International Airport (JKIA). A similar consignment had already fl own out, but was intercepted in Frankfurt, Germany, with assistance from Interpol.[88] Culling was carried out in a number of Countries in Africa, but it never quite caught on in Kenya all these years.

[85]Ibid.

[86]Mathu, EM and Davies, TC (1996). Geology and the environment in Kenya. Journal of African Earth Sciences.

[87]Ibid.

[88]Ibid.

There is also illegal trade in bush meat from zebra, buffalo, giraffe and other animals. This is sold mostly in Nairobi and other major towns. The main outlets are hotels and restaurants, where the meat is cut into small pieces and cooked, rather than places such as butcheries where meat is displayed.[89] The trade in bush meat is receding, but it has been a tough battle for KWS. It is illegal in Kenya to handle wildlife or wildlife products without a license. Illegal trade involves mainly African grey parrots and lovebirds, most of which originate from Congo and Uganda.

2.2.3 Agriculture

Agriculture is practiced mainly in the medium- and high-potential areas. Genetic diversity within and between species comprising agricultural biodiversity in the country is being reduced by pressure arising from efforts to improve productivity through cross-breeding and general preference for exotic varieties of both crops and breeds of animals. Agricultural biodiversity also faces threats from neglect and under-utilization of indigenous crops and animal species.[90]The recent and rapid expansion of biotechnology and GMO during the past decade has created a lot of debate and concern within the agricultural sector and major consumer groups.

Agriculture accounts for 70% of water consumption, domestic use 20% and industries 4%. However, deforestation of water catchment areas at an annual rate of 3% in the Mau, Mount Kenya, Mount Elgon, Aberdares and Cherangany forests poses a threat to underground and surface-water availability.[91]

2.2.4 Water

[89] Ibid.

[90]Kamfor (2006). Environmental audit of Maasai Mara and Mau forest. Narok County Council, Narok.

[91]Ibid.

Kenya is estimated to receive 354-billion m^3 of rainwater annually, whilst annual potential of underground water is reportedly about 619 million m3. Water availability is presently 647m3 and is projected to fall to 253 m^3 by 2025. This is against the per capita of 1 000 m3 considered the threshold for water sufficiency. Kenya has a total of 467 lake and wetland habitats estimated to cover 1 460 300 ha or 2.5% of total land area.[92] There is currently a shortage of water in Kenya; the constraints to water supply include uncontrolled diversion, degradation of catchments, microclimate and weather changes, changes in settlement patterns and quarrying along the riverbanks and beds.

Water quality is not monitored regularly because of financial constraints and the absence of monitoring systems. More than half the population does not have proper sanitation facilities. No more than 30% of the present 142 urban areas have sewerage systems due to financial and planning deficiencies.[93] In Kenya the key water resources include surface water, rainwater and groundwater and these are polluted by organic, inorganic and microbial matter. The main causes of water pollution include effluent from industry and agricultural activities, soil erosion, municipal solid and liquid wastes, sludge from wastewater treatment plants, asbestos and mining activities.

The main environmental threats in the country include: poverty, which leads to over-reliance on natural resources, land degradation in form of soil erosion, destruction of forests, loss

[92] Nelson, F., (2009) Reforming wildlife governance in east and Southern Africa: The role of corruption. Chr. Michelsen Institute, U4 Brief 2009:12.

[93] Milliken; Shaw, (2012) The South Africa – Viet Nam RhinoHorn Trade Nexus**:** A deadly combination of institutionallapses, corrupt wildlife industry professionals and Asiancrime syndicates, traffic Report.

of biodiversity through habitat loss, hazardous wastes, water pollution, air pollution, climate change and desertification.[94]

Diversion of water bodies is illegal in Kenya and is done mainly for irrigation. In some instances, it has led to significant adverse environmental impacts and water use conflicts, especially between communities upstream and downstream. An example is the Rumi River in Taveta, which originates from the Kilimanjaro hills and flows to Lake Jipe from where another river, Ruvu, starts. Earlier, water had been diverted using blockages so that it fl owed directly to Ruvu River, bypassing Lake *Jipe*, which was in danger of drying up completely. Water from *Ruvu* River flows to *Nyumba ya Mungu* dam and then goes on to generate power. As the *Ruvu* is in Tanzania, the issue is actually transboundary in nature. Rivers have also been diverted for fish farming. The diversion of water bodies is closely tied with over-abstraction of water. Most water abstracted is not metered. Further, the abstraction occurs all year in contravention of laid-down regulations, which mandate the construction of reservoirs for storage.[95]

Crimes in the water sector include diversion of water bodies, water pollution, and reclamation of wetlands and illegal development of riparian areas. Water pollution is rampant and includes discharge of effluent directly into water bodies. The most common illegal source of pollution is discharge of raw sewerage from municipalities that lack adequate systems for sewerage treatment and disposal. Other polluters are industry and hotels.

2.2.5 Crimes in the Fisheries Sector

[94]Ibid.

[95] UNEP/GoK (2006). Kenya drought impacts on agriculture, livestock and wildlife. UNEP, Nairobi.

Environmental crimes in the fisheries sector include illegal trade in ornamental fish, illegal fishing methods, illegal fish farming, illegal trawling and illegal fishing by foreign fisher-folk. Other environmental crimes in the country include hazardous wastes, and failure to comply with the provisions of the Environmental Management and Coordination Act (EMCA) and its regulations.[96]

2.2.6 Ozone Depleting Substances

All life on Earth is dependent upon the ozone layer, a thin layer of gas in the upper atmosphere, which shields the Earth's surface from harmful solar ultraviolet radiation (UV).In 1985scientists detected severe thinning of the ozone layer in Antarctica. Since then this hole in the ozone layer has been recorded every year, generally growing bigger and lasting longer. Alarming reductions in ozone levels over Europe and North American mid-latitudes have also been observed in the majority of years over the last decade. It is predicted that Arctic ozone losses will persist into the 2050-2070 period, with recovery taking several more decades.[97]Increased exposure to UV directly impacts human health. Effects include suppression of the immune system, photo-aging of the skin, cataracts and skin cancer. Every year there are between two and three million new cases of non-melanoma skin cancers globally, with many annual deaths from various types of skin.

Children are most at risk from the damaging effects of UV radiation. It is not just humans that suffer the damaging effects of UV radiation: plants and ecosystems are also at risk. Research shows that UV-B impairs the reproductive capacity and early developmental stages of aquatic organisms. Increased exposure to UV light in terrestrial plants results in a reduction in height,

[96]Ibid.

[97] Rai, L. C. &Mallick, N. 1998. Algal responses to enhanced ultraviolet-B radiation. PINSA B64(2), 125 –146.

decreased shoot mass, and a reduction in foliage area. In 1987, global concern over the threat posed by ozone depleting substances led to the formation of the Montreal Protocol on Substances that Deplete the Ozone Layer.[98]There is debate on environmental management and the protocol establishes legally binding controls on the national production and consumption of ODS with complete phase-out as the final goal, allowing the ozone layer to recover.

In the mid-1990s EIA began probing the origin of the illicit CFCs seized in theUS. Scrutiny of shipping documents and indictments revealed that much of the material was manufactured in Russia, which had continued producing CFCs in contravention of its obligations to the Montreal Protocol. EIA also discovered that much of the contraband CFC stunning up in the US had passed through the hands of European brokers, using another loophole in the protocol. Under so-called Inward Processing Relief (IPR) provisions, traders were free to import CFCs in bulk tankers to be repackaged in smaller containers. This provided a convenient front for laundering CFCs onto the black market.[99]

One company in the UK cropped up time and time again. This company imported CFCs from Russia into a Birmingham warehouse where they claimed the products were being repackaged under IPR rules. Yet in contravention of these rules the CFCs were not sent on to developing countries but ended up on the US market. Following the trail led EIA to another company also based in the UK. EIA discovered that this second trader had set up operations in Estonia to supply Russian CFCs to the black market. Despite such evidence, the EU authorities

[98]Ibid.

[99] Environmental Effects of Ozone Depletion andits Interactions with Climate Change: 2002Assessment. United Nations EnvironmentProgramme, Nairobi 2003.

insisted that CFC smuggling was not a problem in Europe.[100]The main source of air pollution, however, remains industries in major towns.

As a country, we hope that the alternative fumigant to methyl bromide will perform; otherwise it will be a great challenge to the country's grain silo storage facilities and food security.

Kenya has made considerable progress in phasing out Ozone Depleting Substances (ODS) in most applications.[101] There are challenges that need to be addressed collectively at the global level to ensure that when one environmental problem is being solved, it does not lead to creation of another as some alternatives to ozone depleting substances have high global warming potential (GWP) that have detrimental effects on climate system. Towards this end, alternatives should be evaluated holistically to avoid a situation where the alternatives solve one environmental problem and contribute to another environmental problem

2.2.7 Hazardous Waste Dumping

Hazardous wastes, including medicinal wastes and radio-active waste, pose serious risks to the environment. The country has very few facilities to handle such waste. Most clinics and hospitals do not have incinerators to dispose of their wastes.

There is much concern about radioactive pollution, including radioactive wastes dumped on uncontrolled landfill sites without inspection by local governments. This may affect the health of garbage-processing workers and scavengers. Radioactive materials dumped on the coast may affect the natural environment, and there is the international transport of nuclear wastes. Some20 years ago, the Kenya Grain Growers Cooperative Union complained about dumping of

[100]Ibid.

[101]Ibid.

radioactive wastes by oil-drilling companies in Wajir and in Athi River, Ngurumani and Menengai. In other incidents, lorries carrying suspicious materials (claimed to be scrap metal) were stopped in Garissa.[102]

Transportation and disposal of hazardous wastes is also not uncommon at the port of Mombasa, where occasionally, damaged or leaking cargo is send backto the ship. In one incident last year, two leaking containers of nitric acid were returned to the ship. Ideally, the cargo should have been stripped and salvaged atthe ship owner's cost before going back to the ship, the owner refused to comply and the nitric acid was dumped into the sea. The vessel owner has been sued.[103] Other violators include medical clinics and hospitals without incinerators to burn their waste as required and that dump medical and solid waste together. Others are transporters of solid waste, who have to be registered, have covered vehicles, and the required personnel. Illegal waste dumping flourishes when appropriate governance and regulation is lacking, including failures to determine or protect property rights (open access problems), inappropriate or weak regulation and corruption.

A specific case in point is waste. In addition to the challenges of monitoring and detecting criminal conduct, there are varying definitions or understandings from country to country of what constitutes 'waste', 'hazardous waste' and 'illegal shipments' of hazardous waste. To make things even worse, most developing countries apparently lack an adequate legal framework enabling them to effectively define, prevent and combat illegal traffic (SBC).[104]

Tourist facilities are wanting in terms of both solid and effluent disposal, with some

[102] Military Advisory Board (2007): *National security and the threat of climate change*. Virginia: CAN Corporation, April.

[103]Ibid

[104]Ibid.

facilities discharging their wastes directly into water bodies. Poor disposal of solid wastes by the tourist facilities are evident from the many marabou storks seen hovering around their waste disposal sites. The facilities also contribute to beach littering and pollution, and impact on wildlife, which become dependent on waste food. Although several chemicals, especially persistent organic pollutants (POPS) have been banned in Kenya, they are still used and traces found in water bodies, agricultural produce and soil samples.

2.3 Electronic Waste

The UNEP estimates the current e-waste generated annually in Kenya at 11,400 tons from refrigerators, 2,800 tons from TVs, 2,500 tons from personal computers, 500 tons from printers and 150 tons from mobile phones.[105]Kenya hit the jackpot. It's been sitting on this lucrative business for a while, and now, e-waste is turning into e-profits. Nairobi's Kibera district, a place far off from wealth and prosperity, with most of its big population living on less than minimum wage, is Africa's largest slum.

The fast growth of the ICT sector globally is driven primarily by national initiatives to enhance competitiveness in the global information society. This has lowered the cost of ICTs in many instances, and in many countries, taxation has been reduced or eliminated altogether. In addition, the move towards information society initiatives such as telemedicine, e-government, and e-education calls for the increased acquisition and use of computers, as well as programs to increase computer penetration. Against the high growth is the high rate of obsolescence of ICTs due to technological change. This means that there is a need to dispose of large quantities of computers. Globally the United Nations Environment Program (UNEP) estimates that up to fifty

[105] Press Release UNEP, 2010.

million tons of e-waste is generated annually worldwide.[106] Basically used electronics are one of the fastest growing sources of waste globally. In Africa three countries feature as dumping hot zones: Kenya, Nigeria and Ghana. There are also 'suspected' e-waste dump sites in a number of other African countries. Kenya is one and it is urgently trying to enact legislation to target disposal of used electronics.

As African countries join the global information society, the volume of ICT equipment in these markets continues to grow rapidly. Most e-waste recycling in developing and transition countries is done informally and there is little regulation in place to safeguard the health of those who dismantle the electronic equipment. Additionally, many developing countries have been caught up in a web of global e-waste dumping. This usually goes unnoticed due to the lack of legislation that governs the importation of non-functional, non-reusable and obsolete electronics into the various countries. Kenya is cited as one such e-waste dumping spot.[107]The term e-waste is a generic term encompassing various forms of electrical and electronic equipment that are old, end-of-life electronic appliances, or have ceased to be of any value to their owners (UNEP). E-waste includes electronics which are destined for reuse, resale, salvage, recycling, or disposal. E-waste is the most rapidly growing problem in the waste stream due to its quantity, toxicity and carcinogenicity. Often, the toxic material is improperly disposed and thus poses a threat to human health and the environment.[108]It is in response to this need that these guidelines have been developed and will be key to the establishment of e-waste regulations and an e-waste policy for

[106]Ibid.

[107]CCK(CommunicationsCommissionofKenya)2007,InternetMarketanalysisreportcommissionedtoNetcomSystems, CCK,Nairobi.

[108] United Nations Environment Programme (Department of Resource Survey and Remote Sensing) 2007. E-Waste Volume II. E-Waste Management Manual.

Kenya. Included in the guidelines are approaches to enhance environmental protection, policy and regulatory frameworks, environmental awareness, e-waste categories and target groups, e-waste treatment technologies, and disposal procedures.

A mass flow study carried out in 2007 by Kenya ICT Action Network showed that 1,513 tons of electronics entered the market. The consumer in addition to receiving 1489.4 tons also received 151.3 tons from the second hand market. It was also revealed that consumers are likely to dispose 1,210.4 tons in the second-hard market, and 18.6tonnes to collectors or as general waste which is sent to refurbishers. The consumer disposes a further 18.6 tons directly to recyclers. Refurbishers and recyclers then send 605.2 tons for disposal. Although there have been initiatives by reputable firms to manage e-waste such Nokia through their recycling scheme and Computer for Schools through their refurbishment program, the practices for managing e-waste are mostly handled by the informal sector (*Jua Kali*). Most of these operators have inadequate skills, are neither registered nor authorized and operate in a secretive manner. These operations are well connected to the supply chain processes of sourcing the raw material to finding markets for the recovered materials during post-recycling operations. The processes are highly toxic and impact adversely to both the environment and human health.[109]Increased use of technology especially in ICT, low initial cost, and unplanned obsolescence of electrical and electronic equipment has led to an e-waste generation problem for Kenya.

There is no system to manage the various groups involved in the management of e-waste in Kenya. E-waste has to be managed through a carefully organized system and existing actors should be part of the proposed system. The target groups do have a collective responsibility for

[109] Recycling From E-Waste To Resources: *Sustainable Innovation and Technology Transfer Industrial Sector Studies, July 2009*. United Nations Environment Programme & United Nations University.

managing the e-waste at different stages in its life-cycle.[110] The e-waste is currently becoming a major threat in Kenya, and its environment, and it is beginning to be seen as a major crime.

[110] Recycling From E-Waste To Resources: *Sustainable Innovation and Technology Transfer Industrial Sector Studies, July 2009*. United Nations Environment Programme & United Nations University.

Prashant, N., (2008). "Cash For Laptops Offers 'Green' Solution for Broken or Outdated Computers".

CHAPTER THREE

ENVIRONMENTAL CRIME MANAGEMENT IN KENYA

3.1 Efforts against Environmental Crime

In fighting environmental crimes, a strong regulatory regime and effective prevention mechanisms, including anti-corruption measures, may be just as important as criminal law tools.[111] Environmental crime management is impeded by some factors, key among them being corruption, lacks of resources and lack of clears legislature, a fact that should be acknowledged within cross-cutting resolutions on environmental crime.

It is because of often thematic policy-making at international level, criminal accountability for environmental harms derives from a wide array of norms scattered among a diverse set of treaties that often impose differing, sometimes obscure, standards of protection. For environmental crimes, international criminal law conventions (or a single convention) could be conceived in order to have comparable obligations of criminalization and an extension of criminal jurisdictions ensuring that no safe havens remain for the offenders (ISISC).[112] More systematic accounting for the hidden costs of transnational environmental crime, for example loss of current and future revenue resulting from degradation of ecosystem services, or the social and economic costs of floods resulting from extensive illegal logging, as well as the increasingly

[111] EIA, 2008. Environmental Crime: A threat to our future. Environmental Investigation Agency. Emmerson Press, UK. (http://www.unodc.org/documents/NGO/EIA_Ecocrime_report_0908_final_draft_low.pdf).

[112] ISISC, 2010. The Protection of the Environment through Criminal Law (A/CONF.213/NGO/10). In: Statement submitted by the International Institute of Higher Studies in Criminal Sciences (ISISC) and the International Association of Penal Law, a non-governmental organization in special consultative status with the Economic and Social Council, 12th United Nations Congress on Crime Prevention and Criminal Justice, 12-19 April 2010, Salvador, Brazil.

organized nature of such illegal activities, would help to raise the criminal profile of transnational environmental crimes over their purely environmental dimension.

The EIA stresses the need to encourage the application of existing national criminal laws, proceeds of crime and seizure of assets legislation against environmental criminals in addition to "environmental specific" legislation (EIA).[113] Administrative reform, particularly through the introduction of technology to remove direct human contact involved in areas such as trade in natural resources, would be another way to combat corruption.

United Nations Office on Drugs and Crime, the Governments of Italy and Colombia and the International Criminal Police Organization (INTERPOL) decided in 2010 to jointly develop a Digest of Organized Crime Cases to provide States with a compilation of cases on organized crime accompanied by expert commentary and related good practices (UNODC).[114] In one Brazilian case concerning illicit logging in the Amazon Rainforest, the literature stated that the role of the corrupt officials and the professionals who conspired in the issuance of the authorizations was not confined to mere facilitators in the fraudulent activities. The literature also noted that environmental crimes are a significant new form of organized criminal activity alongside traditional activities such as drug trafficking.

More than 250 international and regional environmental agreements have been developed in the thirty years since the first landmark United Nations Conference on the Human Environment in Stockholm in 1972. As these treaties have moved beyond simple pledges of

[113] Agnew, D.J., Walmsley, S.F., Leotte, F., Barnes, C., White, C., Good, S., 2010. West Africa Regional Fisheries Project, Estimation of the cost of illegal fishing in West Africa: Final Report. Marine Resources Assessment Group Ltd.

[114] Europol, 2011. EU Organised Crime Threat Assessment. Europol Police Office. Europol, The Hague.

mutual scientific cooperation to incorporate substantive control measures such as trade restrictions, so attempts at evasion have increased.[115] The literature notes that very existence of national and international controls may serve to encourage unscrupulous individuals and companies to commit .environmental crimes. and deliberately evade environmental laws and regulations in the pursuit of personal financial benefit.

Five broad areas of offences have been recognized by bodies such as the G8, Interpol, EU, UN Environment Program and the UN Interregional Crime and Justice Research Institute. These are: Illegal trade in wildlife in contravention to the 1973 Washington Convention on International Trade in Endangered Species of Fauna and Flora (CITES)[116]; Illegal trade in ozone-depleting substances (ODS) in contravention to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer; Dumping and illegal transport of various kinds of hazardous waste in contravention to the 1989. Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Other Wastes and their Disposal; Illegal, unregulated and unreported (IUU) fishing in contravention to controls imposed by various regional fisheries management organizations (RFMOs); Illegal logging and trade in timber when timber is harvested, transported, bought or sold in violation of national laws.[117] CITIES is still struggling with the true definitions and understanding of environmental crimes.

Other environmental offences may share similar characteristics with these five accepted categories. These include: Biopiracy and transport of controlled biological or genetically

[115] K. Kummer. (1994), *Transboundary Movements of Hazardous Wastes at the Interface between Environment and Trade*, UNEP Environment and Trade Series No. 7 (Geneva: UNEP), p. 8.

[116] Currently there are no binding international controls on the international timber trade, with the exception of endangered tree species covered by CITES.

[117] Ibid.

modified material (a possible offence under the 2000 Cartagena Protocol on Biosafety to the Biodiversity Convention); Illegal dumping of oil and other wastes in oceans (such as, offences under the 1973 International Convention on the Prevention of Pollution from Ships (MARPOL) and the 1972 London Convention on Dumping). [118] Environmental crime is also encouraged by violations of potential trade restrictions under the 1998 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

Part of what enables environmental crime is fuel, fuel - smuggling to avoid taxes or future controls on carbon emissions. Oil and waste dumping at sea and some fuel smuggling are already legal offences, whereas the others will only become so when the relevant multilateral environmental agreement (MEA) and its implementing legislation enter into force.

In contrast to traditional predatory crime, which involves the involuntary redistribution of existing wealth through theft and robbery, etc., environmental crime involves the production and/or distribution of goods and services that are illegal by their classification.[119] The study shows that although individuals may all benefit from a given environmental crime, the associated environmental damage implies that society overall is harmed: however, as society as a whole is often unaware of its victimization, so regulators may not set levels of enforcement effort and restitution properly. There may even be the tacit assumption among regulatory institutions that because such problems are not directly quantifiable, they are not significant.

[118] K. Kummer. (1994), *Transboundary Movements of Hazardous Wastes at the Interface between Environment and Trade*, UNEP Environment and Trade Series No. 7 (Geneva: UNEP), p. 8.

[119] M. McIntosh. (1975), *The Organization of Crime* (Basingstoke: Macmillan Press), p. 10.

Most environmental crime seems to be committed by loosely organized networks of individuals with some specialist knowledge of the area in which they work who have often been overtaken by regulations. Activities are organized .in the sense in which informal unity and reciprocity may be found. rather than .in the journalistic sense, for no dictator or central office directs work of members of the profession. In fact, this lack of a Mr Big may be more damaging for the environment: a single Mafia-type organization might exercise more restraint on exploiting endangered animals than small competing enterprises locked in a cut-throat .tragedy of the commons. [120] The complicated networks of interaction exist, that link raw materials and producers to customers through a web of supplier relationships with the involvement of ancillary specialist services and other key actor(s) such as legitimate business, government officials and consumers.

It is possible to distinguish different criminal constituencies among different areas of environmental crime and even within a specific area of environmental crime. Within the wildlife trade, for example, there are clear differences between (i) low-volume, low-value .tourist cases; (ii) high-volume, low value opportunist smuggling; (iii) high-volume, high-value smuggling by organized criminal networks, and (iv) low-volume, high-value smuggle to order operations for collectors and fanciers to focusing on the primate trade, for example, tourists tend to buy protected species randomly; smuggling to order tends to involve high-value animals such as orang-utans or chimpanzees that make good tourist attractions; and professional smugglers tend to concentrate on supplying rhesus monkeys to the lucrative laboratory market by laundering

[120] ISOFISH, *The Involvement of Mauritius in the Trade in Patagonian Toothfish from Illegal and Unregulated Longline Fishing in the Southern Ocean and What Might be Done About It* (Hobart: International Southern Oceans Longline Fisheries Information Clearinghouse Occasional Report No.1, 3rd edition, August 1998).

wild-caught animals through captive breeding facilities.[121] Similarly, IUU fishing vessels pursuing the Patagonian tooth fish a deepwater fish in the Southern Ocean that is prized for its high-quality flesh are differentiated by methodologies, perceptions of risk, operational incentives and geographic distribution between the expensive reflagged deep-water long liners of the largely Scandinavian-owned Vikings and the shallow-water, expendable, floating rust-buckets of the so-called Spanish Armada.[122] Environmental crime has been a challenge in the World and in many countries for a very long time.

Where profits are high and risks low, as in many areas of environmental crime, it is clear that a specialist in avoiding controls (i.e. professional environmental criminals) will gradually develop. India's most notorious poacher, Sansar Chand, for example, has so far evaded prosecution for involvement in over forty cases dating back to 1974. Such specialists know how to take advantage of paper controls and how to influence regulatory decisions to create loopholes that they can exploit.[123]

Law enforcement agencies that tackle conventional organized criminal gangs have become interested in environmental crime as a possible source of venture capital for more traditional exploits such as narcotics trafficking. Clear examples have yet to be uncovered, the other side of the problem has been identified. Drug money may provide capital for illegal

[121] ISOFISH. 1998, *The Involvement of Mauritius in the Trade in Patagonian Toothfish from Illegal and Unregulated Longline Fishing in the Southern Ocean and What Might be Done About It* (Hobart: International Southern Oceans Longline Fisheries Information Clearinghouse Occasional Report No.1, 3rd edition, August 1998).

[122] Ibid

[123] Such as the CITES decision to set the minimum size of controlled ivory shipment to over 1 kilogram of ivory, which allowed traders to move hundreds of tonnes of illegal ivory in cross sections of tusks smaller than this to manufacture .hanko signature seals.

logging and illegal fishing operations in Central America.[124] The perpetrators of environmental crime have demonstrated that backloading may also occur, where smugglers carry drugs to one destination and bring back wildlife, although in many cases wildlife and drugs are passing from South to North. In other cases, wildlife and drug-trafficking may be combined although it is rare to use endangered wildlife, which has its own intrinsic value, as .mules for heroin or cocaine.

3.2 The Drivers behind Environmental Crime

Global warming, acid rain, air and water pollution are all part of modern societies with developed or developing economic and industrial systems. Not only are natural habitats disappearing, causing the extinction of rare plant and animal species, but there is also a rise in the number of abortions, births of handicapped babies, skin damage, allergies, headaches and an increased number of cancer-based illnesses; confirmed results of environmental pollution, which is mostly caused by environmental crime.[125] Criminological discussions about environmental crime refer to several interrelated questions, such as, how this crime is realized, how it is measured, explained, prevented, regulated, punished, among others.

The main characteristics of environmental crime, from the point of view of criminology, are: the collectivity and anonymity of the victim, the insignificant visibility of the perpetrator of such acts, an abstract comprehension of the damage caused to the environment, a widespread imperceptibility of ecological crimes and recognized complications involved with generating evidence with which to prosecute these crimes.[126] The controls that restrict the supply or demand

[124] V. Holmes, *On the Scent: Conserving the Musk Deer. The Uses of Musk and Europe.s Role in its Trade* (Cambridge: TRAFFIC International, 1999).

[125] J.A. Mills and P. Jackson (1994), *Killed for a Cure: A Review of the World-wide Trade in Tiger Bone* (Cambridge: TRAFFIC International).

[126] Ibid.

of an existing environmental service will result in a missing market for that service. Unscrupulous individuals may seek to fill the gaps between the original market and the resultant one for personal profit by cutting corners, evading charges or bypassing access restrictions.

Superimposed on this missing market that drives environmental crime may be specific regulatory or institutional failures that serve to undermine resulting control systems. Regulatory failures involve inadequate regulations that fail to implement an environmental treaty properly, contain loopholes or fail to deter (or even punish) evasion of the rules. Even when the rules themselves are adequate, institutional failures such as inadequate resources, untrained staff or cumbersome administration may prevent the effective operation of environmental controls.[127]

The form of environmental crime shows itself to be constantly evolving. A historical review of the development of different sciences which have addressed the phenomenon of environmental crime shows that they have consistently converged in their explanation of this phenomenon. It is necessary to reform and add to individual theories in the light of knowledge generated by other theories.[128] The literature shows that environmental crime is escalating in the World today.

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[127] For example, trade in Shahtoosh shawls from the throat wool of the endangered Tibetan antelope (*Pantholops hodgsonii*) has become popular in the fashion industry under the misapprehension perpetuated by leading fashion magazines . that the wool is painstakingly collected from bushes where the animals have rubbed themselves. In reality, the hair is so fine that it must be scraped off the hide of dead animals.

[128] J.A. Mills and P. Jackson (1994), *Killed for a Cure: A Review of the World-wide Trade in Tiger Bone* (Cambridge: TRAFFIC International).

3.2.1 Curtailed Supply and Unmet Demand

Supply and demand restrictions for environmental services may come about for a number of reasons. Supply may be constrained to conserve a scarce environmental good such as an endangered animal population or because of increased costs of complying with altered environmental regulations. Similarly, demand may be adjusted through policies such as taxation to compensate for an associated cost or externality related to the production or consumption of particular commodities. [129] When supply is restricted and demand remains, there is an incentive to violate the controls on the access of the controlled commodity. Hence, endangered animals are poached and hazardous waste is dumped into rivers. If demand is artificially curtailed, there is an incentive to avoid associated costs and taxes through turning to unregulated sources of supply. Hence, illegal forestry operations pay bribes to avoid taxes or .transfer price their products to avoid royalties. The result may be a very different level of environmental damage and resource utilization from that envisaged under perfect implementation of environmental controls.[130]

The poaching and smuggling of commodities such as ivory, rhino horn, tiger bones, sturgeon eggs, bear galls, wild-caught parrots and rare orchids directly threaten some or all of the populations of the species that provide them in the wild. Unfettered trade in derivatives from hundreds of other less charismatic species also serves to further deplete wild populations subject to many other pressures including the pervasive threat of habitat loss.[131]

The wildlife trade flows predominantly from less developed to more developed countries (i.e. South to North). Major sources of demand are the exotic pet and flower trade, exotic curios,

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[129] Ibid.

[130] P. Andreas, (2000).Contraband capitalism: transnational crime in an era of economic liberalization., paper presented at conference on *International Organized Crime in the Global Century*, , p. 4.

[131] Ibid.

frivolous fashion demands (often underpinned by ignorance of the real nature of the commodity being traded9), the pet trade and collectors, ingredients for traditional medicines, and cultural materials (such as ivory for personal *hanko* seals in Japan and rhino horns for dagger handles in Yemen).[132]

Traditional East Asian Medicine (TEAM) has attracted considerable attention as a major consumer of endangered species products, with a potential market representing over a fifth of the global population. Although animal ingredients amount to less than 10% of the TEAM pharmacopoeia and endangered animals constitute less than 3%, population growth and recent increases in disposable income in East Asia mean that demand is steadily rising and far outstrips supply. For example, the recommended daily dose of tiger bone a popular treatment for rheumatism is 3.6g; since an average adult tiger has a skeleton weighing only about 20kg, one animal represents an annual supply for 9.18 sufferers.[133]

3.2.2 Institutional and Regulatory Failures

Attempts to implement and enforce the controls in MEAs will only be successful if every state in a management regime effectively implements and enforces agreed controls and if states attempting to free-ride on a treaty are prevented from benefiting from their non-compliance.[134]

Gaps in the implementation and enforcement are a near universal theme of international policy discussion. It is mentioned, for example, in Agenda 21 (Chapter 8), the UNDP and the

[132] Ibid.

[133] Basel Secretariat, (1999) .Hazardous Waste by Numbers, press kit for the 10th Anniversary Meeting of the Basel Convention, Fifth Meeting of the Conference of the Parties, 6.

[134] Basel Secretariat, (1999) .Hazardous Waste by Numbers. press kit for the 10th Anniversary Meeting of the Basel Convention, Fifth Meeting of the Conference of the Parties, 6.

Global Environment Facility's Capacity Development Initiative, the European Commission's 6th community environmental action program; ministerial communiqués from the meeting of environment ministers of the Americas in Montreal in March 2001, UNEPs February 2001 Montevideo III Program, UNEPs February 2001 Guidelines for Compliance and Enforcement in MEAs, and the G8 Ministers. Statement on Environmental Enforcement, International Cooperation and Public Access to Information in 1997 in Miami, USA.[135] Countries often sign up to controls but fail to pass adequate laws or assign sufficient funds for their effective implementation. Responsibilities for implementation of controls may be allocated to an agency that is already overloaded with work.

Penalties themselves are often inadequate and may be treated more as operating costs for unscrupulous entrepreneurs than as a serious deterrent to market entry. Even when deterrent penalties are allowed for in national legislation, they may not be applied by the judiciary, who are generally unaware of environmental crime and its consequences.[136] A lack of awareness and cooperation among enforcers lead to loss of cases on technicalities.

Hard data on compliance and intelligence about trafficking routes and offences are lacking and, in many cases, are not being actively sought. In addition, as environmental crimes rarely have obvious victims, there is often nobody to complain to the authorities about illegal activities. Environmental crime is nearly always prosecuted by the state: if effective information and feedback on enforcement efforts are lacking, the authorities tend to assume that laws are

[135] Basel Secretariat, (1999) .Hazardous Waste by Numbers., press kit for the 10th Anniversary Meeting of the Basel Convention, Fifth Meeting of the Conference of the Parties, 6.

[136] Ibid.

being obeyed when, in fact, they are being openly flouted. [137] Further, the clear link between investigative effort and the magnitude of problem discovered means that there are few incentives for institutions to look for trouble. The ODS trafficking is a case in point: smuggling was initially uncovered by accident when a customs agent had her car serviced and expressed surprise at the cost. The mechanic explained about the controls being imposed on CFC-12; shortly thereafter, the agent came across a shipment of CFC-12 without any accompanying documentation. Related chains of enquiry eventually led to major smuggling syndicates committing crimes worth hundreds of millions of dollars. Furthermore, costs of enforcement tend to be sunk and are rarely recovered on successful prosecution of offenders.

A 1996 study of the implementation of the Basel Convention showed that almost a third of its parties were without implementing legislation for the Convention, although most reported it was in the pipeline. Although two-thirds of respondents considered illegal traffic in waste to be a criminal offence, legislation to prevent, punish and mitigate illegal trade was missing in over half of the respondents.[138] When talking about green criminology, it is necessary to point out the difference between two meanings of criminology. The problem of 'changing' the meaning of the terms green criminology and environmental criminology is ever present.

[137] Amigos da Terra. (1996), *Forest Management at Loggerheads. 1996 Update Report on Illegal Logging in the Brazilian Amazon* (São Paulo).

[138] Basel Secretariat, (1999) .Hazardous Waste by Numbers., press kit for the 10th Anniversary Meeting of the Basel Convention, Fifth Meeting of the Conference of the Parties, 6.

3.3 Approaches to Tackling Environmental Crime

When it came to tackling environmental crime – the First International Environmental Compliance and Enforcement Conference took place in Nairobi, Kenya on 6 November 2013. The event convened by the International Criminal Police Organization (INTERPOL) and the UN Environment Program (UNEP), the meeting was attended by over 300 participants including national enforcement officials, government representatives and others from non-governmental organizations, international organizations and civil society.

Over the course of the day, participants discussed: recent trends in violations of international environmental law and the impacts of such violations on sustainable development and the implementation of internationally-agreed environmental goals; possible solutions to battle environmental crime; and the impact of new and existing tools in combating these violations. They also discussed the outcomes of in addition and future action points for, the Conference.

In these international environmental criminal activities pose a threat to sustainable development and the effective implementation of, compliance with and plus enforcement of environmental law, including multilateral environmental agreements (MEAs), whose enforcement and implementation they undermine. In addition to their serious environmental consequences, international environmental crimes may involve corruption, loss of tax revenue, parallel trading with other forms of criminal activity, and distortion of legal markets.

There is a unanimous agreement that both national and international enforcement efforts are currently inadequate as compared with the magnitude of environmental and economic losses imposed by transnational environmental crime. Imaginative national and international

enforcement programs are necessary, and adequate resources need to be made available to enable them to succeed. Actionable intelligence needs to be collected and disseminated and enforcement targeted at weak points in global commodity chains. Such targeting may involve the use of innovative long-arm enforcement methods to assist compliance. Non-compliance by parties and loopholes that facilitate laundering of contraband must also be eliminated.

United Nations Environmental Program [UNEP] (2002), guidelines on Compliance with and Enforcement of MEAs also raise many of the suggestions below and propose a series of options to strengthen MEA implementation and enforcement. UNEP is now seeking extra-budgetary resources to run a program to foster their implementation and use; so far, only the Belgian government has responded.[139]

An emphasis purely on enforcement of existing regulations may ignore (or tacitly condone) the context of the wider system that may generate such opportunities to offend. Thus, in addition to simply improving front-line enforcement, a joined-up approach to tackling international environmental crime must address the supply and demand pressures that shape an illegal market. These are factors that enforcement agents can rarely address themselves, yet they routinely have to deal with the results; therefore, enforcement agents and government officials engage in dialogue to share their experiences to maximize the efficiency of global environmental controls.[140] Githu Muigai, Attorney General, Kenya, said that the illegal trade in environmental commodities poses a threat to environmental and human health, contributes to species extinction, leads to revenue loss and undermines environmental agreements, while providing important

[139] White & Case. 1999, Report to Senior Officials of Royal Government of Cambodia and International Donors, Summary of Recommendations, p. 1.

[140] Ibid.

resources to criminal syndicates who in turn undermine international peace and security. Noting unprecedented growth in wildlife poaching in Africa, driven by increasing international demand for ivory and involving armed groups using sophisticated methods, he said new tools are needed to deal with the problem.

3.3.1 Improving National Enforcement

A number of measures could help improve the effectiveness of domestic enforcement programs. These include: a clear national control regime; effective national capacity building; targeting flagrant violators; increasing sanctions and introducing probation penalties; improving case processing times; encouraging compliance through positive incentives; and involving supply and processing chains in the enforcement process.[141] Many countries have face a challenge when it comes to enforcement of environmental law and environmental crime management. The lack of specialist knowledge and training may be most efficiently addressed by training programs using a cascade approach of training-the-trainer, followed by refresher courses, and a combination of the appointment of specialist prosecutors to cooperate with investigating officers.[142]

Criminal profiling is vital for focused enforcement efforts. Risk analysis involves compiling records on importers and exporters and integrating this with actionable intelligence and enforcement actions to allow for the profiling of contraband, trafficking methods and likely countries of origin. This process is reiterative: seizure and confiscation statistics from subsequent enforcement interventions should then be analysed and the results fed back into the system to

[141] Carrabine, E., Lee, M., Plummer, K., South, N., Iganski, P. (2004). *Criminology: a Sociological Introduction.* United Kingdom: Routledge.

[142] Eman, K. (2008). Uvod v fenomenološko analizo ekološke kriminalitete. *Varstvoslovje, 10* (1), 220-239.

adjust profiles.[143] Special enforcement units have had a positive record in gathering intelligence, performing market surveillance, pursuing allegations of corruption and prosecuting complex corporate investigations. South Africa's Endangered Species Enforcement Unit is a good example.[144] Front-line agents and specialist enforcement personnel should be put into early contact with each other and with their opposite numbers in other countries: regularly updated national and international directories of enforcement expertise may facilitate contact.

The Unit was founded by experienced officers from the rangeland crime division who were familiar with the need to penetrate networks, go undercover, gather intelligence and conduct sting operations. Specialist units are likely to be most effective when run on a .stovepipe arrangement, in which they are connected into the legal and administrative structure at a level sufficient to bypass regional and local .regulatory capture.[145] The literature shows the model of bypassing existing bureaucracy can be taken further to create super-ministries in Kenya such as the Kenyan Wildlife Service, whose broad remit and responsibilities, including almost all aspects of national park management, cooperative wildlife management elsewhere, research, tourism and infrastructure, allows for joined-up policies on wildlife protection. The result is a 24-hour operations room, a host of specialist units, a paid informer pool and a network of honorary wardens to gather intelligence and a highly motivated, well-paid staff.

[143] Ibid.

[144] Ibid.

[145] Ibid.

3.3.2 Improving International Coordination

National intelligence on environmental crimes needs to be collated and disseminated more efficiently to allow for coordinated enforcement actions between jurisdictions. Actionable information is often withheld in order to avoid embarrassing the countries involved or because of the perceived confidentiality of national enforcement processes. Information may be sanitized or sidelined into ritual exchanges at meetings rather than presented in an actionable way.[146] In addition to the obvious requirement that states should comply fully with an MEA control regime, it is also crucial for the regime itself to provide information that is useful for enforcement personnel. The Montreal Protocol, for example, only instituted a formal international licensing system in its 1997 Montreal Amendment a decade after controls began.

Formal Memoranda of Understanding (MOU) may help to facilitate and regularize enforcement contacts. The WCO signed MOUs with the CITES Secretariat in 1996 and the Basel Convention Secretariat in 1999. Interpol signed MOUs with the CITES Secretariat in October 1998 and with the Basel Convention Secretariat in 1999. Interpol has had a working party on environmental crime with sub-groups on wildlife crime and hazardous wastes (the latter also covers other forms of pollution, including ODS) for several years, although it has subsequently deprioritized environmental crime as issues such as the .war on terror have come to the fore.[147]

There are also a number of relatively simple mechanisms, like Interpol's .Eco-message. form for reporting or soliciting information on environmental violations involving trans boundary collaboration. One proponent of forms mentioned that they often show that apparent first offences are part of larger series of environmental abuses. Apart from being useful for direct

[146] Ibid.

[147] Lynch, M. (1990). The Greening of Criminology: a Perspective for the 1990's. *The Critical Criminologist*, 2, 11-12.

enforcement, the *ecomessage* forms over time will provide information on global trafficking patterns for more detailed risk assessment and enforcement targeting.[148]

International enforcement efforts should be targeted at weak points in the commodity chain this is especially important for exhaustible commodities such as endangered species, timber and fish, where stock protection is paramount: sanctioning people further down the chain will not avoid environmental damage. [149] Therefore, development assistance may be necessary to help those states that bear the burden of management for the common good. Similarly, capacity-building efforts should be internationally mobile and target resources where they are most needed.

3.3.3 The Use of New Technology

Information integration and synthesis are lacking. As one workshop participant put it, we don't know what we know. Trade record analysis and the integration of data from different national and international authorities with drill down software that checks for irregularities and discrepancies should be central to any form of intelligence-led policing. Simple and cost-effective systems versions of such software now need to be developed explicitly for developing countries. [150] In the fight against environmental the use of technology like internet access is often necessary for quick and regularized exchange of enforcement information, but many government departments are not Internet-enabled or else restrict access to high-level officials who may fail to transmit information down the line.

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[148] Ibid.

[149] Ibid.

[150] Lynch, M. L., Stretesky, P. (2007). Green Criminology in the United States. In: P. Beirne, N. South, (Eds.), *Issues in Green Criminology: Confronting Harms Against Environments, Humanity and other Animals* (pp. 248-269). Cullompton and Portland: Willan Publishing.

There are many new technologies that can make a big difference to the burden of national and international enforcement. Compliance and inspection methodologies such as Vessel Monitoring Systems and fine-scale satellite monitoring of forestry concessions have the potential to move the marginal benefit curve of monitoring downwards by lowering costs and offering economies of effort on monitoring.[151]

Forensic science could also play a vital role in gathering evidence and identifying illegal materials; for this to be the case, it is important to treat environmental crime scenes much as other crime scenes and allow for detailed investigation. DNA fingerprinting and more traditional skills such as anatomic and morphological biology have proved vital in distinguishing contraband such as shahtoosh and toothfish fillets from look-alike products. DNA test kits can also be made available to enforcement operatives to enable simple point-of-contact tests.[152] The KWS are in the process of putting up a forensic lab for DNA evaluation of various samples.

3.3.5 Compliance Assurance

As non-compliance and inadequate implementation of MEA provisions are, perhaps, the biggest facilitators of environmental crime, thus, measures need to be written into environmental treaties to encourage compliance.[153]

First, there is a significant need to increase the transparency of national reporting in many MEAs to allow assessment of how effectively treaty measures are being incorporated. This, of

[151] Lynch, M. J., McGurrin, D., Fenwick, M. (2004). Disappearing Act: the Representation of Corporate Crime Research in Criminological Literature. *British Journal of Criminology, 44* (2), 319–341.

[152] Ibid.

[153] Newburn, T. (2007). *Criminology*. Cullompton: Willan Publishing.

course, is a sensitive area, as states tend to be innately opposed to passing over any of their sovereignty to an external or international body. To address this INECE.s Environmental Compliance and Enforcement Indicators project has begun to develop diagnostic tools to assess the quality of implementation and enforcement practice in partner countries to this.[154] There needs to be a way to reward compliance and deter non-compliance. In many cases, the reward will be an improved environment. [155] However, if states bear very different costs and see quite different benefits from any proposed measure (as in almost all real cases), the political will for implementation and compliance will vary widely. States with high costs and low benefits may well downgrade their implementation efforts, and this may result in significant costs elsewhere, for example, by allowing laundering of contraband.

Thus, it is necessary that compliance procedures allow for the independent assessment of problems and for their amelioration. Such measures should provide an opportunity for amicable settlement and assistance with capacity-building. In particular, states getting the benefits of control measures should be compensating those bearing the costs. Environmental issues are also underpinned by major equity issues between North and South. The North's greater financial resources, technical capacity and contribution to past and/or present pollution may oblige it to play a leadership role, and bear the lion's share of the costs, in tackling global environmental change . the concept of .common but differentiated responsibility. The Multilateral Fund of the Montreal Protocol is perhaps the best example of success here contributions from Article 2 Parties amounted to about US$1.3 billion at the end of 2001.[156]

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[154] Pearce, F., Tombs, S. (1998). *Toxic Capitalism: Corporate Crime and the Chemical Industry***.** Aldershot: Ashgate.

[155] Ibid.

[156] Newburn, T. (2007). *Criminology*. Cullompton: Willan Publishing.

3.3.6 Addressing Supply and Demand for Contraband

Enforcement may remove people from an illegal marketplace and deter entry but it does nothing to address the supply and demand pressures that create the illegal market-place to start with. For example, by the time a smuggler has been caught with a tiger skin, it is already too late for that particular animal. [157] The literature demonstrates that even when deterrent legislation involves the death penalty (as it does for poaching pandas in China), illegal activities may continue, driven by very different perceptions of risk and different time horizons between regulators and regulated.

Addressing illegal demand - ODS crime is the one area in which demand will eventually disappear of its own accord. In all other areas, public education is needed, as are programmes to substitute demand for legal alternatives and/or through direct interventions in the marketplace such as subsidies or buy-outs. [158] There is, of course, a danger in eliminating demand for products such as endangered species or tropical timber because the opportunity costs of preserving those resources may be relatively high. Hence, it may be important to channel demand into legal (and sustainable) production to provide an incentive for conservation.

Supply-side policies therefore need to increase sustainable supplies for such markets. For endangered species, farming, ranching and captive breeding programs allied to sustainable use policies of making market access conditional on good husbandry have helped ease pressure on wild populations.[159]

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[157] Newburn, T. (2007). *Criminology*. Cullompton: Willan Publishing.

[158]Ibid.

[159] Ibid

Unlike many other instances of international environmental crime, the problem of illegal trade in ODS will, in due course, solve itself, as all ODS-using equipment is eventually replaced by new machinery using non-ozone-damaging replacement chemicals . though, at current rates, not before significant further damage to the ozone layer is caused. [160] The study shows that the replacement process can be accelerated, however, by applying use controls in particular sectors, and instituting ODS sales bans, stockpile bans, and/or import bans (for recycled and/or virgin material because there was no independent verification of the real origin of the material) in industrialized countries. This implies additional costs to industry as equipment is retired before the end of its working life, but is probably the easiest option to implement and enforce.

There is no demand for hazardous wastes to be reduced unless a waste stream contains valuable secondary elements that it may be profitable to recycle. There may be an incentive to export wastes from countries with high costs of disposal to those with lower costs, due to population density, land and labour prices, air quality etc. Only far-reaching measures, such as the Basel .Ban Amendment which will prohibit all export of hazardous wastes destined for final disposal from Annex VII countries (OECD, EC and Liechtenstein) to non-Annex VII countries . will change this state of affairs. [161] The Amendment, when ratified, may therefore increase the incentive for illegal trade, though at the same time, by reducing overall volumes, it should make concealment more difficult and detection easier.

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[160] Poveda, T. (1994). *Rethinking White-collar Crime*. London: Praeger.

[161] Ibid.

3.3.7 Addressing Illegal Supply

The supply of contraband can be adjusted by market intervention, such as subsidizing alternatives, and altering the management structures or property rights that govern resource access. Supply businesses need to be given incentives to comply with international controls: monopoly and cartel arrangements may play an important role in ensuring that those already in the market-place have a vested interest in keeping competitors out. Supplies of look-alike commodities also need to be addressed to prevent laundering: trade controls may be central components in such strategies.[162]

In a number of cases, it has been possible to launch a direct buy-out of production capacity to eliminate potential sources of illegal supply. For ODS trafficking, this solution has been highly desirable, as it has served to reduce legitimate pollution by developing countries as well. In March 1999, the Protocol's Multilateral Fund agreed a US$150 million program to help finance Chinas CFC production phase-out over the next ten years; a US$60 million program to reduce halon production began in 1998. In November 1999, the Fund Executive Committee adopted a similar package, worth US$82 million, for the Indian CFC sector. A special World Bank initiative raised money to phase out Russian production by the end of 2000.[163] Surplus capacity in the forest and fisheries sector can be addressed by similar means. Much illegal logging stems from over-allocation of logging concessions and processing licences, frequently associated with corruption. In the Indonesian forestry sector, for example, processing capacity is

[162] Beirne, P., Hill, J. (Eds.) (1991). *Comparative Criminology: an Annotated Bibliography*. New York: Greenwood Press.

[163] Ibid.

almost double the size of legal supply. Conditionality on forest-sector reform for aid disbursement has now begun to move from getting .laws on the books to addressing such issues.

3.3.8 Apply Long-arm enforcement

Extra-territorial and reciprocal enforcement legislation that may allow for the effective sanctioning of environmental criminals outside the boundaries of a single nation-state was discussed at a number of points in the workshop in Norway. Some of the best examples have arisen from efforts by certain states to sanction beneficial owners of reflagged fishing vessels and, to deter their nationals from free-riding on fisheries agreements to which the state is party.[164]

In March 1998, the Norwegian government, for example, imposed the requirement that all Norwegian-registered companies or vessels operating in waters outside the jurisdiction of any state must obtain a one-year registration. Removal from the register, .for contravening conservation or management measures laid-down by regional or sub-regional agreements, also invalidates access to all quotas in domestic or cooperative fisheries.[165]

United States Lacey Act Amendments of 1981 contain a different sort of long-arm measure which makes it unlawful to .import, export, sell, acquire, or purchase fish, wildlife or plants taken, possessed or sold in violation of State or foreign law. in the US. Thus, it provides for extra-territorial action, but instead of making it an offence to violate US national law elsewhere, the Act allows for laws violated elsewhere to be prosecuted in the US. Such

[164] Beirne, P., Hill, J. (Eds.) (1991). *Comparative Criminology: an Annotated Bibliography*. New York: Greenwood Press.

[165] Ibids.

.reciprocal enforcement measures may form the basis of future enforcement cooperation on issues such as forestry and fisheries as well as wildlife.[166]

Some environmental crime issues may also be inseparable from human rights abuses, especially with place-based operations that directly impact on the health and well-being of local populations. This may activate a host of other mechanisms to sanction offences. Similarly, natural resources that are used to fund conflict as with Liberian or Congolese conflict timber . are an issue for international security and may see the UN Security Council make direct interventions to restrict trade and impound assets. That said, such sanctions need effective targeting and implementation mechanisms if they are to be more than symbolic. Plunder of natural resources during conflict may also constitute a war crime under the definitions laid-out in the Nuremberg Trials. This may open other avenues for international sanctions to be imposed on those trafficking in those resources at the expense of their real owners.[167]

Attempts to order global supply chains to prevent laundering of contraband or the loss of environmental bads, or to harness demand for exhaustible commodities to direct resources to conservation all require accurate chain-of-custody tracking systems for accounting and inventory control. Market access should be made conditional on goods possessing adequate detail of their legal status. An example may be the Catch Documentation Scheme launched by CCAMLR to identify legal catches of toothfish; although some jurisdictions have been slow to deny their markets to undocumented toothfish, a price difference between documented and undocumented catches is now clearly evident in the world market.[168]

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[166] Brantingham, P. J., Brantingham, P. L. (1981). *Environmental Criminology*. Beverly Hills and London: Sage.

[167] Clifford, M. (1998). *Environmental Crime - Defining Environmental Crime*. United States.

[168] Ibid.

3.4 Institutions Involved in Environmental Crime Management

It is widely recognized that environmental crime management is an increasing challenge in both developed and developing countries. The impact of the illegal activities broadly covered by the terms "environmental crime" is manifold, and goes well beyond its adverse effect on the environment and biodiversity.

Crimes against the environment have serious social, developmental and economic consequences, particularly in least developed countries, and are a threat to basic human rights. Fighting against environmental crime is, therefore, a direct contribution to one of the eight Millennium Development Goals of ensuring Environmental Sustainability. By protecting the habitat and the resources of rural populations, organisations involved in this fight in this effort also contributes to the eradication of extreme hunger and the alleviation of poverty.

3.4.1 Institutions Involved Environmental Crime Management in Kenya

3.4.1.1 Kenya Wildlife Services

The KWS is a state corporation with the mandate of conserving and managing wildlife, and enforcing the relevant laws and regulations. The key legislation that governs the operations of KWS is the Wildlife Conservation and Management) Act as amended in 1989.

A draft Bill and Policy have been fashioned which recognizes that over 60% of Kenya's wildlife exists outside its protected areas on community and private land. Issues in regard to user rights, incentives, benefit sharing mechanisms, compensation, poaching deterrents and reducing the ever growing problems of human wildlife conflict have been duly considered, in a way that the existing legislation fails to do. In this regard, we advocate for the quick approval and enactment of the draft 2012 Wildlife Policy and the draft 2012 Wildlife Bill.

Its responsibilities include custody of Kenya's 56 protected areas (26 national parks and 30 national reserves) used to conserve ecosystems and areas of distinct biodiversity. KWS is also responsible for the protection of wildlife outside the protected areas, which constitutes more than 70% of Kenya's wildlife. It provides legal protection of wild animals, including a ban on hunting and prohibition of trade in wildlife and wildlife products.[169]

Wildlife-related crimes in Kenya have been evolving over time and continue to present growing challenges to wildlife conservation. In the past, Kenya experienced high levels of elephant and rhino poaching that almost drove their populations to extinction. Poaching was mainly conducted by armed bandits from Somalia and was prevalent in pastoral areas outside wildlife protected areas. This forced some animal species to abandon their rangeland and territories and seek refuge in parks. The period before the establishment of Kenya Wildlife Service (KWS) in 1989 was characterized by massive poaching, general insecurity in the parks, inefficiency, low staff morale, and inadequate equipping of the agency charged with the responsibility of conserving and managing Kenya's wildlife.[170]

Some of the factors that contribute to wildlife crime in Kenya include the proliferation of small arms and light weapons from neighboring countries such as Somalia. The porous Kenya–Somalia border in particular has provided opportunity for armed Somali s to cross into Kenya on poaching missions. Well-organized and highly skilled gangs with superior firepower cross over into Kenya to take refuge in largely remote wildlife protected areas, which serve as safe havens.

[169] African Biodiversity Network. (2013). Press statements.

[170] KWS (2012).

Often, Somalia militias flushed out from their territories of influence and control take refuge in these protected areas as they reorganize; they also become involved in wildlife poaching.[171]

When it comes to effective environmental management KWS has put in place specific security measures to address wildlife crime. KWS law enforcement units works with stakeholders such as ranchers, local communities. and other law enforcement agencies in drawing up and implementing area-specific security strategies to counter poaching threats and other wildlife crimes. These measures include holding regular security meetings with private conservancies and ranchers in the vulnerable areas, joint law enforcement efforts, and wildlife security review and operations covering the entire country. Cross-border operations and collaborations between Tanzania and Uganda are also in place to address crimes of a transboundary nature.[172]

In addition, to effectively manage environmental crimes KWS has deliberately reached out to local communities to be partners in wildlife law enforcement. This is after our realizing that working with local communities is critical for effectiveness in law enforcement against wildlife crime and ensuring compliance with wildlife law. Specific measures have therefore been put in place to strengthen collaboration and cooperation with local, regional, and international wildlife law enforcement agencies and other stakeholders in order to win the fight against wildlife crime. These efforts have led to significant improvements in security of wildlife and its habitats, and the guaranteeing of visitor security within protected areas.

On the whole, this is the agency at the forefront of fighting environmental crime in the country. It enforces the relevant laws, including stopping illegal trade and trafficking in live

[171] KWS (2012).

[172] Ibid.

fauna and flora and their products. It also provides security to tourists and protects water catchment areas. KWS has an intelligence system to gather information on poaching and trade in environmental crime. It also has trained rangers and wardens on the ground and works with local communities. In terms of law enforcement, the service has a good record and most crimes occur outside the protected areas. They are, however, thin on the ground and much of their time is taken up with animal-wildlife conflicts.[173]

The greatest approach to effective environmental crime management by KWAS has been through prevention, and to prevent and combat wildlife crime, and in particular poaching and trafficking in wildlife species and their products, KWS has established and strengthened specialized security units that are deployed throughout the country. These include the canine unit, which helps to sniff out wildlife products and track wildlife offenders; the horse unit, to ease movement in mountainous terrains; the prosecution unit for wildlife related offences; the security research and analysis unit, to study emerging trends and recommend appropriate solutions; the wildlife investigation, which responds to wildlife crime; the intelligence unit, which gathers information intended to pre-empt wildlife crime; the emergency management unit to deal with disaster situations; and the security data management unit for information management. As Kenya still remains an important link to international destinations for illicit consignments of wildlife and its products, the strengthening of these units and more collaboration with the Customs Department and other government agencies will be some of the strategies for winning the war against wildlife crime.

The KWS also plays an important role in protecting the country's water catchment areas

[173] KWS (2012).

found within parks and reserves. These areas also constitute habitat for wild animals. Three of Kenya's five water towers - the Aberdare ranges, Mount Kenya, and Mount Elgon—are found within protected areas. It's through KWS's efforts to control illegal logging and destruction of these catchment areas that many of the towns in Kenya, including Nairobi and Mombasa, are guaranteed a water supply. The water catchment areas also support vital sectors of the country's economy, such as tourism, agriculture, and energy. In addition, KWS has taken the lead in a joint government effort to protect the Mau ecosystem from further destruction. This is a significant role as this ecosystem comprises the largest closed-canopy forest in the country, and was, until 2008, probably the most endangered habitat in Kenya. KWS has also been very instrumental in enforcing the 2007 presidential decree to protect East Africa sandalwood from exploitation through illegal trade, and has managed to eradicate the illegal harvesting of the plant within the protected areas.

Kenya Wildlife Service (KWS) has strong links with other institutions, for example, joint management programs with KFS in Mt Kenya. It also has links with the police in their operations. At KWS, there is a senior superintendent of police for liaison purposes, and a chief inspector of police for investigations and follow-up with the Criminal Investigations Department (CID) on various cases.[174]

The East African Network for Environmental Compliance and Enforcement (EANECE) is a network of government entities which have in their mandate environmental management, compliance and enforcement responsibilities in the East African nations of Burundi, Kenya, Rwanda, Tanzania and Uganda. EANECE was established in May, 2010 and currently has a membership of over fifty government agencies in the five East African nations. The EANECE

[174] KWS (2012).

Executive Committee has recently, in May 2012, recommended the entry of Ethiopia and Zanzibar into EANECE. Whereas the network membership is currently restricted to government regulatory agencies, EANECE encourages cooperation and collaboration with other entities including the academia, private sector, NGOs and civil society in order to achieve its mission.

The Mission of EANECE is to promote the rule of law, good environmental governance and sustainable development in East Africa through efficient and effective implementation and enforcement of environmental requirements.[175]

Environmental crime is a serious and growing concern all over the world. Not only does it harm the environment and human health, but it also often has an impact on the economy and on general quality of life. East African Network for Environmental Compliance and Enforcement (EANECE's) Environmental Crimes Program creates a forum for diverse stakeholders like the Kenya Wildlife Services in the regulatory cycle to discuss and understand the nature, extent and trends of environmental crimes; to understand the challenges faced in enforcing environmental crime laws; and, to come up with common strategies for enhanced cooperation in the areas of information/intelligence sharing, environmental crime investigations and prosecutions.[176]

Kenya is losing its wildlife and yet tourism which is recognized as a key economic driver in Vision 2030 is significantly dependant on this wildlife resource. The decline has come about because the dynamics of human coexistence with nature and particularly wildlife have changed as a result of increased population, unfettered encroachment by agriculture and urbanization and the lack of wildlife user rights being recognized on community and private land. There is an urgent need to change this dynamic, as recognized in the 2010 Constitution.

[175] East African Network for Environmental Compliance and Enforcement. 2012. Inspection Manual. Nairobi, Kenya.

[176] Ibid.

3.4.1.2 Kenya Forest Service

Kenya Forest Service (KFS) was established by the Forest Act of 2005 and formulates policies and guidelines for the management, conservation and utilization of all types of forest areas in the country. Its mandate includes managing all state forests and provisional forests in consultation with the forest owners. It also protects forests in the country in accordance with the provisions of the Act, which include promoting capacity building in forest management, assisting in drawing up management plans for all indigenous and plantation forests, and collaborating with other organizations and communities in the management and conservation of forests and for utilization of the biodiversity therein.

The Act empowers KFS to enforce the laws and regulations pertaining to logging, charcoal making and other forest utilization activities, and any forestry and land use laws made pursuant to any other written laws.

3.4.1.3 Kenya Police

Information of all crimes is recorded in what are known as occurrence books, but these books contain little information on environmental crime. Other than in 2000, when pole fishing was listed as a reported crime, no incidents of environmental crime have been reported at the central police station. The police links established with other organizations dealing with the environment are, however, crucial in

the war against environmental crime.[177]

[177] Anthony Aisi. (2013) *Impact of Environmental Crime on Security and Development*. UNEP, INTERPOL.

3.4.1.4 National Environmental Management Authority

The operations of NEMA are governed by the Environmental Management and Coordination Act of 1999 (EMCA) and by sectoral environmental laws, including those relating to agriculture, energy, fisheries, health, industry, local government, natural resources, tourism and water resources. Environmental Management and Coordination Act establishes various environmental offences that relate to inspection, EIA, standards, hazardous wastes, materials, chemicals and radioactive substances, pollution, restoration orders, easements and conservation orders. A general penalty of imprisonment for not more than 18 months or to a fine of not more than KSh 350,000.00 or both is stipulated for most of these offences. EMCA also provides for forfeiture, cancellation and other orders.[178]

Accordingly, NEMA plays a coordinating role but also enforces environmental law. But its capacity to detect crime is low because it is fairly thin on the ground, and most of its regulations are also new. With time, as the public and collaborating institutions internalise these regulations, its capacity to detect hopefully will improve. NEMA also has a hotline to report environmental crimes.

The authority employs about 120 environmental inspectors to assist in enforcement work. Additionally, it has established a new environmental police unit, with ten officers, headed by an inspector of police. Whilst this unit is relatively new, its impact is already felt with about 30 cases prosecuted so far. The police unit investigates, prosecutes off enders and provides security to environmental inspectors. It also liaises with other police stations countrywide to provide similar services to other NEMA inspectors on the ground. Additionally, NEMA has employed about 20 trained prosecutors, who, however, are yet to be gazetted. The prosecutors will help

[178] Ibid.

improve the success rate of environmental crimes as they are trained environmentalists able to argue court cases better than ordinary police prosecutors.

3.4.1.5 Kenya Plant Health Inspectorate Service

Kenya Plant Health Inspectorate Service (KEPHIS) is mandated to provide plant variety protection, seed certification, phyto-sanitary services, analytical chemistry laboratory and farmer advisory services. In terms of environmental crimes, KEPHIS controls importation and exportation of plant material, for which it has employed inspectors and established inspection units at various points of entry in the county. To enable KEPHIS carry out its functions effectively, the law requires that all 'persons entering Kenya must declare plant materials (including gift s) in their possession to a plant inspector.' In addition, the law requires all persons dealing with the exportation of plant materials to apply for a license, stating species, variety, category and quantities, and to obtain a copy of certification from KEPHIS.

Kenya Plant Health Inspectorate Services (KEPHIS) is a regulatory service to protect Kenya's agriculture from pests and diseases that could impact upon the environment, economy and human health. It was formed under Plant Protection Act, (Cap 324) and its mission is to assure quality of agricultural inputs and produce to promote food security and sustainable development.[179]

At approximately 1:20 on the afternoon of March 23, 2005, an explosion occurred during the startup of an isomerization unit at the BP Texas City refinery, killing fifteen people and injuring one hundred and seventy others. In the aftermath of this tragic incident, thousands of

[179] Anthony Aisi. (2013). Impact of Environmental Crime on Security and Development. UNEP, INTERPOL.

civil lawsuits were filed against BP for both personal injuries and property damages. In addition to the civil suits, a federal criminal investigation commenced as a result of the explosion. After an extensive investigation conducted jointly by the U.S. Attorney's Office in Houston and the U.S. Department of Justice's Environmental Crimes Section, BP and the federal government reached a negotiated resolution on October 24, 2007. BP agreed to plead guilty to a felony violation of the Clean Air Act (CAA) and pay a $50 million criminal fine. [180]

For a better understanding of what exactly environmental crime is, what is punishable, how deviations are punished, why it comes to environmental harm and who are the victims of environmental crime, we first need to define the basic terms. The answers on the following questions who committed crime, why one committed it and how the crime against the environment is committed, are expected to be explained by criminology. In the past decade we witnessed numerous discussions of criminologists about how to name a branch of criminology, which deals with researching the criminality against the environment as a social and individual phenomenon, its concept, purpose, meaning etc. Because of the lack of adjusted terminology and united internationally acknowledged definition issues have arisen on all other levels of discussion, research, analyses, punishment and prevention of environmental crime. Ross warns with a reason that recognizing environmental crime is more than obvious and its defining is anything but easy. No individual definition of environmental crime has been dominating or generally accepted and the discussion about the naming (the proper term) of the branch of criminology that covers the field of the environmental crime is still very much alive. The terms environmental criminology and green criminology are often reasons for debate. [181]

[180] Anthony Aisi. (2013). Impact of Environmental Crime on Security and Development. UNEP, INTERPOL.

[181] Ibid

The rapid social, technological, political and environmental development of the world we live in is almost beyond comprehension. These changes have created growing demands for goods and services that cannot be supplied anymore by the ordinary economy and business services, so the criminal economy must jump in. New mobility has increased trade, tourism, expansion of the scientific and cultural cooperation. Borders are turning pale and becoming insignificant. Everything has gone to the undreamed-of rate. But unfortunately, at the same time, all this progress has caused crime of unprecedented proportion. The results of this process-consequences of destruction in the natural environment are beyond understandable, sometimes even imaginable (such as, striving for profit has no limitations). Environmental crime represents one of such (inter)national problem that is growing very fast and wide. These crime problems are highly complex in relation to those with whom criminologists were used to deal with, even in comparative studies.[182] 'Traditional' organised groups which have been involved in illegal activities such as human, drugs, and arms trafficking are now increasingly getting involved in the most lucrative activities of environmental crime. There is also evidence that terrorist groups are involved in transnational environmental crime with the view to generate funds for other criminal activities. Evidence suggests that illegal networks are intrinsically linked to large-scale corruption, particularly to facilitate fraudulent trade, or forge import/export certificates. It is to be expected that the same holds true for environmental crime activities. [183]

Globalization and the worldwide production of millions of tonnes of waste gave rise to the illegal movement and dumping of waste particularly in developing countries, posing serious risks to the environment and human health. The Basel Convention on the "Control of Trans-boundary Movements of

[182] Ibid.

[183] Ibid.

Hazardous Wastes and their Disposal" was adopted in 1989 to regulate the transboundary movements of hazardous wastes. It obligates its 170 Parties to ensure that such waste is managed and disposed of in an environmentally sound manner. However, despite the existence of such a Convention and of a variety of bilateral agreements and national laws, the illegal trade in hazardous waste remains a significant problem throughout the world, posing significant human health, environmental and financial risks to the countries involved. In this context, criminals and organized crime groups have been exploiting the high costs associated with legal waste management and making substantial profits from illegal trafficking and disposal activities. Illicit waste trafficking has been facilitated through cooperation with legitimate businesses in the financial services, import and export, as well as metal recycling sectors. In addition, there is evidence of use of specialists engaged in document forgery to obtain permits and of corruption in the public and private sectors.[184]

There is no doubt that the law (civil or criminal) is unable to tackle the enormous environmental problems which need to be tackled if, according to Rawls each generation is to owe the next a world which is better for our having lived in it. Doubtless the law can and does play a valuable, complementary role in the quest for sustainable development. Each branch of the law - civil and criminal - has its own distinctive part to play in controlling anti-environmental behavior. The common law of tort, for example, has a distinctive role (among others) in distributing essentially private liabilities. Accordingly, and by way of example, any compensation won by a private plaintiff for some unreasonable interference with the use and enjoyment of his private property does not necessarily have to be applied by that successful plaintiff in the remediation of his damaged environment. Equally it is not generally the case that

[184] Anthony Aisi. (2013). Impact of Environmental Crime on Security and Development. UNEP, INTERPOL.

the common law recognises and enforces claims in respect of damage to the unowned, natural environment.[185]

Supply and demand restrictions for environmental services may come about for a number of reasons. Supply may be constrained to conserve a scarce environmental good such as an endangered animal population or because of increased costs of complying with altered environmental regulations.

Similarly, demand may be adjusted through policies such as taxation to compensate for an associated cost or externality related to the production or consumption of particular commodities. If supply is restricted and demand remains, there is an incentive to violate the controls on the access of the controlled commodity. Hence, endangered animals are poached and hazardous waste is dumped into rivers. If demand is artificially curtailed, there is an incentive to avoid associated costs and taxes through turning to unregulated sources of supply. Hence, illegal forestry operations pay bribes to avoid taxes or .transfer price, their products to avoid royalties. The result may be a very different level of environmental damage and resource utilization from that envisaged under perfect, implementation of environmental controls.

3.4.2 International Agencies

3.4.2.1 Interpol

International Police (INTERPOL) states that environmental crime - from the illegal trade in wildlife and timber and the smuggling of ozone depleting substances to the illicit trade in

[185] Anthony Aisi. (2013). Impact of Environmental Crime on Security and Development. UNEP, INTERPOL.

hazardous waste and illegal fishing - is a serious and growing international problem, whose impacts transcend national borders.[186]

Environmental crime affects all sectors of society and is often linked with the exploitation of disadvantaged communities, human rights abuses, violence, conflict, money laundering, corruption and international criminal syndicates. Wildlife crime alone is estimated to be worth USD $15 - 20 billion annually and is recognized as the fourth largest global illegal trade behind illegal drugs, human trafficking and trade armaments. Studies indicate that the illegal trade in wildlife and timber may help finance terrorism and organized crime across the world. The same routes used to smuggle wildlife across countries and continents are often used to smuggle weapons, drugs and people. The UN Environment Program (UNEP) estimates that up to 14,000 tonnes of CFCs, worth approximately USD $60 million were smuggled into developing countries annually up to 2006. At the same time, electrical and electronic waste (e-waste) is the fastest growing waste stream in the world. Up to 50 million tons of e-waste is generated annually with only a 10 per cent recycling rate. [187]

Shipments of waste across the globe are in some cases contravening the UNEP-hosted treaty, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. Illegal, unreported and unregulated fishing accounts to 11 - 26 million tonnes a year, equivalent to 15 percent of world catches.[188] A key meeting of UN and international police organization (Interpol) held in the Kenyan capital Nairobi vows to develop a global

186 Anthony Aisi (2013). *Impact of Environmental Crime on Security and Development*. UNEP, INTERPOL.

187 Ibid.

188 Ibid.

roadmap against international crime. The illicit ivory trade also provides vast sums of money to criminal syndicates that, in the long run, destabilize international and national security. The meeting comes amid growing concern of the resurgence of elephant poaching. Populations of elephants in Africa continue to be under a severe threat as the illegal trade in ivory grows, with the number of slain elephants doubled and the seized ivory pieces tripled over the last decade. An estimated 17,000 African elephants were illegally killed in 2011 at sites monitored by CITES (a UNEP-hosted convention), around 40 percent of the total elephant population in the continent. Large-scale seizures of ivory (consignments of over 800 kg) destined for Asia have more than doubled since 2009 and reached an all-time high in 2011. The prevalence of unregulated domestic ivory markets in many African cities, coupled with the growing number of Asian nationals residing in Africa, also facilitates the illegal trade in ivory out of Africa.

3.4.2.2 United Nations Environmental Program

According to a recent report by UNEP and partners, the systematic monitoring of large-scale seizures of ivory destined for Asia is indicative of the involvement of criminal networks, which are increasingly active and entrenched in the trafficking of ivory between Africa and Asia.[189] CITES shows estimated 17,000 African elephants were illegally killed in 2011 at sites monitored by CITES that are believed to hold around 40 per cent of the total elephant population in Africa.

3.4.2.3 African Biodiversity Network

The African Biodiversity Network (ABN) is a regional network of individuals and organisations seeking African solutions to the ecological and socio-economic challenges that face the

[189] Anthony Aisi. (2013). Impact of Environmental Crime on Security and Development. UNEP, INTERPOL.

continent. The ABN was first conceived in 1996 in response to growing concern in the region over threats to Biodiversity in Africa and the need to develop strong African positions and legal instruments at the national, regional and international level. Currently The ABN has 36 partners drawn from twelve African countries: Benin, Botswana, Ethiopia, Ghana, Kenya, Mozambique, South Africa, Tanzania, Togo, Uganda, Zambia and Zimbabwe. [190]

3.4.2.4 African Network for Animal Welfare

African Network for Animal Welfare (ANAW), focus is on the humane treatment of all animals for human welfare. The organization promotes the understanding and appreciation that animals are sentient beings; they have feelings, emotions and respond to psychological and physiological changes in the environment.

3.5 Challenges to Effective Environmental Crime Management in Kenya

The study established revealed that the problem of the agreed definition of the term "environmental crime" comes from different concepts, because some people use other terms for "environmental crime", such as "environmental criminality" or "criminality of environmental protection" (also "criminality of the environment", "green crimes", "crimes against the environment" and "ecocide"). Such disagreement in determining the basic meaning of the term have impacted upon criminological divisions and our ability to provide appropriate legal definitions, meaning that the criminal justice system is at present not adequately prepared to deal with this problem. A number of different reasons may explain the problems of defining environmental crime and may range from theoretical and abstract differences to political concepts due to the different interests of individual countries. More recently, we might explain

[190] African Biodiversity Network. (2013). Press statements.

this problem through the globalization of human society. Nowadays it is extremely hard to avoid the influence of the international dimensions of life and, consequently, of harming the environment.

Broadly defined, anyone or anything harmed by environmental disruptions may be seen as a victim. However, the extent that environmental harm is criminalized or sanctioned in law may have implications for who the authorities view as victims. By focusing only on violations of criminal or regulatory law, the number and type of victims studied are constrained. The victim, whether this is an individual, the "general public" or the "environment" is limited to the term applied in the specific context of the offence and how the offence is defined within the law. Criminal law generally focuses on individual victims whereas environmental legislation often describes the environmental harm as an offence against the environment.

The increased involvement of organized criminal groups in polluting activities was not envisioned when State's drafted their regulations. From a victim's perspective does it matter if the river is being polluted by organized criminal groups disposing of toxic waste from meth labs or by the legal dumping by a corporation? Some criminologists argue that many of the most serious forms of environmental risk come from "normal social practice" . For example, currently lawful practices such as using old oil tankers arguably create great risk from an ecological perspective. Perhaps with an increasing awareness and scientific knowledge of the environment and the impact of harmful practices, this will influence law reform in this field. However this raises the debate of crime versus social harm. There is a need for criminal justice systems to function with certainty in order to be fair and consistent. The question then is whether environmental harm can fit neatly into the existing criminal justice system.

The Kenya Forest Service's faces challenges various in environmental crime management including, Participatory Forest Management (PFM). The need for clear guidelines with definition of community forest associations' responsibilities and contributions are central to its success. Need to build on experiences from within the region. The management of natural high forests and the challenge of availability of sufficient data and information to allow for the preparation of the requisite management plans in a timely manner. Forest plantations : need to update national inventor ies, particularly on forest areas, growth and yield as basis for determining allowable cut, clear modalities for executing the lease/contractual agreements; and piloting on alternative systems for plantation establishment.

The dry land forests and the need to legalize and regulate the charcoal business as part of the strategy to raise royalties and promote efficiency in charcoal production. Farm and private forestry offering the greatest opportunity for getting Kenya closer to the international standard of 10% of forest cover: and therefore need for more incentives.

Broadly defined, anyone or anything harmed by environmental disruptions may be seen as a victim. However, the extent that environmental harm is criminalized or sanctioned in law may have implications for who the authorities view as victims. By focusing only on violations of criminal or regulatory law, the number and type of victims studied are constrained. The victim, whether this is an individual, the "general public" or the "environment" is limited to the term applied in the specific context of the offence and how the offence is defined within the law. Criminal law generally focuses on individual victims whereas environmental legislation often describes the environmental harm as an offence against the environment.

Classifying what is an environmental crime will involve a complex balancing of communities' interests in jobs and income with ecosystem maintenance, biodiversity and

sustainability. The reality of our age is that much of the economy is based on the exploitation of natural resources. The regulatory regime has been formulated to assist industries in committing environmental damage within the legal limits and is not really formulated with victims in mind or to provide clear guidelines as to which concrete acts are to be regarded as punishable offences. Added to all this uncertainty is that our understanding of "harm" to victims is constantly shifting as scientific knowledge advances. For example, in some jurisdictions, the laws permit a small amount of pollution that is considered "harmless" or manageable. Where it is difficult to distinguish between legal and illegal pollution, it is also hard to distinguish victims. For individuals or communities who suffer from the accumulation of small discharges of pollution, they might not be considered victims under the local law. Perhaps the increased involvement of organized criminal groups in polluting activities was not envisioned when State's drafted their regulations. From a victim's perspective does it matter if the river is being polluted by organized criminal groups disposing of toxic waste from meth labs or by the legal dumping by a corporation? Some criminologists argue that many of the most serious forms of environmental risk come from "normal social practice". For example, currently lawful practices such as using old oil tankers arguably create great risk from an ecological perspective. Perhaps with an increasing awareness and scientific knowledge of the environment and the impact of harmful practices, this will influence law reform in this field. However this raises the debate of crime versus social harm. There is a need for criminal justice systems to function with certainty in order to be fair and consistent. The question then is whether environmental harm can fit neatly into the existing criminal justice system.

The study concluded that, by understanding the real definition of environmental crime it is necessary to take into consideration both features and adjust them when searching for

solutions. By discussing and abolishing the causes of such differences on the individual, local, regional, state, interstate and international levels, and by using accepted methods and tools, causes could grouped on all levels from the international down to the individual. Such issues help clarify the definition, and division, of environmental crime. In all further definitions, the possibility of overlapping has to be taken into consideration and if possible, avoided.

The study revealed that the victims of environmental crime are not always aware of the fact that they have been victimized. Even when the individuals are aware of the impacts of environmental harm, they might not consider themselves as "crime victims" or report the harm to enforcement agencies. The victimization is often delayed with the victim becoming aware of the harm much later after the crime was committed or victimization might be repeated multiple times, meaning the harm is accumulated over time and from a number of acts. The direct victimization of the environmental crime may be experienced by non-human species, such as wildlife and their habitats, which is difficult to capture as well as causing time delay when it indirectly affects humans. The fact that the damage may be difficult to identify as the damage might not be immediate or have a future impact, or may not by quantifiable in financial terms, adds to the lack of victim self-identification. If victims do not self-identify as crime victims, they might be limiting their remedies to civil law. If victims are not aware of the shifting societal and corporate values and new conceptualization of what is a "crime", this too will limit their remedies.

The study revealed that many of the benefits of globalization, such as easier and faster communication, the movement of finances and international travel, are used by criminal groups to carry out criminal activities. The Internet is used with increasing sophistication to facilitate trade. Results of a research conducted by the UN Office on Drugs and Crime (UNODC) on

various forms of environmental crime in Southeast Asia suggest that the criminal networks responsible for wildlife and timber trafficking, as well as the smuggling of e-waste and ozone depleting substances, use sophisticated techniques and operate between continents in order to connect cheap supply sources to wealthy markets.

According to UNODC, the Governments of Italy and Colombia and the International Criminal Police Organization (INTERPOL) decided in 2010 to jointly develop a Digest of Organized Crime Cases to provide States with a compilation of cases on organized crime accompanied by expert commentary and related good practices.

The study revealed that special enforcement units have had a positive record in gathering intelligence, performing market surveillance, pursuing allegations of corruption and prosecuting complex corporate investigations. South Africa. Endangered Species Enforcement Unit is a good example. The Unit was founded by experienced officers from the rangeland crime division who were familiar with the need to penetrate networks, go undercover, gather intelligence and conduct sting operations. Specialist units are likely to be most effective when run on a .stovepipe. arrangement, in which they are connected into the legal and administrative structure at a level sufficient to bypass regional and local .regulatory capture.

The model of bypassing existing bureaucracy can be taken further to create .super-ministries, such as the Kenyan Wildlife Service, whose broad remit and responsibilities, including almost all aspects of national park management, cooperative wildlife management elsewhere, research, tourism and infrastructure, allows for joined-up policies on wildlife protection. The result is a 24-hour operations room, a host of specialist units, a paid informer pool and a network of honorary wardens to gather intelligence and a highly motivated, well-paid staff.

The study established that dedicated funding is necessary for long-term planning. The Kenyan Wildlife Service, for example, received dedicated funding over a ten-year period, which allowed for targeted investment in compliance programs and long-term structural reorganization to improve enforcement efficiency.

Generally penalties for environmental crime are relatively low. In some Member States this especially affects the ability of the enforcement authorities to use appropriate investigative techniques e.g. in Belgium imprisonment on remand exceeding 5 days requires a maximum penalty of minimum 1 year imprisonment in order to work out the case properly but the maximum penalty for illegal trade in endangered species foresees only a three month imprisonment. In Italy most of the environmental offences are considered as misdemeanours.

Due to this the enforcement authorities are not allowed to apply modern investigation techniques which are necessary to investigate in organised crime cases. Further they are sometimes not in a position to order the arrest of the defendants.

The study revealed that due to increasing competition for land, people have encroached on riparian reserves for economic activities. There is also a tendency in towns and cities for developments to occur along rivers and other water bodies. This is more so in towns such as Nairobi, where there are many developments along the Nairobi River. Naivasha is another town where several horticultural farms have encroached on the riparian reserve. The Nairobi River is currently being mapped with a view to moving any developments out of the riparian section.

The findings of the study revealed that corruption is seen as one of the most critical factors enabling illicit wildlife trafficking, as a facilitator of poaching as well as transactions between supply, transit, and demand countries, and an important source of resilience for organised criminal groups involved in such crimes.

Corruption may facilitate many of the crimes along the wildlife trade route, from poaching (e.g. illegal payments to issue hunting licenses, bribery of forest patrol officers), to trafficking (e.g. bribery of customs officials, illegal payments to issue export certificates, etc), to law enforcement (e.g. bribery of police officers and prosecutors to avoid investigations; illegal payments to manipulate court decisions). In addition, corruption and weak regulatory frameworks may offer several opportunities to criminal organizations to launder the proceeds of crime. Against this backdrop, there are several corruption instruments and approaches that could help in the fight against illicit trade in wildlife, including establishing a strong legal framework against both corruption and wildlife trafficking, human resources management reforms in the public sector, capacity building on both technical and integrity-related issues, and more generally, raising ethical standards across the public sector. In the particular case of wildlife crimes, special attention should be given to mechanisms to address corruption within customs, law enforcement agencies as well as the judiciary.

Based on the data analysed, the study revealed Valid and reliable intelligence covering specific illicit markets with focus on demand and supply sides using comparable tools in terms of illicit market assessments. The regulatory and legal frameworks on national and international levels have to be covered as well to monitor and compare effects and to identify loopholes and implementation deficits. Using criminal profiling, risk analysis, operational intelligence etc. demand a systematic cooperation between the enforcement bodies. Data collection and intelligence should be done through standardized system by national centres of criminal investigation and Europol as the central role player on Kenyan level.

Environmental crime affects all of society. It can have detrimental consequences on the economies and security of a country. For individuals, local communities and indigenous people, it may impact public health, livelihoods, and lower property values, as well as impacting on non-human species, nature itself, as well as future generations. It may cause many different types of harms or damages. Victims can suffer from various types of harm, including: direct or indirect; point source or diffuse; individual or cumulative; local, trans-boundary or global; and short term or long term harm. The effects of a single offence may not appear significant but the cumulative environmental consequences of repeated violations over time can be considerable. The perpetrators might be individuals, collective groups, corporations, governments and organized criminal groups. Take for instance, illegal logging. This unlawful conduct contributes to the process of deforestation and forest degradation, depriving forest communities and indigenous peoples of vital livelihoods, causing ecological problems like flooding, and is a major contributor to climate change, as up to one fifth of greenhouse gas emission stem from deforestation. In addition, it threatens biodiversity, undermines sustainable forest management, development and good governance and can be linked to armed conflict. The thematic discussion guide calls us to examine emerging trends and challenges regarding issues of criminalization and criminal justice to assist in developing possible responses, programs, and initiatives to deal effectively with emerging forms of crime that have a significant impact on the environment.

The very existence of national and international controls may serve to encourage unscrupulous individuals and companies to commit .environmental crimes. and deliberately evade environmental laws and regulations in the pursuit of personal financial benefit. Where there is movement of goods across boundaries (i.e. smuggling, etc.) or a transboundary impact to offences, so it is possible to speak of international or .transboundary environmental crime.

The respondents observed that environment crime undermines prosperity, security and human rights. Environmental crimes take the form of illegal trade in protected species; smuggling of ozone depleting substances; illicit trade in hazardous waste; illegal, unregulated and unreported fishing; and illegal logging and trade in timber. Such crimes often fail to prompt the required response from governments and the law enforcement agencies, as they are often perceived as 'victimless' crimes. For most countries, combating environmental crime is currently not a priority and the issue often remains overlooked and poorly understood, despite the actual and potential scale and consequences. In reality, such crimes affect all of society and all of nature. Criminal activities harming the environment have evolved to become a serious form of transnational organized crime with links to other crimes associated with high levels of violence and corruption. The involvement of criminal networks and organized crime groups acting across borders is one of main factors that have favored the considerable expansion of environmental crimes in the recent years. Led by vast financial gains and facilitated by a low risk of detection and scarce conviction rates, criminal networks and organized criminal groups are becoming increasingly interested in such illicit transnational activities.

Investigation have shown the level of organization needed for these crimes and the requisite links with other serious offences, such as theft, fraud, corruption, drugs and human trafficking, counterfeiting, firearms smuggling, and money laundering. Environmental crimes represent therefore an emerging form of transnational organized crime requiring serious in-depth analysis and better-coordinated preventive actions and responses at national, regional and international levels.

The study revealed that even in such highly corrupt situations, some rules must still exist, since if resources are available to all-comers, it is impossible to bestow patronage on specific

individuals or sectors of society. Enforcement, however, becomes an instrument to control the flow of illegal rents and ensure the patronage of clients. As with narcotics, the ensuing corruption is a major externality of some environmental protection regimes. Overall, in the absence of compelling evidence of the claimed scale of classic hierarchically structured organized crime groups in environmental crime, as opposed to their known involvement in some areas, is it important to avoid over-emphasis on headhunting individual criminals to the detriment of addressing the market in which they operate.

Controls that restrict the supply or demand of an existing environmental service will result in a missing market for that service. Unscrupulous individuals may seek to fill the gaps between the original market and the resultant one for personal profit by cutting corners, evading charges or bypassing access restrictions. Superimposed on this missing market that drives environmental crime may be specific regulatory or institutional failures that serve to undermine resulting control systems. Regulatory failures involve inadequate regulations that fail to implement an environmental treaty properly, contain loopholes or fail to deter (or even punish) evasion of the rules. Even when the rules themselves are adequate, institutional failures such as inadequate resources, untrained staff or cumbersome administration may prevent the effective operation of environmental controls.

Supply and demand restrictions for environmental services may come about for a number of reasons. Supply may be constrained to conserve a scarce environmental good such as an endangered animal population or because of increased costs of complying with altered environmental regulations. Similarly, demand may be adjusted through policies such as taxation to compensate for an associated cost or externality related to the production or consumption of particular commodities. If supply is restricted and demand remains, there is an incentive to

violate the controls on the access of the controlled commodity. Hence, endangered animals are poached and hazardous waste is dumped into rivers. If demand is artificially curtailed, there is an incentive to avoid associated costs and taxes through turning to unregulated sources of supply. Hence, illegal forestry operations pay bribes to avoid taxes or .transfer price. their products to avoid royalties. The result may be a very different level of environmental damage and resource utilization from that envisaged under .perfect. implementation of environmental controls.

The poaching and smuggling of commodities such as ivory, rhino horn, tiger bones, sturgeon eggs, bear galls, wild-caught parrots and rare orchids directly threaten some or all of the populations of the species that provide them in the wild. Unfettered trade in derivatives from hundreds of other less charismatic species also serves to further deplete wild populations subject to many other pressures including the pervasive threat of habitat loss.

Countries charge a stumpage tax on forestry operations, based on the volume of timber extracted; these charges are often intended to reflect the value of log at the stump, i.e. its price on the market less the costs of extraction and a reasonable profit margin. There is a strong incentive to alter these charges by under-reporting harvests and under-grading the size and the quality of the timber harvested. Companies may attempt to maximize their profits by extracting timber outside their agreed harvesting areas. The Kenya forest sector saw all these problems in the 1990s: in 1997, authorized log production was about 450,000m3, while estimated total harvesting was an order of magnitude higher at 4,300,000 m3.

Logging companies may also inflate reported costs or practise nil-profit accounting to decrease local business charges. Transnational subsidiaries may also .transfer price. timber shipments by underselling and under-grading timber shipments to their parent companies; the real value of the goods will then be reaped higher up the corporate chain, often being deposited

in tax havens. Transfer pricing on timber sales from Papua New Guinea in the 1980s was estimated at US$5.10/m3, resulting in losses of up to US$30 million per year.

Some environmental crime/harms can be global in nature, for example environmental crimes that contribute to climate change. With increasing concern of organized criminal groups involved in transnational environmental crime, these crimes can also involve legitimate corporations and state officials in the illegal activity. The study found that the perpetrators can range from small scale opportunistic activity all the way to large scale organized criminal groups involving other crimes including, for example, money laundering, human trafficking and corruption. More research is needed to look at the victimization aspects of transnational environmental crime. Of particular concern is that this form takes advantage of developing countries that have less stringent environmental regulations than developed countries and that are undermined by underdevelopment, corruption, abuse of power and armed conflict. The citizens of poor countries are at particular risk from both organized criminal groups and the legitimate corporations

CHAPTER FOUR

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMEDATIONS

4.1 Summary of findings

The study set out to establish the effectiveness of environmental crime management in Africa with a special focus on Kenya.

This section presents data analysis and interpretations of the findings from the data collected to determine environmental crime management in Africa with a special focus on Kenya. Data was analyzed qualitatively and quantitatively in order to establish the objectives under study. Primary data was collected using interview administered questionnaires to key stakeholders involved in environmental crime management, who were the main target population.

The data was then analyzed using descriptive statistics analysis (so as to give a statistical perspective) and document analysis (so as to give documented proof, critical review and comparative analysis of the topic) and thematic analysis. The results were presented in form of narrative, frequency tables, pie charts and bar graphs.

Regarding the factors affecting environmental crime management in Kenya, the study revealed that proper legislation and effective enforcement of environmental laws affects environmental crime management as they are very vital to any protection regimes that are designed to protect the environment – especially the fact that there is still no clear definition of environmental crimes in many countries and this has led to an indiscriminate use of the term, contributing to confusion in environmental crime management as some argue that it covers only

activities prohibited by current criminal law. Another factor that affects is the lack of harmonization of the laws governing environmental crime management in Kenya and combined with the contradiction between technological development and the wish for a clean environment. In trying to investigate the causes of environmental crime in Kenya, which will assist in environmental crime management, the study found poverty as a major cause of environmental crime. Evidence suggests that in certain areas, populations and environments are more vulnerable to the causes of environmental crime. Specifically, impoverished individuals and their communities due to socioeconomic status, low education, geography, racial and ethnic health disparities and lack of access to care are likely to face greater susceptibility to environmental destruction. Another reason is that environmental violators may believe that less oversight or law enforcement follow-up to violations occurs in such areas. The other cause of environmental crime is due to the fact that environmental crime is not yet fully understood by theses disadvantaged communities and as a result, their contribution towards environmental crime management is limited. Citizens of economically disadvantaged communities are at particular risk from both organized criminal groups and the legitimate corporations such as flower farms discharging wastes into the environment - perpetrate theses environmental crimes, and subsequently weaken effective environmental crime management in Kenya through underhand tactics such as corruption, dishonest corporate social responsibility campaigns that hoodwink the local community into believing that they are conserving the environment and other forms of compromises.

In order establish the nature and extent of environmental crime in Kenya, which will assist in environmental crime management - the study found that there are various types of environmental crimes - wildlife crime is the illegal exploitation of the world's wild flora and

fauna, while pollution crime is the trading and disposal of hazardous wastes or resources in contravention of national and international laws. For example in the *Mau* forest, illegal logging contributes to deforestation. It deprives forest communities such as *Dorobos* of vital livelihoods, causes ecological problems like flooding, and is a major contributor to climate change – up to one-fifth of greenhouse gas emissions stem from deforestation. Illicit trade in ODS like the refrigerant CFCs, contributes to a thinning ozone layer, which causes human health problems like skin cancer and other complications. Soil and water contamination from illegal hazardous waste dumping can damage ecosystems. Managing the growing extent of environmental crime challenge in Kenya requires a balanced, integrated and inclusive approach. The government and other stakeholders are in the process of considering models such as traditional conservation, development and security initiatives and establish innovative partnerships between public and private sector actors in environmental crime management in Kenya.

In looking at the effectiveness of environmental crime management in Kenya, the study established that environmental crime management has been made ineffective by corruption, shortage of personnel, lack of resources and lack of clear legislature, a fact that should be acknowledged. The current spate of poaching in Kenya affecting rhinos and elephants has been exacerbated by claims of grand corruption involving government officials which complicates effective environmental crime management. Although individuals may all benefit from a given environmental crime, the associated environmental damage implies that society overall is harmed: however, as society as a whole is often unaware of its victimization, so regulators may not set levels of enforcement effort and restitution properly. There may even be the tacit assumption among regulatory institutions that because such problems are not directly quantifiable, they are not significant.

4.2 Conclusion

The study reveals that despite the growing awareness of environmental crimes, when it comes to environmental crime management, it still often fails to prompt the required response by individuals, governments, the enforcement community and the public, because it is still perceived as "victimless", environmental crimes do not always produce an immediate consequence, the harm may be diffused or go undetected for a lengthy period of time. The study therefore concludes that the challenge of environmental crime management in Kenya is serious. There is no clear legislation, strong environmental laws, and remuneration of enforcement officials and bureaucrats is often poor. It with made worse with weaker civil society, and transnational companies that offer inward investment that are proportionately more powerful.

This conclusion is aligned with Situ and Emmons who found that to give a justification as to why environmental crimes take place, especially in disadvantaged areas, the authors revealed that environmental crime is not yet fully understood by disadvantaged communities and as a result, environmental crime management is poor. Through their study, Situ and Emmons have managed to illustrate that environmental crime is not just a victimless crime, as earlier thought, and as a result environmental crime management is not seen or taken up as a personal responsibility for individuals.[191]

In Kenya allocation of licensess to exploit resources such as timber can also be used as a mechanism for mobilizing wealth to reward political allies and engender patronage. Some environmental crime, especially industrial activities such as logging, cannot easily be disguised

[191] Yingyi Situ and David Emmons (1999) *Environmental Crime*: The Criminal Justice System's Role in Protecting the Environment. Published by Sage Publications, ISBN 0-7619-0036-5, ISBN 978-0-7619-0036-8.

and may be heavily reliant on corruption. Allocation of licences to exploit resources such as timber can also be used as a mechanism for mobilizing wealth to reward political allies and engender patronage, and in this whole process propagate environmental crimes.

The study also concludes that environmental crime management is ineffective in low social economic status areas of Kenya, such as the Northern region. This is because environmental crimes occur more frequently in disadvantaged communities - one recent example is that radioactive industrial products, claimed to have been damped in some parts of Northern Kenya. Also where such crimes occur are often located in areas with low property values, making land acquisition less expensive. Another reason is that environmental violators may believe that less oversight or law enforcement follow-up to violations occurs in such areas.

This low social economic areas face as challenge of supply and demand restrictions for environmental services, which may come about for a number of reasons. Supply may be constrained to conserve a scarce environmental good such as an endangered animal population or because of increased costs of complying with altered environmental regulations. When supply is restricted and demand remains, there is an incentive to violate the controls on the access of the controlled commodity. Hence, endangered animals are poached and hazardous waste is dumped into rivers – the lake Naivasha contamination reported in the media which resulted in the death of flamingo; in the process the environmental crime management actors are rendered ineffective.

This conclusion is in agreement with Jackson who stated that if supply and demand of environmental serves is artificially curtailed, there is an incentive to avoid associated costs and taxes through turning to unregulated sources of supply. Hence, illegal forestry operations pay bribes to avoid taxes or transfer price their products to avoid royalties. The proceeds of

environmental crime far surpass the remuneration of government official and hence compromise effectiveness of environmental crime management.[192]

4.3 Recommendations

The study made the following recommendations;

The process of formulating environmental crime laws should be all inclusive with wide consultation among stake holders especially local communities. This will ensure ownership by the local and hence will play a key role in the management of environmental crimes. This way, environmental crime management in the country will be highly enhanced.

The study encourages strengthening of environmental crime management policies. At the moment environmental crime and environmental crime management is still a loose concept with weak policy. Environmental policy instruments need to be reviewed in order to achieve the following objectives: enhancement and enforcement of the environmental protection laws; integration of the environment within sectoral policies and markets; implementation of an ecologic taxation reform; removal of unfair subsidies and softening environmental externalities; introduction of environmental accounting; improving awareness, knowledge and the involvement of citizens through a stronger public information system; increasing the decision-making role for citizens; implementing technological and scientific research other than promoting information and training.

Environmental crime management should be highly prioritized by the government as effective environmental crime management is crucial to the realization of Kenya's Vision 2030. This is because they impact on people's livelihoods, poverty and human security. The vision can

[192] J.A. Mills and P. Jackson (1994), *Killed for a Cure: A Review of the World-wide Trade in Tiger Bone* (Cambridge: TRAFFIC International)..

be achieved only when people enjoy human security and live in a conducive environment and the sustainable use of resources and their availability in adequate quantities and quality are also key.

Environmental crimes should be addressed by policy and legislation that ensure that local communities benefit from the country's natural resources so that they value and protect them. Furthermore, environmental crime management should be greatly enhanced by improving the capacity of environmental law enforcement officials and agencies through training.

There is need to harmonize the sectoral environmental laws. Lack of knowledge of environmental crime management by the police and judiciary, inadequate investigation and prosecution skills among enforcement personnel, the need for improved cooperation and networking skills and opportunities among agencies and the need to enhance knowledge of international environmental agreements and their domestication/implementation greatly affects environmental crime management in Kenya.

Raising awareness on the nature, extent and status of environmental crime, especially among local communities, and formal and informal institutions, will assist in environmental crime management.

In addition the extent of a black market is largely determined by the discrepancy between supply and demand of a product, the consistency of the objectives of the controller and those controlled, and the method of implementation of an international exchange of goods. There was general agreement that these factors should, therefore, be controlled to minimize overall levels of environment harm. [193] The study shows that enforcement of existing laws may not be enough; it is also necessary to adjust supply and demand pressures that shape environmental black markets.

[193] Halsey, M. (2004). Against 'Green' Criminology. *The British Journal Criminology, 44* (6), 833-853.

Environmental crime is economic crime where the exchange of goods is consensual, so there are rarely victims to complain of offences. This means that the state bears the burden of enforcement.[194] The literature suggests therefore, that environmental treaties should contain comprehensive review procedures to provide feedback to policy-makers on compliance with, and the impact of, international controls.

Relevant data may include the price dynamics of controlled commodities, volume and values of licit and illicit markets, gaps in commodity data between trading partners, stockpiling data, registration details and capacities of processing and treatment centres, levels of offences committed in contravention of relevant governing legislation, enforcement strategies and effort levels and national implementation of MEA commitments.[195] Traffic in controlled commodities should be made conditional on the provision of adequate data that it falls within the boundaries specified by international agreements. The burden on the state as the direct sole manager of resources should be lessened through efficiently managing resource externalities.

[1]Halsey, M., White, R. (1998). Crime, Ecophilosophy and Environmental Harm. *Theoretical Criminology, 2* (3), 345-371.

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[194] Croall, H. (1992). *White Collar Crime*. Buckingham: Open University Press.

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APPENDICES

Appendix 1: Letter of Data Collection

TO WHOM IT MAY CONCERN

MR. WILSON K. KORIR

The above mentioned is a senior officers from Kenya Wildlife Service, and is currently undertaking a Master of Arts Degree in International Studies at the National Defence College, Karen, Kenya. His thesis is on "Environmental Crime Management in Africa: A Case Study of Kenya".

Any assistance given to him to facilitate data collection in respect of the study is highly appreciated.

Lt. Col. Murrey

For Commandant

National Defence College

Appendix 2: Structured Questionnaire

Serial No……..

The questionnaire is meant to help the study to determine environmental crime management in Africa with a special focus on Kenya. Kindly answer the questions by writing a brief statement or ticking in the boxes provided as will be applicable. This research is intended for an academic purpose only.

SECTION ONE: SOCIO-DEMOGRAPHIC INFORMATION

1. Age of respondent in years

a. 18-25 [ ]

b. 26-33 [ ]

c. 34-41 [ ]

d. 42- 49 [ ]

e. 50-57 [ ]

f. 57-64 [ ]

2. Marital status

a. Single [ ]

b. Married [ ]

c. Separated [ ]

d. Divorced [ ]

3. Religion

a. Catholic [ ]

b. Protestant [ ]

c. Muslim [ ]

d. None [ ]

4. Name of your organization?.....

5. Occupation of the respondent?.....

6. Education level

a. No formal education [ ]

b. Primary [ ]

c. Secondary [ ]

d. College [ ]

e. University. [ ]

7. Are you familiar with the environmental crimes?

a. Yes [ ]

b. No [ ]

8. Have you ever been a witness to environmental crime?

a. Yes [ ]

b. No [ ]

SECTION TWO: FACTORS AFFECTING ENVIRONMENTAL CRIME MANAGEMENT IN KENYA

To what extent do you agree with these statements? Guide: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

No	Description	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
i.	That those who engage in environmental crime do so to meet either commercial or subsistence objective.					
ii.	That those who are actively involved in environmental crime management include individuals, government, small independent groups, organized groups and corporate bodies.					
iii.	That environmental crimes in the forestry sector include illegal trade in sandalwood, illegal logging, illegal trade in endemic flora, including bio-prospecting and bio-piracy; forest excisions, forest encroachment, illegal grazing, illegal forest fires, growing of bhang, and illegal charcoal making.					
iv.	That environmental crime management is effective in Kenya.					
v.	That Kenya has various laws that seek to protect her natural resources from the consequences of pollution and environmental degradation.					

vi.	That environmental offence has been treated mainly as misdemeanors or minor crimes, and not felonies or serious crimes.					
vii.	That environmental crime is, thus, a lucrative trade and has attracted persons with political and security connections, thus granting protection to operatives.					
viii	Have there been improvements on the environmental crime management, commensurate to the causes of environmental crimes.					
ix	The lack of harmonization of the laws governing environmental crime management in Kenya and combined with the contradiction between technological development leads to poor environmental crime management.					

SECTION THREE: CAUSES, NATUREAND EXTENT OF ENVIRONMENTAL CRIME IN KENYA

The following are statements about the nature of environmental crime in Kenya. To what extent do you agree with these statements? Guide: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

No	Description	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
i.	That poaching and illegal trade in elephants and rhinos has increased significantly in recent years, and Kenya is one of the major supply regions.					
ii.	Water resources include surface water, rainwater and groundwater and these are polluted by organic, inorganic and microbial matter. The main causes of water pollution include effluent from industry and agricultural activities, soil erosion, municipal solid and liquid wastes, sludge from wastewater treatment plants, asbestos and mining activities.					
iii.	Environmental crime affects the environment, quality of life and wellbeing of humanity. Eventually, it also impacts adversely on agriculture and food security, the overall quality and quantity of environmental resources, and, ultimately, people's lives and livelihoods and reduces environmental crime management.					
iv.	That environmental crime is extremely problematic in countries where corruption is widespread, government enforcement is weak, and economic opportunities are few.					

v.	That due to the transnational dimension of environmental crimes, there is strong evidence that organized criminal groups are involved in poaching, smuggling, and trade of wildlife and wildlife products.					
vi.	That the environment is about resources, and environmental crime impacts on the availability of resources, resulting in undue competition for them and in the process weaken environmental crime management.					
vii.	That individuals act of their own accord and are mainly subsistent. Most of these crimes are committed out of negligence, lack of alternatives and lack of understanding of environmental crime management.					

SECTION FOUR: EFFECTIVENESS OF ENVIRONMENTAL CRIME MANAGEMENT IN KENYA

To what extent do you agree with these statements? Guide: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

No	Description	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
i.	That environmental crime is not restricted by borders, and can affect a nation's economy, security and even its existence.					
ii.	That widespread poverty has resulted in environmental crimes in Kenya and has rendered environmental crime management ineffective.					
iii.	That due to its unofficial nature, environmental crime and its impact is difficult to detect, quantify and counteract making environmental crime management ineffective.					
iv.	That there are different approaches to combating environmental crime, such as tracking and restricting the movement of certain goods across borders or penalizing certain activities.					
v.	That environmental crime management has been dedicated and assigned to a single special unit, which deals single-handedly with environmental crime related matters.					

Appendix 3: News Articles on Environmental Crimes

In this Tuesday, Feb. 19, 2013 file photo, a team from the Kenya Wildlife Service (KWS) and the International Fund for Animal Welfare (IFAW) fit a GPS-tracking collar onto a tranquilized 26-year-old male elephant, to monitor migration routes and to help prevent poaching, at the Kimana Wildlife Sanctuary next to Amboseli National Park in southern Kenya, near the border with Tanzania. The illegal cutting of timber and the poaching of elephants and rhinos are part of a "rapidly escalating environmental crime wave" that international governments must combat by increasing cooperation, police and environmental officials said Wednesday, Nov. 6, 2013. Interpol and the United Nations Environmental Program are working together to stop environmental crimes that cost tens of billions of dollars a year, said Achim Steiner, the U.N. Environmental Program's Executive Director. Some 500 law enforcement and environmental experts from around the world are meeting in Nairobi this week to try to stem the problem. (AP Photo/Ben Curtis, File)

NAIROBI, Kenya (AP) — The illegal cutting of timber and the poaching of elephants and rhinos are part of a "rapidly escalating environmental crime wave" that international governments must combat by increasing cooperation, police and environmental officials said Wednesday.

Interpol and the United Nations Environmental Program are working together to stop environmental crimes that cost tens of billions of dollars a year, said Achim Steiner, the U.N. Environmental Program's Executive Director. Some 500 law enforcement and environmental experts from around the world are meeting in Nairobi this week to try to stem the problem.

"This is a global phenomenon. This is a global market place. These are global syndicates, criminals that are engaging in this trade," said Steiner, who labeled the problem "a rapidly escalating environmental crime wave."

The demand for elephant ivory by China's rising middle class is fueling the deaths of thousands of elephants across Africa, say wildlife experts. An estimated 17,000 elephants were illegally killed in Africa in 2011, according to UNEP.

Customs officials in China this week reported busting two smuggling rings responsible for trafficking nearly $100 million worth of elephant ivory from Africa to China, the International Fund for Animal Welfare said Wednesday. The group also said Tanzanian authorities announced this week they had sized 706 tusks from the house of three Chinese traders in Tanzania's capital.

Azzedine Downes, president of IFAW, called on national leaders to commit to developing security task forces to lower environmental crime.

"People from around the world are outraged that organized criminal networks are robbing the world of our elephants, rhinos, tigers and other wildlife, purely for the profit of a very few outlaws," Downes said.

"If range state countries are willing to commit to enforcement that works across national boundaries, our supporters in non-range states are willing to step up and help fund those efforts," Downes said.

Steiner says that UNEP collaborates with China to increase public awareness that demand for ivory results in dead elephants. He said many people in the world don't understand the connection.

Kenya's attorney general, Githu Muigai, speaking at a news conference, noted that Kenyan lawmakers are considering a wildlife conservation bill that greatly increases penalties for poachers and traffickers in Kenya. He said Kenya has seen 90 elephants and 35 rhinos killed by poachers this year.

"Kenya stands at a crossroads as far as environmental criminal activity is concerned," said Muigai, who urged lawmakers to pass the proposed wildlife bill.

A new paramilitary anti-poaching team was formed in Kenya this year, and Muigai said it's having "a very significant deterrent effect."

There is no evidence to prove allegations that terror and militant groups such as Somalia's al-Shabab and Joseph Kony's Lord's Resistance Army are poaching elephants to fund their military activities, said Jean Michel Louboutin, the executive director of police services at Interpol.

"I'm a policeman and to make such an assertion there has to be evidence, and to this stage there is no evidence," Louboutin said.

Affected countries often don't have investigative capacities to follow the environmental crime trail, said UNEP director Steiner. He said he hopes the Nairobi meeting will result in increased law enforcement capacity, because the difference between suspecting such terrorism-wildlife activity and being able to prosecute is "a long distance."

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