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Energy Access among the Urban Poor in Kenya: A Case Study of Kibera Slums

Simeon Lesirma

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Effect of Environmental Laws on Protection of Ecosystem

[1*] Simeon Lesirma
[1*]Post graduate student, University of Nairobi
P.O. Box 30197, Nairobi, Kenya
[*]Corresponding Author's Email: simeonlesrima@gmail.com

Abstract

Purpose: Environmental law is a body of law, which is a system of complex and interlocking statutes, common law, treaties, conventions, regulations and policies which seek to protect the natural environment which may be affected, impacted or endangered by human activities. Some environmental laws regulate the quantity and nature of impacts of human activities: for example, setting allowable levels of pollution or requiring permits for potentially harmful activities.

Findings: The study also concludes that some of the above laws have been successful in environmental protection. From the study we can also conclusively argue that some of the environmental laws in place have failed to achieve their purpose. In light with the above literature review, the study concludes that most developed and developing countries have environmental laws in place. These laws include: Clean Air Act (CAA), The Clean Water Act (CWA), Drinking Water Act (SDWA), The Toxic Substances Control Act (TSCA) and The Solid Waste Disposal Act and Resource Conservation and Recovery Act (RCRA). This is a clear indicator that most governments and law making institutions are conscious about environmental protection.

Policy recommendations: This study provides implications for both policy and practice. This study recommends that the government which is the institutions mandated to formulate laws in many countries should pass stringent and effective environmental laws for protecting the environment. The law enforcers and the judiciary should work hand in hand in making sure the environmental law in place is obeyed and stiff penalties levied on the offenders.

Key Words: *Environmental laws, environment protection, ecosystem*

1. Background of the Study

Environmental law is a body of law, which is a system of complex and interlocking statutes, common law, treaties, conventions, regulations and policies which seek to protect the natural environment which may be affected, impacted or endangered by human activities. Some environmental laws regulate the quantity and nature of impacts of human activities: for example, setting allowable levels of pollution or requiring permits for potentially harmful activities. Other environmental laws are preventive in nature and seek to assess the possible impacts before the human activities can occur (Brunnée, 2002). Deterioration of the Earth‘s environment increasingly threatens the natural resource base and processes upon which all life on Earth depends. Over one billion people currently lack safe drinking water and sanitation, making waterborne diseases one of the leading causes of death, especially among children in poor countries. Two-thirds of the world‘s population now lives in areas of water shortages where, increasingly, desertification threatens the food supply. UN Habitat 2003 reported that more than 180 million people in Africa live in fragile areas where they compete for water and land. In marine waters, nearly three-quarters of all commercial fish stocks are being harvested faster than they can reproduce (FAO, 2002). More than 500,000 people in Asia die every year from diseases related to air pollution (WHO, 2003). Species are becoming extinct at an unprecedented rate, taking with them potential yet unknown sources of medicines, nutrition and other benefits. Without strong and multifaceted action by every person, the biosphere may become unable to sustain human life. At the least, coming generations will suffer deprivation and hardship unless current patterns of production, consumption and waste management are dramatically altered. Sustainable development needs to become the watchword and policy of all public agencies and officials and the responsibility of every person.

Environmental law is a comparatively new branch of domestic and international law. As such, it is in the process of being moulded, unlike older areas of law, which have already assumed fairly defined concepts, principles and procedures. In this process of moulding, the judiciary has a vital role to play. The fine nuances of particular situations that the judge encounters in individual cases are often not matters with which legislatures have the time and resources to deal. It is often before the judiciary that they come up for the first time. Consequently it is often judicial decision-making that gives shape and direction to the new concepts and procedures involved. As more such situations come before judges, these individual decisions initiate trends, which give the newly emerging discipline of environmental law the requisite conceptual framework and momentum for its development. (Shelton& Kiss 2005)

1.1 Importance of environmental laws for ecosystems

We all depend on a healthy environment. We also rely on a stable economy, which is fuelled by natural resources and thriving ecosystems. Environmental laws help ensure the environment and the economy are equally protected and promoted, not just because we need them both, but because each needs the other. Truly effective environmental laws make sure, among other things, that companies design projects that cause the least amount of environmental harm and make the best use of resources. Laws also make sure these companies are the ones paying the costs of preventing or repairing damage to the environment, rather than downloading them to taxpayers as clean-up costs or healthcare expenses. In short, regulation forces companies to take care of the environment

as part of the price of doing business. Effective environmental laws should prevent decision-makers from rushing approvals for projects that could hurt our communities, our environment and our economy in the long-term. (Shelton& Kiss, 2005)

1.2 Problem statement

Environmental deterioration through human activity is proceeding at an unprecedented rate, and unless this process is held in check the damage caused will be grave and irreversible, hurting not only ourselves but future generations, and not only the nation where it occurs but the global population in general (WHO, 2003). All public institutions, including the judiciary, need therefore to pool their resources against this universal peril. Institutions charged with responsibilities for the protection of the ecosystems are therefore under a special duty to do what they can to avoid a situation where the judiciary is left unprepared to face this momentous challenge. Therefore, there is a need for governments to formulate legal framework and policies or review the existing ones that aim to protect the environment. Environmental laws must be in place to ensure all environmental polluters must be held accountable for their activities. Munich Re, the world's largest reinsurance company, predicted in 2003 that the global economic loss due to extreme weather events would reach US$30 billion annually by 2050. In sum, humans are rapidly exceeding the carrying capacity of the environment. Previous studies done on environmental laws are mostly from developed countries. This serves as a motivation for the study on environmental laws for protecting ecosystems in Kenya.

Bearden, (2001) conducted a study on environment laws for protecting the environment in USA. Wagner, W. E. (2004) in his journal discusses the extent to which environmental laws have failed in protecting the environment in USA. Matovu, (2006) carried out a study in Uganda on challenges facing implementation of environmental laws. Bearden, (2001), Wamicha, and Mwanje, (2000) and Wagner, (2004) used both primary and secondary in their respective studies. From these previous studies it is evident that there exist conceptual gaps, contextual gaps and methodological gaps and therefore this study tries to fill up these gaps.

1.3 Objectives of the Study

i. To describe the various laws that aim to protect the environment/ ecosystem
ii. To assess the extent to which such laws have succeed in protecting the environment/ecosystem
iii. To assess the extent to which such laws have failed in protecting the environment/ ecosystem
iv. To suggest possible amendments to such laws in a bid to improve their effectiveness in protecting the environment

2.0 LITERATURE REVIEW

2.1 Theoretical framework

The study presents various theories that inform the variables underlined in the current study. These theories emphasized the need to have environmental laws for ecosystem, including the polluter pay principle, and provided the basis for the emergence of sustainable development as an

international policy and legal concept (Tladi, 2009). These theories include: Tragedy of Commons/game theory, externalities theory/public goods theory and theory of regulation.

2.1.1 Theories of externality/ Public goods theory

A conceptual framework that provides the basis of environmental laws is provided, Pigou (1920), Coase (1960) and Baumol and Oates (1988) theory of negative externalities. Pigou deals with the problem of smoke emission by a factory damaging nearby business/residents. His solution for correcting the negative externality is to impose a per unit tax on output of the firm generating the negative externality. The per unit tax should be equal to the difference between the social marginal cost and the private marginal cost corresponding to the social optimal output, the output satisfying the condition the price equals the social marginal cost. Imposition of such a tax will raise the output price and reduce the demand and thereby helps in internalizing the environmental costs to some extent in the decisions of producers and consumers of the product.

Pigou recognizes that _sometimes, when the interrelations of the various private persons affected are highly complex, the government may find it necessary to exercise some means of authoritative control‘ (p.194)

Coase, (1960) considers the pollution problem of reciprocal nature. He says it is necessary to know whether the damaging business is liable or not for the damage caused since without the establishment of this initial delimitation of rights there can be no market transactions to transfer and recombine them. But the ultimate result (which maximizes the value of production) is independent of the legal position if the pricing system is assumed to work without cost. This proposition is known as the Coase theorem. He argues that the problem which we face in dealing with actions which have harmful effects is not simply one of restraining those responsible for them. What has to be decided is whether the gain from preventing the harm is greater than the loss which would be suffered elsewhere as a result of stopping the action which produces the harm. He rules out government intervention in the form of specifying standards or levying a tax to correct the externality, but advocates a role for government in defining and enforcing property rights for environmental resources and mitigating transaction costs.

Baumol and Oates, (1988) highlight the information problems (knowledge of marginal damage and marginal social cost functions, determination of social optimal output and its uniqueness) in implementing the Pigouvian tax. To solve this problem he suggests a two-stage approach: First, decide the ambient standards based on available scientific knowledge or/and social preferences, and second, pursue one of the following two options, namely, standards and charges approach or standards and permits approach. Given the standards, the charges can be decided based on knowledge of the marginal abatement cost functions. Alternatively, given the standards and information about the baseline pollution levels, tradable permits/quotas can be distributed and prices of the permits be determined by the market forces.

The most precise technical definition of a public good, and the definition that is most often referred to by economists, is Samuelson's definition, which says that a public good is a good that, once produced for some consumers, can be consumed by additional consumers at no additional cost (Samuelson, 1954). Goods with these characteristics will be underproduced in the private sector, or may not be produced at all, following the conventional wisdom, so economic efficiency requires

that the government force people to contribute to the production of public goods, and then allow all citizens to consume them.

Therefore, Pigou (1920), Coase (1960) and Baumol and Oates (1988) theory of negative externalities and Samuelson,(1954) theory of public goods are deemed to be relevant with this study. This is because environment is all about teaming and gaming where by some individuals benefits from through getting some resources from it but in that process it may lead to degradation of the environment thus negatively impacting on society at large.

2.1.2 Game Theory/ Tragedy of Commons

Game theory is the formal study of conflict and cooperation. Game theoretic concepts apply whenever the actions of several agents are interdependent. These agents may be individuals, groups, firms, or any combination of these. The concepts of game theory provide a language to formulate structure, analyze, and understand strategic scenarios (Cournot, 1838). Game theory was established as a field in its own right after the 1944 publication of the monumental volume Theory of Games and Economic Behavior by von Neumann and the economist Oskar Morgenstern. John, (1950) demonstrated that finite games have always have an equilibrium point, at which all players choose actions which are best for them given their opponents' choices. This central concept of non cooperative game theory has been a focal point of analysis since then.

As a mathematical tool for the decision-maker the strength of game theory is the methodology it provides for structuring and analyzing problems of strategic choice. The process of formally modeling a situation as a game requires the decision-maker to enumerate explicitly the players and their strategic options, and to consider their preferences and reactions. The discipline involved in constructing such a model already has the potential of providing the decision-maker with a clearer and broader view of the situation. This is a ―prescriptive‖ application of game theory, with the goal of improved strategic decision making. With this perspective in mind, this study explains basic principles of game theory needed in formulating environmental laws for ecosystems in the fight to protect the environment.

Most essays on environmental regulation begin by referring to ― The Tragedy of the Commons.‖ (Garrett, 1968) seminal article is usually cited for its account of how environmental degradation results from the tendency of human beings to overexploit resources held in common ―what he calls the tragedy of the commons. But ―The Tragedy of the Commons‖ also has much to tell us about what are, and what are not, effective means of avoiding such potentially tragic consequences. In this study, (Garrett, 1968) article is extrapolated to draw some conclusions regarding environmental regulation. Specifically, the study argues that there are two distinct forms of environmental regulation, and that proper public policy analysis requires a comparative assessment of which constitutes the more effective means of combating any particular

environmental problem. Hardin's most famous observation is that holding valuable resources in common presents a collective action problem even when the resources are renewable ones. Any renewable resource has a carrying capacity a maximum number of individuals that can utilize the resource indefinitely without permanently damaging the ability of the resource to replenish itself. As long as the number of individuals exploiting a resource remains below the carrying capacity, the resource will continue to exist and provide benefit. Once the carrying capacity is exceeded,

however, the resource will be totally consumed by the present users and yield no future benefit. Therefore there is need of sound environmental policies to protect ecosystems from distinction.

2.1.3 Regulation Theory

According to Oates and Portney, (2001) there are a number of distinct approaches to understanding regulatory activity. The traditional neoclassical and normative approach sees regulatory measures as one means for correcting allocative distortions in a market system. In the case of environmental policy, the standard theory of externalities provides a basic explanation for tendencies in a market economy toward excessive levels of pollution. From this approach follows a clear cut prescription for correction of this distortion: the internalization of the external costs through either a system of taxes on polluting activities equal to marginal social damage or a system of tradable emissions permits that restricts aggregate pollution to the efficient level and, at the same time, guides abatement activities into a least-cost pattern.

But this is the normative theory of environmental regulation. It emerges from an analytical exercise involving the maximization of social welfare. As such, it presumes implicitly an enlightened public sector that designs and implements social program for environmental protection with the sole objective of promoting the well-being of the polity as a whole (i.e., some weighted average of individual utilities) (Oates & Portney, 2001). This regulation theory therefore sets a proper baseline for formulation of effective environmental laws to protect the environment from mismanagement

2.2 Empirical Review

2.2.1 Laws that aim to protect the environment/ecosystem

Environmental Protection Agency (EPA) in 1970 formulated the following environment laws with a view of protecting the environment in USA (Bearden, 2001). Further amendments were made to these laws to enhance their effectiveness. These laws include:

Clean Air Act (CAA) which authorize EPA to set mobile source limits, ambient air quality standards, hazardous air pollutant emission standards, standards for new pollution sources, and significant deterioration requirements; to identify areas that do not attain federal ambient air quality standards set under the act; to administer a cap-and-trade program to reduce acid rain; and to phase out substances that deplete the Earth‘s stratospheric ozone layer.

The Clean Water Act (CWA) authorizes the regulation and enforcement of requirements that govern waste discharges into U.S. waters, and financial assistance for wastewater treatment plant construction and improvements. The Ocean Dumping Act focuses on the regulation of the intentional disposal of materials into ocean waters and authorizes related research (Allen & Shonnard, 2001). Drinking Water Act (SDWA) authorizes EPA to establish primary drinking water standards, regulate underground injection disposal practices, and administer a groundwater control program.

The Solid Waste Disposal Act and Resource Conservation and Recovery Act (RCRA) govern the regulation of solid and hazardous wastes, and corrective actions to address improper waste management practices. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) focuses on the cleanup of contamination resulting from the past release of hazardous substances, but excludes petroleum which primarily is covered under the Oil

Pollution Act. Amendments to the Solid Waste Disposal Act specifically address the cleanup of petroleum leaked from underground storage tanks that are not covered under CERCLA.

The Toxic Substances Control Act (TSCA) and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) require regulation of commercial chemicals to reduce risks to human health and the environment. The Pollution Prevention Act (PPA) authorizes various mechanisms intended to prevent pollution by reducing the generation of pollutants at the point of origin Emergency (Allen & Shonnard, 2001).

Planning and Community Right-to-Know Act (EPCRA) requires industrial reporting of toxic releases and encourages chemical emergency response planning (Bearden, 2001). This study focused on environmental laws in USA thus presenting a conceptual gap

Kamau, (2009) conducted a study on environmental laws in Kenya. The following environmental laws constituted his findings: Noise regulations, 2009 These Regulations prohibit a production of any loud, unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment. Wetland regulations, 2009 the regulations empower the District Environment Committee to co-ordinate, monitor and advise on all aspects of wetland resource management within the district. Water quality regulations this includes the following: protection of sources of water for domestic use, water for industrial use and effluent discharge and water for agricultural use. Waste management regulations: These Regulations apply to all categories of waste. Such as Industrial wastes, hazardous wastes, toxic wastes, pesticides, toxic substances, biomedical wastes and radio-active substances. This study focused on environmental laws in Kenya thus presenting a conceptual gap since it focused only on one objective that is environmental laws in Kenya. **2.2.2 The extent to which environmental laws have succeed in protecting the ecosystem** Some of the environmental laws have succeeded in protecting the environment for instance,

Doremus & Tarlock (2013) in their study ―Can the Clean Water Act succeed as an ecosystem protection law?" have pointed out the success the Clean Water Act has achieved in protecting the ecosystem. The primary historical innovation of the Clean Water Act was its recognition of federal responsibility to protect public health. The federalization of water pollution control both broadened the scope of pollution control and enshrined the power of engineers, as opposed to water managers, to define what elements of water quality received primary protection. The control of point source discharges is a major success story, but it also illustrates the challenges of using the Clean Water Act to move to a more holistic view of the relationship between water quality and healthy ecosystems.

Rechtschaffen, (2003) conducted a study on ―Enforcing the Clean Water Act in the twenty-first century: Harnessing the power of the public spotlight‖ in UK. The found The Clean Water Act plays a big in controlling point source discharges those from a specific and identifiable source, as opposed to those whose origins are unknown and led to impressive improvements in water quality over the past 30 years. A nationwide Environmental Protection Agency survey in early 2003, for example, found that the rate of significant noncompliance with the CWA among 6,600 major facilities with the largest discharges was approximately 25 percent. This implies 75 percent had complied the law.

Ogendi and Ong'oa (2009) conducted a study on Water Policy, Accessibility and Water Ethics in Kenya. In their study findings they noted, The 2002 Act, 60 given effect in 2003, emphasized the role and active participation of local communities. It provided for the creation of Catchment Advisory Committees (CAC) to oversee the use, control, development, protection and conservation of water resources within each catchment area. Local communities were deemed to be well-informed on their unique water issues, and therefore, contribute immensely to decisionmaking and implementation of water projects in their locale. Being active participants in the decision-making process enables them to embrace the water projects as their own, and thus, makes them willing to go an extra-mile to ensure success. This has been an important milestone in the new Water Act. These studies demonstrate how successful existing environmental laws have been in recent times.

2.2.3 The extent to which environmental laws have failed in protecting the ecosystem Wagner, W. E. (2004) in his journal discusses the extent to which environmental laws have failed in protecting the environment in USA. One of the most significant problems he discusses in his findings that is facing environmental law is the dearth of scientific information available to assess the impact of industrial activities on public health and the environment. After documenting the significant gaps in existing information, in his study argues that existing laws both exacerbate and perpetuate this problem. By failing to require actors to assess the potential harm from their activities, and by penalizing them with additional regulation when they do, existing laws fail to counteract actors‘ natural inclination to remain silent about the harms that they might be causing. Both theory and practice confirm that when the stakes are high, actors not only will resist producing potentially incriminating information but will invest in discrediting public research that suggests their activities are harmful.

Matovu, (2006) carried out a study in Uganda on challenges facing implementation of environmental laws, the study had the following findings:

First, there is the problem arising from failures at different institutional linkages for environmental management. Whereas for example wetlands are held in trust by Central Government or local Government for the common good of the people of Uganda, recent examples of wetland abuse have included cases where Local Authorities have been the very violators of these constitutional and legal provisions. Where this has happened, local authorities have indicated that they converted wetlands for the sake of providing their communities with economic growth opportunities and for fighting poverty. It is therefore a dilemma that the very institutions entrusted with the protection of wetlands have in some cases not assisted the crusade for their conservation.

Lack of an effective grassroots enforcement mechanism is making it extremely difficult to control indiscriminate pollution by anonymous individuals and companies. Environmental laws in Uganda failure is due to system mandated to enforce the laws also participate in violating the same laws

Wamicha, and Mwanje, (2000) conducted a study on Environmental Management in Kenya. A descriptive survey design was undertaken in the study. A stratified random sampling was used to identify a sample and data was collected using questionnaires. The findings indicate that the main challenges facing environmental laws in Kenya include; In Kenya Parliamentary Acts governing environmental matters are mainly sectoral. For example, there is the Agriculture Act, the Water Act, the Land Acquisition Act, etc. At the same time, these sectoral legislations

usually lack co-ordination such that in some cases they may be contradictory. For example, in order to increase food production, the Agriculture Act may allow the draining of wetlands and bottomlands in a reclamation project. Such action contradicts any endeavour to conserve Wetland Biodiversity. The harmonization of environment-specific legislation could improve the conservation practice.

The economics of development is well developed in Kenya. The country has always given estimates of costs for every National Development Plan. However, expenditure on environmental conservation and/or improvement is only incorporated accidentally. The result has been the neglect of the conservation of ragile ecosystems, resulting in serious damage to water, soil and genetic resources, hence land productivity

Poverty in Kenya is pervasive and getting much worse. In coping with poverty, one of the popular options is to exploit whatever natural resources that could be found within the living environment, such as vegetation, with the consequence of land degradation. A disturbing overall feature of the poverty situation is the apparent long-term trend of impoverishment. Resource use is equally deteriorating. To improve on the conservation practice in Kenya, the poverty situation must therefore be urgently tackled.

These studies indicates that the existing environmental laws are facing challenges and have not been all successful in protecting the environment

2.2.4 Possible amendments to these laws in a bid to improve their effectiveness in protecting the environment/ecosystem

In order to achieve better environment further amendments must be made on the existing laws to enhance their effectiveness. Winalski,(2009) conducted a study on Cleaner Water in China-The Implications of the Amendments to China's Law on the Prevention and Control of Water Pollution and study recommended that in order to address water pollution effectively, China must further the development of its water pollution permit system. Pollutant discharging units are to apply for licenses and submit forms to the local agencies. The local agencies must have the authority to administer the system in relation to the total discharge control system.

Barczewski (2012) conducted a study on How Well Do Environmental Regulations Work in Kenya?: A Case Study of the Thika Highway Improvement Project. His study recommended the following amendments: develop a new funding plan for NEMA that supplies it with adequate resources to fulfill its mandate and removes fee competition with other government agencies. The government should also subsidize legal advice and representation for those who lack the means for legal counsel but whose environmental rights have been harmed. The law should also be clear on both the National Land Commission and The Court for Land and Environment to make sure that they are well funded and staffed by competent bureaucrats and judges. The environmental law should also establish an agency by law that will listen and handle cases related to environmental mismanagement reported by citizens.

3.0 SUMMARY OF RESEARCH GAPS

Bearden, (2001) conducted a study on environment laws for protecting the environment in USA. This study focused on reviewing the existing environmental laws, their success and failure in protecting the environment and the possible amendments to such laws to make them more effective in protecting the environment. This study presents a conceptual gap since it focused on the review of existing environmental laws while the current study focuses on the broader of the effectiveness of the existing environmental laws in protecting the environment. Wagner, W. E. (2004) in his journal discusses the extent to which environmental laws have failed in protecting the environment in USA. This study focuses on both failure and success of the environmental laws. This presents a conceptual research gap. Matovu, (2006) carried out a study in Uganda on challenges facing implementation of environmental laws. There is a conceptual gap since the current study detailed failure, success and amendments to existing environmental laws.

Bearden (2001), Wamicha, and Mwanje (2000) and Wagner (2004) used both primary and secondary in their respective studies. The current study employed literature review/desktop study thus a methodological gap exists. The primary data was collect by visiting several organizations who are stakeholders in the environmental protection.

Bearden (2001) and Wagner (2004) both conducted the study on environmental laws in USA which is a developed county. The current study focuses on Kenya which is a developing country.

4.0 CONCLUSION, AND POLICY IMPLICATION FOR FURTHER STUDY

4.1 Conclusions

Environment which includes air, water and soil is not only important but a primary necessity to humankind. Without these basic resources there would perhaps be no life at all. Therefore it is a responsibility of every individual to protect the environment.

In light with the above literature review, the study concludes that most developed and developing countries have environmental laws in place. These laws include: Clean Air Act (CAA), The Clean Water Act (CWA), Drinking Water Act (SDWA), The Toxic Substances Control Act (TSCA) and The Solid Waste Disposal Act and Resource Conservation and Recovery Act (RCRA). This is a clear indicator that most governments and law making institutions are conscious about environmental protection.

The study also concludes that some of the above laws have been successful in environmental protection. For instance the Clean Water Act achieved impressive improvements in water quality over the past 30 years in UK (Rechtschaffen, 2003).

From the study we can also conclusively argue that some of the environmental laws in place have failed to achieve their purpose. Wagner, W. E. (2004) in his study argues that existing laws both exacerbate and perpetuate this problem. By failing to require actors to assess the potential harm from their activities, and by penalizing them with additional regulation when they do, existing laws fail to counteract actors‘ natural inclination to remain silent about the harms that they might be causing. Both theory and practice confirm that when the stakes are high, actors not only will resist producing potentially incriminating information but will invest in discrediting public research that

suggests their activities are harmful. Therefore some of laws must be amended to enhance their effectiveness.

4.2 Policy Implication

This study provides implications for both policy and practice. This study recommends that the government which is the institutions mandated to formulate laws in many countries should pass stringent and effective environmental laws for protecting the environment. The law enforcers and the judiciary should work hand in hand in making sure the environmental law in place is obeyed and stiff penalties levied on the offenders.

4.3: Area for Future Studies.

Environmental laws are slowly but steadily gaining momentum worldwide. As people continue to realize that environment is as central as the economy they become more conscious and passionate about environmental protection practices. But more research is needed especially in developing countries to enlighten the people on the need for environment protection.
Without environmental protection laws we may end destroying most of the ecosystems through pollution of water, soil and air, desertification, deforestation and these may lead to distinction of important species of plants and animals.

REFERENCE

African Development Bank,(2003) *Integrated Environmental and Social Impact Assessment Guidelines.*

African Development Bank,(2012). *Bank Group Policy on Disclosure and Access to Information*.

Allen, D. T., & Shonnard, D. R. (2001). *Green engineering: environmentally conscious design of chemical processes*. Pearson Education.

Baumol, W. and W.E. Oates (1988), Theory of Environmental Policy, Cambridge University.

Bearden, D. M. (2001). *Environmental laws: summaries of major statutes administered by the environmental protection agency*. DIANE Publishing.

Brunnée, J. (2002). Coping with consent: law-making under multilateral environmental agreements. *Leiden Journal of International Law*, *15*(01), 1-52.

Coase, R. H. (1960). Problem of social cost, the. *JL & econ.*, *3*, 1.

Dave Owen,(2007). *Law, Environmental Dynamism, Reliability*, 37 Envtl. L. 1145 1154–56

Doremus, H., & Tarlock, A. D. (2013). Can the Clean Water Act succeed as an ecosystem protection law. *Geo. Wash. J. Energy & Envtl. L.*, *4*, 46.

El-Fadl, K., & El-Fadel, M. (2004). Comparative assessment of EIA systems in MENA countries: challenges and prospects. *Environmental impact assessment review*, *24*(6), 553-593.

Garrett Hardin, ―The Tragedy of the Commons,‖ *Science* 162, no. 3859 (1968): 1243–48.

Kamau, E. C. (2005). Environmental law and self-management by industries in Kenya. *Journal of Environmental Law*, *17*(2), 229-244.

Oates, W.E., and. Schwab R.M. (1991). The Allocative and Distributive Implications of Local Fiscal Competition. In Competition among States and Local Governments, edited by D.Kenyon and J. Kincaid. Washington, DC: Urban Institute, 127–45.

Oates, W.E., and. Schwab R.M. 1996. The Theory of Regulatory Federalism: The Case of Environmental Management. In The Economics of Environmental Regulation, edited by W. Oates. Cheltenham, U.K.: Elgar, 319–31.

Ogendi, G. M., & Ong'oa, I. M. (2009). Water Policy, Accessibility and Water Ethics in Kenya. *Santa Clara J. Int'l L.*, *7*, 177.

Paul A. Samuelson,(1954) The Pure Theory of Public Expenditure,"*Review of economics and ststistics"* 36: 387-89;

Pigou, A. C. (1912). *Wealth and welfare*. Macmillan and Company, limited.

Press. Coase, R (1960), The Problem of Social Cost, *Journal of Law and Economics*, 3, 1-44. *An Introduction to Game Theory* (Oxford University Press, 2004).

Rechtschaffen, C. (2003). Enforcing the Clean Water Act in the twenty-first century: Harnessing the power of the public spotlight. *Ala. L. Rev.*, *55*, 775.

Shelton, D., & Kiss, A. C. (2005). *Judicial handbook on environmental law*. UNEP/Earthprint.

Tladi, L. 2009. *Unisa exam absence survey report*. Pretoria: Department of Information and Strategic Analysis, University of South Africa.

Wagner, W. E. (2004). Commons ignorance: the failure of environmental law to produce needed information on health and the environment. *Duke Law Journal*, 1619-1745.

Wamicha, W. N., & Mwanje, J. I. (2000). Environmental Management in Kenya.

Winalski, D. (2009). Cleaner Water in China-The Implications of the Amendments to China's Law on the Prevention and Control of Water Pollution. *J. Envtl. L. & Litig.*, *24*, 181.