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How Well Do Environmental Regulations Work in Kenya? : A Case Study of the Thika Highway Improvement Project

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Executive Summary

Kenya's hurried pursuit of infrastructure developments in the last decade has highlighted the need for effective environmental regulation surrounding the approval, construction and operation of new projects. One such project, the Nairobi-Thika Highway Improvement Project (NTHIP), creates fertile ground for investigation into how well Kenya's environmental safeguards work. Transforming the road from Nairobi to Thika town into a super highway is one of Kenya's first large-scale transportation infrastructure projects. Funded by loans from the African Development Bank and the Chinese government, the project began in November 2010 and was completed in November 2012 although the contractors are still liable for another year if problems arise on the highway.

Based on study of the NTHIP process and documents relating to environmental protection, interviews with Kenyan experts in environmental impact assessments, and a review of the current environmental legislation, this report reveals that Kenya's current system of environmental regulation is lacking in a number of key areas. While the country's legislation is fairly comprehensive, creating regulations designed to protect all of the varying ecosystems and covering important sectors like environmental impact assessments and waste, implementation faces a number of very serious problems. The National Environmental Management Authority (NEMA) has primary responsibility for implementing environmental safeguards in Kenya, although many actors have responsibilities including civil society, private consulting firms, development banks which finance infrastructure and other government actors including local government and the court system. Currently, the system suffers from inadequate funding, corruption, a lack of engagement with important community stakeholders, gaps or duplications of regulations, and a misunderstanding by society at-large of the benefits of a sustainable project. These serious issues result in little oversight of development projects with potentially huge environmental impacts.

This work illustrates the need for a different approach to development, an approach that recognizes the real costs of doing business at the expense of the environment, and also recognizes the benefits of implementing proper environmental safeguards. More specifically, this work highlights some of the ways by which Kenyan citizens and institutions can begin to remedy some of the weaknesses in regulation through, among other things, newly created legal avenues and heightened community involvement.

Summary of Recommendations for the Government of Kenya

- 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
- Ensure that both the National Land Commission and The Court for Land and Environment are well funded and staffed by competent bureaucrats and judges
- Appoint committees to streamline regulations, reducing duplicate processes and fees as legislation from the new Constitution is enacted
- Enforce Article 35 of the Constitution by making all key environmental assessment documents and monthly monitoring reports freely available to the public
- Support community groups and government agencies to increase awareness of environmental rights and the benefits of sustainable environment.
- Subsidize legal advice and representation for those who lack the means for legal counsel but whose environmental rights have been harmed

Summary of Recommendations for the African Development Bank

- Ensure that information regarding Bank funded projects is readily available, especially to those directly impacted by the project as directed by its own regulations
- Conduct rigorous environmental assessments when evaluating a project's merits for funding and make these available to the public
- Critically assess the environmental regulatory capacity of beneficiaries of Bank funds and where necessary support its strengthening
- Hold project proponents responsible for implementing environmental mitigation provisions agreed on in the project's Economic and Social Impact Assessment

Summary of Recommendations for Civil Society

- Demand more inclusion in the planning and implementation stages of large infrastructure projects
- Pressure relevant agencies for more information about the effects of proposed projects
- Create associations to represent affected citizen's concerns at key agencies

"*You cannot protect the environment unless you empower people, you inform them, and you help them understand that these resources are their own, that they must protect them*."

Wangari Maathai

Introduction

Proper management of the environment, both in the short- and long-term, is a key part of sustainable urban development. Yet often little attention is paid to how environmental regulations work in practice and what can be done to strengthen them especially in lower-income countries. In such countries environmental regulation is often seen as secondary to other concerns such as economic growth. Yet poor environmental regulation can lead to serious costs in terms of growth, human health and erosion of the natural resource base. This issue is of particular concern in Africa, which is rapidly urbanizing and building infrastructure in an attempt to accommodate rapid urban growth. Based on interviews with local environmental experts and a review of regulations, this study looks at the Kenyan case of environmental regulation and examines how it works (or not) in a major transportation infrastructure project: the Nairobi-Thika Highway Improvement Project (NTHIP).

The Nairobi-Thika Highway Improvement Project, which is transforming the 50.4 km stretch of road between Nairobi and Thika, is one of Kenya's first large-scale infrastructure projects. Funded by loans from the African Development Bank and the Chinese government, the project began in November 2010 following the signing of an agreement between the Government of Kenya and three Chinese construction firms. It was completed in November 2012. The highway serves a highly populated zone of Nairobi, acting as a main artery for various satellite towns and economic hubs along the corridor and encompasses areas of very high potential (social and economic) importance that extend to Central, Eastern and Northern Kenya as well as the neighboring countries to the north. The road constitutes an important section of the 'Great North Road', linking the port of Mombasa and northern Tanzania to inland economic centers.

The recent construction of Kenya's first superhighway is useful as a case study. The Nairobi-Thika Highway Improvement Project can be used to explore how well implementation and enforcement, of environmental regulations are working and the extent of communication and cooperation between the National Environment Management Agency (NEMA) and other lead agencies such as the Kenya National Highways Authority (KeNHA) involved in the construction of the highway. Given the rapid expansion of highway and road infrastructure in the country and region, it is an important case for learning how well environmental regulation is actually working and where it needs to improve.

This paper starts with a brief review of the national institutional and legal frameworks around environmental regulation, touching on the implications of Kenya's new constitution. It identifies gaps and institutional weaknesses that undermine an otherwise robust legal framework. Next, it looks at the African Development Bank guidelines that exist around construction of projects like NTHIP and how this framework interacts with national regulation. Finally, this paper examines whether or not this overall system of environmental regulation is working in the case of NTHIP and suggests a few recommendations for improving environmental regulations and outcomes.

Environmental Regulation: Strengths and Weaknesses

Environmental Regulations

Kenya's legal and institutional framework is fairly robust and addresses many of the most important challenges facing environmental management in a modern state. The current legislation is quite comprehensive, although the lack of air quality regulations is one gap[2]. Despite this gap, the National Environmental Management Authority (NEMA), along with other lead agencies like the Kenya Wildlife Service, Kenya Parks Service, or the Water Regulation Management Authority, have the legislative tools they need to adequately protect and conserve the environment of Kenya, ensuring a clean and healthy environment for all citizens. Nevertheless, a clean and healthy environment has not been secured for all Kenyans. The biggest obstacles to this realization lay in the implementation and enforcement of existing laws and a lack of cooperation between ministries within the Government of Kenya (GoK).

Kenya's current environmental regulatory regime originates from Parliament's passage of the Environmental Management and Co-ordination Act (EMCA) of 1999. Before the passage of EMCA, which aims to address the whole gamut of environmental regulatory issues facing a modern state, Kenya lacked comprehensive environmental regulation legislation. The EMCA of 1999 is expansive, but its most important contribution to the governance of environmental regulations is the creation of the National Environmental Management Authority (NEMA) (EMCA, 1999 part II § 7).

NEMA is charged with enforcing EMCA's provisions as well as the subsidiary legislation that has been passed over the last decade. The subsidiary legislation includes water quality, waste management, controlled substances, biodiversity, wetland, river and seashore, and environmental impact assessment (EIA) regulations. Most of the provisions contained in EMCA, as well as the subsidiary legislation, are intended to provide regulations for the usage and type of allowable activity in the different ecosystems and habitats of Kenya. Thus, NEMA's main task is to review and grant licenses to proponents that plan to change land-use. To complete this task, EMCA grants NEMA the power to compel any authority or ministry to comply with existing environmental regulations. NEMA's average annual budget is about 560 million KSh (approximately $6.6 million) (Opondo 2012).[3] Much of the funding comes from licensing fees[4], while the remainder is made up of funding from the Government of Kenya (GoK).[5]

Weaknesses: Lead Expert Relationship with Project Proponent

One of the weakest points of current regulations in Kenya is the relationship between the lead expert conducting the EIA study and the proponent of the project being studied. As stipulated by EMCA, 1999 and the subsidiary 2003 EIA regulations, the proponent of the project is required to employ a NEMA-licensed lead expert to conduct the EIA study on the proponent's behalf. That

[2] Yet air quality is a very serious problem in urban areas (Kinney et al 2011).
[3] 1USD = 83.5Ksh (Oanda.com as of September 25, 2012)
[4] Licensing fees are assessed when the application for a license is submitted to NEMA.
[5] For a more comprehensive review of EMCA and its subsidiary legislation see the attached appendix.

relationship has the potential to create a situation in which the lead expert has an economic incentive to write an EIA report that minimizes the environmental impact of the proposed project. In other words, it is in the best economic interest of the proponent to be able to carry out his or her project as easily as possible, meaning that an EIA that points out major environmental impacts would require the proponent to either redesign the project, implement comprehensive mitigation strategies, or scrap the project all together. Any of these options would be a major economic setback to the project. The lead expert, who is effectively[6] employed by the proponent, can be pressured by the economic relationship to return an EIA study that seeks to increase the cost of the project by as little as possible, or face non-payment by the proponent.

The existence of a potentially coercive relationship between a project proponent and a lead expert was acknowledged by two separate conversations with a current and a former NEMA licensed lead expert. Both the former lead expert, and the current lead expert confirmed that because full payment was only delivered to them once the proponent approved the EIA study, they felt pressured to downplay some of the environmental impacts that a project would have or face non-payment.

Apart from the potentially coercive relationship between the proponent and the lead expert, lead experts themselves cut corners. One expert remarked that lead experts at his old firm would create an EIA template for others to fill out so actual onsite measurements would not have to be taken[7], and information about one project could just be copied into the template and pass for information about a new project. This practice even extended to comments from the public. Sometimes the lead expert would just ask his or her colleagues in his or her office to fill out the public comments section of the EIA, singing the new project's praises. A conversation with a NEMA employee familiar with EIA review confirmed the practice. He noted that anyone caught doing this would lose his or her lead expert license. The practice, he said, was noticed because some of the people preparing the EIA were careless and did not make the appropriate changes to the copied material. Therefore, it was easy to tell that the material was not meant for that specific development. Aside from catching obvious mistakes when text was illegitimately copied from one report to another, there are no other mechanisms to catch lead experts who are able to artfully disguise the copied material.

The Nairobi Thika Highway Improvement Project Environmental Impact Assessment

It is impossible to tell if the lead expert, Harrison Ngirigacha of AquaClean Services[8], the lead expert for the NTHIP downplayed some of the environmental impacts of the road in the EIA because the report lacks baseline data for water quality, water flow rates and volume, and the state of soil degradation or contamination. Moreover the EIA study submitted to the African

[6] The term "effectively" is used to note that in some cases the lead expert is employed by a larger consulting firm, which is contracted by the project proponent to conduct the EIA. In that situation the lead expert is virtually employed by the project proponent because payment to the lead expert's firm is contingent on the recommendations of the EIA.

[7] One scientist interviewed on this issue noted that some experts use his laboratory to make measurements but that his equipment is so obsolete and malfunctioning that the measurements are meaningless. So even if measurements are to be made, in some instances the scientific infrastructure does not allow for good measurements.

[8] AquaClean Services was employed as an independent contractor by New Delhi-based Consulting Engineering to conduct the EIA for the NTHIP.

Development Bank has not been made public, precluding comparison between the EIA submitted to the Ministry of Roads and the African Development Bank.

A close study of the EIA submitted to the Ministry of Roads (MOR) reveals that the lead expert did highlight the possible negative environmental impacts that a major road-building project would have and proposed mitigation measures (CES Consulting et al 60-63). Nevertheless the mitigation measures lack particularity. For example, some of the proposed preventative measures for ensuring water quality include "control[ing] waste into drains or streams," and "Provid[ing] appropriate waste handling facilities at camp sites (*Ibid*., 60). It is undeniable that these measures must be implemented to ensure high water quality standards, but they are meaningless without more information on how the mitigation measures will be implemented, or exactly what technology will be used to realize the mitigation measures. Similarly some of the proposed preventative measures for waste management include "characteriz[ing] project waste types," and "Assess[ing] options for waste reduction and management (*Ibid*., 62). Again, one can see that these are important mitigation measures, but the "how" and the "what" are missing. An independent study by the University of Nairobi noted that control of waste into streams was not necessarily occurring and also that water quality was being affected at some sites (University of Nairobi 2013).

The particulars of "how" and the "what" should be outlined before the project begins or else it is impossible for policy makers, stakeholders, and NEMA to adequately understand the environmental impacts that will accompany such a large project. When the specific mitigation techniques are missing from an EIA, monitoring can also be stifled since not even the project proponent knows exactly what mitigations measures should be undertaken. It is therefore impossible for monitoring agencies to hold project proponents accountable because the project proponent has only committed to non-specific goals. Furthermore, without baseline data it is almost impossible to conduct effective monitoring to ensure those mitigation measures are effective. Indeed, the new highway traverses 15 waterways, yet the EIA does not contain data regarding the flow rate, or quality of the water before construction began. Moreover, during construction explosives were used to blast rock, but vibration, and structural integrity measurements were not taken to establish a baseline for vibration, or to determine if the surrounding structures could bear the shock before construction began. Lastly, the mitigation plans for noise and vibrations caused by the construction were conspicuously missing.

NEMA EIA Review and Monitoring

Under EMCA, 1999 and the subsidiary 2003 regulations, NEMA is required to review the EIA report and solicit comments from the relevant lead agencies and the public. Nonetheless, NEMA's review process faces many challenges that could allow proponents of ill-prepared reports to get EIA licenses. Some lead experts interviewed further explained that the review process can be easily derailed by corruption. Part of the NEMA review process includes sending the local District Environmental Officer (DEO) (employed by NEMA) out to the proposed

project site to confirm that the information in the EIA is correct; however, small bribes or just a lunch can often sway the DEO to give a favorable report to NEMA.[9]

EMCA requires NEMA to report to the lead agencies that would be affected by the project, creating a check on the DEO's work. It is sometimes the case, however, that NEMA does not distribute an EIA to lead agencies for comment, thus excluding the lead agency from contributing valuable input (*Management Audit Report for the National Environmental Management Agency*, 43). However, a project proponent will sometimes seek out a lead expert who is well connected to the agencies likely to be affected by his or her project. The well-connected lead expert then visits the lead agencies asking them not to comment negatively on the EIA report. Sometimes money changes hands. Other times the transaction is based on business friendship.

Public comments constitute the final check on the accuracy of the EIA report. The EMCA EIA Regulations of 2003 require NEMA to solicit the comments of the public via newspaper and radio advertisements. NEMA may also call a public hearing to address the concerns of affected citizens. The advertisement methods called for by the EMCA regulations will be shown, in a subsequent section, to be ineffective at engaging the most affected members of the public and the community organizations that represent them.

Given these problems, it is possible that an EIA project report can weave its way through the NEMA review process without much critical review. In fact, even when lead agencies are involved, NEMA can simply ignore their comments (*Ibid*. 43). A 2010 study conducted by the Efficiency Monitoring Unit of the Office of the Prime Minister examined the EIA license issued for the Silver Crest Limited, a building project in the Marine Park in Mombasa (*Ibid.*) The study found that the license was issued in complete disregard of objections from the Kenya Wildlife Services – the agency in charge of the marine park – which, strongly urged NEMA to deny the license (*Ibid.*). The study also examined the EIA license for The Cobra Corner in the Mara Triangle (*Ibid.*). It found that the director general of NEMA, Dr. Muusya Mwinzi, unilaterally granted an EIA license without review or consultation with lead agencies. Not only was the EIA license granted without any critical analysis it was granted while there was a moratorium on building projects in the Maasai Mara put in place by the Ministry of Tourism until a general management plan could be designed (*Ibid.*).

It is important to note that NEMA's review process is handicapped by a lack of adequate funding for the scale of its mandate. Gerphas Opondo, regional coordinator of the East African Network for Environmental Compliance and Enforcement (EANECE) and former NEMA senior legal counsel, explained that with only $6.6 million for an annual budget, NEMA is stretched so thin that it is unable to carry out its auditing and monitoring mandate (Opondo 2012). It must review, on average, 1600 EIA reports per year (*Ibid.*). For example, each district in Kenya is supposed to have a DEO that helps NEMA audit and monitor development projects. Yet because of lack of

[9] Kenya will begin to implement legislation passed in accordance with the new Constitution that calls for a devolved government. This will transform districts into larger, semi-federal entities. Each will have its own NEMA office and in keeping with the spirit of devolved government, each field office will be given more responsibilities that were previously reserved for the main headquarters. One should note that if NEMA's funding will not adjusted, simply moving responsibilities to the field offices would not necessarily result in better environmental management.

funding some districts have no DEO; and districts that do have a DEO often have no staff to help conduct the scientific testing required to ensure that no damage is being done to the environment, or to confirm the findings submitted in an EIA report (*Ibid*.). Murefu Barasa, a renewable energy consultant, confirmed this. He explained that Nema rarely visits projects in isolated and hard to reach areas due to resource limitations (Barasa 2012). Additionally, smaller projects do not attract the same scrutiny as larger projects because of the assumption that the associated impacts are lesser overall (Barasa 2012). Yet, a small waste disposal site could have a sizeable adverse impact for example. Moreover, the combination of a number of small developments in one area can lead to large impacts, each contributing to a part of the overall harm to the environment (*Ibid*.). In both instances, NEMA's lack of resources creates a situation where projects with possibly huge impacts on the environment are not sufficiently audited or monitored to ensure that they are complying with regulations, or implementing mitigation techniques. In the end monitoring is often left to the proponent of a project with little oversight from NEMA to ensure his or her findings are accurate (*Ibid*.).

The Nairobi-Thika Highway Improvement Project as Case Study

The NTHIP provides ample examples to illustrate the lapse in monitoring that is caused by NEMA's poor funding. For instance, the Environmental and Social Impact Assessment Study Report, filed by the Ministry of Roads and Public Works for the NTHIP, addresses air quality issues that could be created by the construction of the highway, mentioning dust and construction vehicle emissions as harmful to the environment. The same report stipulates that dust-producing surfaces will be kept damp, and construction vehicles will be kept in good order to reduce emissions (CES Consulting et al, 2007, 57). Nevertheless, a study conducted by the University of Nairobi and the Center for Sustainable Urban Development found that there was no attempt to quantify the amount of dust being produced by the construction, nor was there any testing done on the amount of emissions being produced by construction vehicles (University of Nairobi 2013).

An additional study published in May 2012, *Thika Highway Improvement Project: The Social/Community Component of the Analysis of the Thika Highway Improvement Project*, brought attention to damage caused by excessive vibrations. Businesses and residents along the road complained that violent vibrations from construction vehicles and dynamite use caused nearby foundations to crack. Yet, according to the EMCA (Noise and Excessive Vibrations Pollution) (Control) Regulations of 2009, activities that cause excessive vibration are to be strictly monitored so they do not disturb nearby communities. The University of Nairobi study noted that, "the Chief Resident Engineer in charge of the Thika Highway Improvement Project stated in an interview with the study team that the noise pollution and vibrations along the route was reduced because of the use of hydraulic pressure technology to break up rocks instead of blasting them with explosives"(University of Nairobi 2013). Given the evidence uncovered by Social Analysis report the use of hydraulic pressure appears to been used intermittently. The same study revealed that there was no attempt at monitoring the noise and vibration from heavy machinery or the use of explosives (University of Nairobi 2013).

This study, along with the scoping study report referenced above, reveals that land degradation has become a major problem on the land used by the construction team to mine stone and dirt.

These so-called "borrow pits" are indicated by the ESIA report filed with NEMA as places that are to be rehabilitated so that they do no pose an environmental hazard to the surrounding community (CES Consulting et al 2007, 57). It has been reported by both studies however that the borrow pits have yet to be rehabilitated, posing a grave environmental and health hazard to those living near the borrow pits (Kara 16, 2012).[10] A conversation with a Ruiru Municipality employee on June 19, 2012 confirmed that the NTHIP contractors had not yet rehabilitated the borrow pits in that community by that time. Not only do these open pits increase siltation of local waterways because of the lack of vegetation holding the soil in place, they could be prime mosquito breeding grounds during the rainy season when they fill with water.

Inclusion of stakeholder opinions and concerns similarly suffered without proper NEMA oversight. Indeed, both the AfDB and NEMA require that a proponent of a project undertakes a number of measures to ensure that those likely affected by a development project are informed, aware and able to contribute their comments about the project (See: NEMA EIA Regulations, and AfDB ESIA Guidelines below). The same Ruiru Municipality employee expressed frustration with the NTHIP design, saying that it was unfortunate that the NTHIP planners had not reached out to the community when planning the placement of footbridges along the highway. The employee explained that the current placement is not the most efficient because the footbridges were not placed in the areas with the highest pedestrian traffic, causing some pedestrians to take the chance of crossing the eight-lane superhighway. Pedestrians crossing the highway without a footbridge have caused a number of accidents and deaths.[11]

The ESIA submitted by the Ministry of Roads to NEMA and the AfDB describes the public participation efforts as "rapid interviews throughout the route using a questionnaire," (CES Consulting et al, 46, 2007). Sixty-six people along different sections of the road were surveyed (*Ibid*.). One-on-one interviews were conducted with some government officials, and four public meetings were held attended by a total of 246 members of the public (*Ibid*., Annex V). Yet, the NTHIP Social/Community study highlighted the low level of knowledge about the highway. The study conducted six public meetings along the entire length of the highway, which were attended by a total of 197 people. Out of those 197 people, 112 had no idea about the project period and cost (Kara 11, 2012). The cost and period of the project are important pieces of information that should be widely publicized. It is difficult to make an informed decision about a project that is likely to impact the lives of thousands of Kenyans without this information. Henry Ochieng, programs manager at the Kenya Alliance of Resident Associations (Kara), an organization that represents resident associations along the Thika highway, as well as across Kenya, claimed that Kara was never engaged by the Kenya National Highways Authority (KeNHA) to help inform residents along the planned expansion of the Thika highway about how the new highway would affect their community (Ochieng 2012).[12] George Makajuma, a member of the AfDB's team working on the NTHIP, confirmed that the Ministry of Roads and KeNHA were reluctant to engage NGOs and community organizations during the planning phase of the NTHIP because they did not want to attract any scrutiny that would slow down the planning process (Makajuma

[10] The Thika Highway is complete. It opened at the end of 2012. Use of most borrow pits ended sometime ago.
[11] See: Sunday Nation: *Highway of Death*, April 29, 2012.
[12] After the forum on the highway hosted by Kara (see http://www.youtube.com/watch?v=Sr8t-KFVNHw) KeNHA did approach Kara to collaborate on an information event but is unclear whether this will be something the agency will continue to do.

2012). He added that the GoK moved at full speed just to get the project in the ground, and thus was not very concerned with planning best practices and regulations (*Ibid*.).

Due to a combination of factors including poor processes and a government determined to complete the project as quickly as possible, significant lapses in environmental and social regulation enforcement have become apparent. NEMA's inability to adequately review and monitor development projects in Kenya represents one of the gravest threats to the health of the Kenyan environment, especially given the fact that many large-scale infrastructure projects are pending in the country.

A weak NEMA is only part of the problem, however. The proponent of a project, (which includes the GoK in the case of the NTHIP), is ultimately responsible for safeguarding the environment around his or her project. Sometimes project proponents see the EIA process as a mere prerequisite rather than an essential part of planning (Barasa 2012, Opondo 2012). Once the EIA has been completed, proponents often think the process is over and give little attention to the environmental mitigation techniques proposed in the EIA (*Ibid.*). All of the interviewees above thought that educating project proponents about how an EIA can improve the project was needed, since even a vigilant well funded NEMA would not be able to monitor every project being developed every hour of every day (*Ibid.*). In the end, proponents need to see the EIA process as an asset that can boost efficiency and effectiveness throughout the construction and life of the project. Proponents must also recognize that they will face some level of sanction if they do not implement environmental safeguards.

Jurisdiction of Licensing and Competition for Fees

Often NEMA shares, or rather, competes with other government entities for jurisdiction over certain activities. At both the national and local level, duplication of licensing jurisdiction abounds, creating differing standards and confusion; not to mention undermining any wider environmental management plan NEMA might want to employ. "The current arrangements create potential for competition and conflict between different government agencies" (Bird and Kirira, 5). The Regional Coordinator of EANECE (East African Network of Environmental Compliance and Enforcement) gave some examples: water abstraction is licensed by both NEMA (a part of the Ministry of Environment) and the Water Resource Management Authority (a part of the Ministry of Water), effluent discharge is licensed by NEMA and the Ministry of Water, and waste management activities are licensed by NEMA as well as by the Nairobi City Council (Opondo 2012). He added that in each of these cases it is unclear which entity has precedence over the other (*Ibid.*). Moreover, each entity garners a significant portion of its funding from license fees, and so is unwilling to relinquish their legal authority to grant licenses (*Ibid*.).

A study conducted on the licensing process for renewable energy projects in Kenya highlights the duplication of responsibilities of the different ministries and authorities in the GoK bureaucracy. It finds that there is little coordination between authorities when it comes to sharing information regarding an EIA for a project that impacts a number of different sectors (*Inventory of Regulatory Requirements to Start and Operate a Renewable Energy Project in Kenya*, 2011).

The study elaborates on this finding stating, "there is no link between or integration of closely related procedures. For example, NEMA asks for the opinion of [the Water Resource Management Authority], [Kenya Civil Aviation Authority]…before issuing the EIA License; however each of these authorities goes through the full length of their own procedure after the EIA License is issued," (*Ibid.*, 18). Additionally, a 2009 report, which investigated Kenyan public administration of the environment, happened upon similar findings. The report noted that "a conflation of mandates has occurred, such as in the authority given to securing water catchment rehabilitation being allocated to the Ministry of Forestry and Wildlife as well as the Ministry of Water…without clear lines of responsibility" (Bird and Kirira, 7-8, 2009).

The EMCA of 1999 created the National Environmental Council (NEC) as a way to streamline environmental responsibilities and regulations. All of the agencies involved in environmental regulation are represented on the NEC, but the NEC has been ineffective in policing the overlap of responsibilities between agencies. It has not been able to overcome the inter-ministry rivalries that are supported by the fee structure currently in place (Bird and Kirira, 10, 2009). Moreover, many of the permanent secretaries of ministries represented on the NEC never attend its meetings, and can therefore not implement any of the suggestions of the NEC (Bird and Kirira, 10, 2009). Still, some of the tensions between NEMA and other government entities has been diffused by memoranda of understanding (MOU) (Opondo 2012). In some cases ministries have agreed not to enforce regulations in favor of letting NEMA take the lead in order to enhance efficiency and decrease confusion (*Ibid*.). Yet, MOUs do not carry the force of law and derive their power from the goodwill and understanding between the respective ministers. MOUs are not permanent solutions since they can be undone with a change of personnel or even a change of heart. The extreme overlap of responsibilities and fees is not just inefficient; it has the possibility to undermine the authority of NEMA when trying to enforce its own regulations.

African Development Bank Involvement

The African Development Bank (AfDB) is a multilateral development and finance organization with 78 member countries, which include all of the countries of Africa save Libya and Western Sahara, and also includes the United States, Japan, China, and most of Western Europe. The AfDB is a major donor and initiator of large infrastructure projects on the continent. The AfDB's mission is to promote economic and social development in Africa. To do this the Bank provides loans and grants to African governments and private companies. The AfDB is mandated to reduce poverty and promote sustainable development. The AfDB attaches a set of environmental guidelines, along with the funding for the project, which the proponent of a project receiving funding must observe. The AfDB has published a set of environmental social impact assessment (ESIA) guidelines that address the process of conducting an ESIA, including auditing and monitoring provisions (Integrated Environmental And Social Impact Assessment Guidelines 2003). These guidelines are very similar to the EIA regulations set out in EMCA of 1999 and its subsidiary EIA legislation of 2006.

The AfDB's guidelines on ESIA studies are formulated to be a backstop in cases where the borrowing country does not have a robust legal framework to regulate activities that could impact the environment. In countries with a well-defined legal and institutional framework, the AfDB permits the use of such country systems for ESIA studies, which are subsequently

reviewed by the AfDB, to assess the level of completeness of the studies.[13] The Bank's environmental framework is not intended to be a substitute to the national government agency systems. The Bank provides oversight to ensure its investment complies with the required environmental and social requirements. The mandate for day-to-day-monitoring rests with the borrowing country, with the Bank conducting periodic supervision on a quarterly basis. The Bank then receives quarterly reports from the borrower about the results of the monitoring activities (Integrated Environmental And Social Impact Assessment Guidelines).

In addition to the ESIA guidelines the AfDB has created information disclosure guidelines to govern the dissemination of information regarding AfDB funded projects. The Bank released new guidelines in March 2012, which dramatically increased the scope of information to be disclosed to the public. Instead of focusing on categories of information that could be disclosed the Bank has made disclosure the default, creating only a few categories of privileged information (Bank Group Policy on Disclosure and Access to Information, March 2012). None of the excepted categories of information include environmental documents (*Ibid*. § 3.3). Indeed EIAs and ESIAs are used as a sample of what information is to be proactively disclosed (*Ibid*. Annex I). Nonetheless as of May 2013 neither the EIA or the Environmental and Social Management Plan for the Thika Highway Improvement Project have been made available on the AfDB website.

The new guidelines contain a provision for submitting a request directly to the Bank for the desired information (*Ibid*. § 4.4). If that request is denied the Bank has a two level appeals process through which someone requesting information can present his or her case before the Information Disclosure Committee (*Ibid.* §§ 4.5.1-4.5.2). If the requester is dissatisfied with the decision of the Information Disclosure Committee, he or she can lodge an appeal with the Appeals Panel, which will review the decision of the Disclosure Committee (*Ibid*. §§ 4.5.3-4.5.5).

Summary of Key Issues/Problems with Environmental Regulation

- The potentially coercive nature of the proponent/lead expert relationship
- Lack of adequate funding for NEMA
- The ineffective and easily influenced NEMA review process
- Duplication of duties among national and local government entities
- Dependence of agencies, both local and national, on licensing fees
- AfDB's marginalization of environmental concerns in favor of economic or engineering concerns

[13] Since Kenya has a fairly robust regulatory and institutional environmental regime, the AfDB seems to have taken a backseat in regards to on the ground monitoring, leaving that job to NEMA. While the Bank has not yet undertaken a full study of the capabilities of the regulatory agencies in Kenya, at least one member of the environmental department at the Bank felt that the longevity of Kenya's EIA regulations should be counted as a sign that Kenya can police its own development activities.

Way Forward/Recommendations

Effective implementation of environmental regulations is essential to improving and safeguarding a healthy and hospitable environment for all Kenyans to enjoy. Without effective environmental regulation of public and private developments many natural ecosystem services, such as fresh water, clean air, or food production will be degraded requiring more investment and development to replace those services via imperfect human approximations. In fact, "[d]eforestation, coastal modification and agricultural practices in fragile ecosystems all contribute to an increase in the disastrous consequences of what were once simple weather hazards; deforestation of mountain slopes has led to faster run-off resulting in frequent floods in the western part of the country that drains into Lake Victoria" (Bird and Kirira, 3). It is important to note that poorly planned and designed road construction can be a serious driver of ecological destruction (Laurance and Balmford 2013).

The issues raised in this paper point toward a situation that imperils many of the benefits supplied by a healthy environment. Without resolving issues regarding the implementation of environmental regulation, future development will paradoxically only harm those it is meant to help by continuing to degrade the environment on which each and every citizen of Kenya relies. Moreover, business as usual will only hamper economic development, as public actors are required to divert more and more resources toward providing services that a healthy environment can provide for free. Creating an efficient and effective system of regulation that endeavors to engage all of the stakeholders in Kenyan society from individual citizens to businesses to the public sector, will help create developments that minimally impact the environment and benefit its intended users, as well as Kenyan society as a whole.

The Constitution of Kenya (2010) has the ability to provide a path forward. It gives the environment a prominent place in its structure. Article 42 of the fundamental rights and freedoms granted to Kenyan citizens states that the GoK must ensure a clean and healthy environment that benefits both current and future generations. Article 69 outlines specific environmental duties of the GoK, including sustainable exploitation and conservation of the environment and requires that the country maintain a tree cover of at least 10% of the land area of Kenya. The following article, Article 70, gives citizens the right to petition a court for redress if they feel their environmental rights have been infringed. The Constitution of 2010 greatly expands the class of people that have legal standing to bring an action in court to enforce environmental rights (Sang, 2013). Indeed, "the Bill of Rights [extends a] grant to all persons of permissive access to justice, including the generous provision of [legal standing] to all persons" (Sang, 2013, p. 56). Upon petition by a party seeking enforcement of environmental rights Article 70 grants courts the power to prevent any act that harms the environment, or compel someone to do something to improve an already degraded environment. Articles 162.2(b) and 165 give life to a special court for land and environment. The court will hear issues specifically pertaining to land and environmental rights.

In 2011 Parliament passed The Environment and Land Court Act. Section 7 of the Act requires that for a judge to be eligible to be appointed to the Court, he or she must have at least ten years experience as an academic or legal practitioner in matters relating to environment or land. This is, of course, in addition to meeting the general Constitutional requirements of any appointed

judge. The Court will, according to section 13, have original and appellate jurisdiction over disputes relating to, among other things, environmental planning and protection, trade, climate issues, land use planning, and mining minerals. In deciding cases the Court is guided by the principles of sustainable development, which is defined as incorporating the principle of public participation, the principle of inter and intra generational equity and the polluter pays principle (The Environment and Land Court Act, 2011, § 18). As of November 2012 16 judges have been appointed to the Court (*Environment and Land Court Now Goes Full Steam Ahead*, 2012). These judges will be deployed throughout Kenya in order to "de-marginalize areas that have previously been neglected…and to expand access to justice (*Ibid*.).

Related to environmental issues are land use and rights issues. The Constitution of 2010 addresses land issues in Article 60. It stipulates that land should be used in a sustainable and equitable way, and thus ecologically sensitive areas ought to be protected. Article 67 makes way for the creation of the National Land Commission (NLC) to animate the requirements of Article 60. And in May 2012 Parliament passed The National Land Commission Act. The NLC[14] is tasked with "the management and administration of land in accordance with the principles of land policy set out in Article 60 of the Constitution," (The National Land Commission Act, 2012, § 3). According to section 5 of the Act, the Commission's functions are to manage public land, recommend national land policy, advise the GoK on a land registration program, conduct research on land use and natural resources, and monitor and oversee land use planning throughout the country. The same section goes on to stipulate that the NLC ensure that state owned land is managed sustainably for future generations.

Effective dissemination of information is a crucial concern in sound environmental management, which is interwoven throughout all of issues treated in this paper. The EMCA and EIA regulations both contain provisions for engaging the public and other affected stakeholders, but we found that these provisions are not always followed. The Constitution of 2010 enshrines the right of access to information. Article 35 states in part, "every citizen has the right of access to information held by the State; and the State shall publicize any important information affecting the nation" (Constitution of Kenya Article 35 § § (1)(a), (3)). Proper utilization of Article 35 should increase public awareness and foster healthy debate of proposed infrastructure projects and the anticipated environmental impacts of those projects. It should then be possible for Kenyan citizens to use truthful information to weigh the real costs and benefits of large projects like the NTHIP, rather than relying on rumor and speculation.

Apart from the recently enacted legislation mentioned above, none of the other legislation addressed in this paper was passed under the new Constitution. This gives the GoK the chance to review the older environmental legislation and, if necessary, make changes to it to bring it into compliance with the Constitution of 2010. The GoK, via an inter-ministry review is, in fact, reviewing the EMCA legislation, but the results of the review have not yet been made public (Opondo 2012).

[14] Composition of the NLC is as follows: a chairperson and eight other appointed members. A committee headed by the President and consisting of public ministers and private representatives nominates both the chairperson and the other members. All nominees are subject to review and approval by the National Assembly (The National Land Commission Act, 2012, § 7, and First Schedule).

Even though the EMCA legislation might be changed in the future, the new legal and institutional framework created by the Constitution of 2010 and the legislation enacted in its name give Kenya the legal framework and ability to address some of the shortcomings of the existing environmental regulatory regime. The Court for Land and Environment gives Kenyans the ability to bring suit against any actor that is harming their environmental rights. If the Court takes an expansive view of those rights it is possible that a single individual might be able to address a wide range of environmental issues across multiple sectors and geographic ranges. Moreover, the Court has the power to compel the GoK to adequately fund NEMA. If a case is brought before the Court that reveals NEMA's inability to fulfill its mandate, the Court might require the GoK to come up with a better funding plan. The Court may also be able to uncover some of the corruption that leads to environmental degradation. Unfortunately, none of these outcomes are foregone conclusions because they rely on someone bringing suit to secure his or her rights in the first place. Commencing a lawsuit in turn relies on an increased awareness of one's rights and the means to initiate legal action. The good news is the politics of ratification of the Constitution has made more Kenyans aware of their rights (Ochieng 2012). Still more civic education and outreach can and should be done to make every Kenyan fully aware of his or her rights.

The NLC should have a more immediate affect on addressing sustainable planning and land issues. Its mandate gives it an active role in monitoring planning operations and land use throughout Kenya. If the NLC is able to live up to its Constitutional mandate it should be able to tackle some of the environmental issues that have hampered a coordinated approach to planning and land use, which have, in the past, led to misuse of resources and a poor understanding of cumulative effects on the environment. Recent delays in setting up the NLC are thus to be monitored with concern and the same issues that arose with NEMA around adequate resources will be key here too.

Even with the promising new legislation, coordination between agencies and ministries has not been addressed. The duplication of licenses for the same purpose is a problem only the Government of Kenya can address through a review process. Indeed, the Regional Coordinator of EANECE noted that this is one of the projects his organization is working on with the goal of pushing the Government of Kenya to streamline licensing procedures, giving each government actor a well-defined sphere of responsibility and authority (Opondo 2012).

Still, the real challenge will be educating all of the different actors that play a role in environmental regulation on the importance of sustainably using resources and mitigating detrimental effects of development on the environment. NEMA, as well as universities and non-governmental actors, are responsible for educating the public, investors, engineers, construction workers and politicians so they better understand the importance and potential economic and social benefits of safeguarding the environment. These institutions also have a role in fostering public dialogue on environmental issues and creating pressures for proper environmental monitoring. If this can be accomplished, efforts will not be focused on ways to get around regulation, but instead on ways to better safeguard environmental resources that can improve the overall impact of Kenya's infrastructure projects

Summary of Recommendations for the Government of Kenya

- Develop a new funding plan for NEMA that supplies it with adequate resources to fulfill its mandate and removes it from fee competition with other government agencies

- Ensure that both the National Land Commission and The Court for Land and Environment are well funded and staffed by competent bureaucrats and judges

- Appoint committees to streamline regulations, reducing duplicate processes and fees as legislation from the new Constitution is enacted

- Enforce Article 35 of the Constitution by making all key environmental assessment documents and monthly monitoring reports freely available to the public

- Support community groups and government agencies to increase awareness of environmental rights and the benefits of sustainable environment.

- Subsidize legal advice and representation for those who lack the means for legal counsel but whose environmental rights have been harmed

Summary of Recommendations for the African Development Bank

- Ensure that information, as stipulated in AFDB regulations regarding Bank funded projects, is readily available, especially to those directly impacted by the project

- Conduct rigorous environmental assessments when evaluating a project's merits for funding and make these available to the public

- Critically assess the environmental regulatory capacity of beneficiaries of Bank funds and where necessary support its strengthening

- Hold project proponents responsible for implementing environmental mitigation provisions agreed on in the project's Economic and Social Impact Assessment

Summary of Recommendations for Civil Society

- Demand more inclusion in the planning and implementation stages of large infrastructure projects

- Pressure relevant agencies for more information about the effects of proposed projects

- Create associations to represent affected citizen's concerns at non-political agencies

About CSUD

Founded in 2004, CSUD is one of eight Centers of Excellence focused on sustainable transportation and is part of this global network of centers. For the last nine years, CSUD has worked in Nairobi, seeking out partnerships with Nairobi-based think tanks and researchers to deepen its understanding of how to facilitate sustainable urban development, with a key focus on land use, transport and planning institutions within the Nairobi Metropolitan Region (NMR). CSUD's collaborative efforts take a strategic policy network approach. This involves undertaking action research to build networks while at the same time conducting cutting edge research into pressing issues around urbanization. We then use this research and the networks formed to inform policy and practice. This approach has been central to numerous projects, including our involvement in the Nairobi Metropolitan Region spatial concept competition. We invite you to visit our website http://csud.ei.columbia.edu/ and blog Nairobi Planning Innovations: http://nairobiplanninginnovations.com/

About the University of Nairobi, Department of Geography and Environmental Studies

The Department of Geography and Environmental Studies at the University of Nairobi is one of the oldest and largest in all public universities in Kenya. It started as the Department of Geography, Royal Technical College in 1956 but has recently expanded to be the Department of Geography and Environmental Studies. The department offers a wide range of academic courses and programmes leading to Diploma, B.A., BSc, B.Ed, M.A., MSc., M.Ed and PhD degrees. The mission of the department is to be a leading centre of excellence in the pursuit of development, dissemination and preservation of knowledge in Geography and Environmental Studies; to be committed to the values of truth, quality and relevance; and to contribute to socio-economic development at national, regional and international levels. Our vision is to provide dynamic leadership in teaching, research, consultancy and extension services in Geography and Environmental Studies.

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Appendix

The Environmental Management and Co-ordination Act, 1999, and Subsidiary Legislation[15]

A closer inspection of the Environmental Management and Co-ordination Act of 1999 reveals what appears to be a robust piece of regulatory framework. Apart from the creation of NEMA, the Act begins by granting all Kenyans the right to a "clean and healthy environment." It also requires the citizens of Kenya to safeguard the environment [EMCA, 1999, section 3(1)]. The Act further gives anyone who feels he or she has been deprived of a clean and healthy environment the right to petition the High Court (EMCA, 1999 section 3(3)). When reviewing environmental cases, the Court must base its findings on public participation, traditional cultural and social principles, intergenerational equity, international co-operation and, most importantly, the polluter pays principle (EMCA, 1999 § 3(5)).

EMCA Ecosystem Specific Regulations and Ecosystem Specific Subsidiary Legislation

EMCA makes further provisions for the correct management, usage and protection of hilltops, hillsides, mountain areas and forests, biological diversity, biological resources, coastal zones, and the ozone layer. In addition, the Act makes any area deemed an environmentally significant area an area that is subject to NEMA regulations. In each of these cases NEMA is mandated to contact the relevant lead agencies to design guidelines for how to best conserve environmentally significant areas, as well as how to best regulate necessary human activities within these areas. In these guidelines NEMA and the lead agencies are required to tailor the guidelines to the specific needs of each environment or situation. EMCA also requires NEMA to undertake reviews of these areas every two years; and along with the relevant lead agencies, NEMA must also revise the guidelines that govern activities within these areas. Each set of guidelines is expected to conform to the overall sentiment of the Act, guaranteeing a clean and healthy environment for all Kenyans.

With regard to protecting specific ecosystems, Parliament passed a trio of regulatory acts under the EMCA umbrella: the EMCA (Prevention of Pollution in Coastal Zone and Other Segments of the Environment) Regulation of 2003, EMCA (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations of 2006, and EMCA (Wetlands, Riverbanks, Lake Shores and Sea Shore Management) Regulations of 2009.

The coastal zone regulations aim to curb the discharge of pollutants into the coastal waters of Kenya from ship traffic. Ships are prohibited from discharging any pollutant, (especially oil), into Kenyan waters. Ships docked at Kenyan port or terminal are subject to inspection by NEMA to ensure they have not discharged any pollutant into the water, and must obtain a certificate to that effect from a port waste reception facility.

The biodiversity regulations strive to establish protections for endangered and threatened species in Kenya, as well as provide for a process to legally access genetic resources for legitimate purposes. If one plans to engage in an activity that could impact an ecosystem, an exotic species, or natural resources adversely, the regulations require an EIA license issued by NEMA. The regulations further stipulate that NEMA, along with lead agencies, inventory the biological

[15] All legislation can be found at www.kenyalaw.org

diversity of Kenya and monitor this inventory to ensure the conservation of all species. Lastly, the regulations mandate any person who wishes to access genetic resources to apply for a permit from NEMA. This application is then supposed to be shared with lead agencies and the public to solicit comments and concerns before the application is granted or denied.

The wetlands regulations form the last piece of ecosystem specific regulations. Their main purpose is to preserve the health of Kenya's wetlands, while also preventing the contamination and siltation of all natural water sources in Kenya. The regulations mandate that wetlands only be used sustainably, preserving the ecological and social functions of the wetlands. NEMA requires an EIA for any activity expected to have an adverse impact on the wetlands. Sustainable use of wetlands is also supposed to be integrated into national and local land use plans. The Minister of Environment can declare noteworthy wetlands, or wetlands in danger of being damaged, a protected wetland. This designation restricts activities in the particular wetland to research, tourism and restoration. NEMA is further required to inventory all wetlands in Kenya and to monitor those wetlands to ensure they are not being damaged. Finally, wetland use is strictly monitored and reserved mainly for subsistence harvesting of papyrus and medicinal plants, small-scale fishing, and grazing livestock. In such cases or when there is a water emergency, NEMA can authorize a temporary use permit of up to three months for research.,

In regards to water ways, lake shores and sea shores, the regulations focus mainly on reducing siltation of water resources by requiring an EIA for activities that are likely to affect the quality of any water resource with a focus on mitigating siltation. NEMA is also tasked with creating an inventory of degraded lakeshores, riverbanks and sea shores, outlining conservation methods that could include terracing, tree planting, mulching or soil engineering. Lastly, the regulations vest the authority to regulate solid waste and wastewaters in lakeshores, riverbanks and the seashore with local authorities along with advice from NEMA.

EMCA Air, Water, Waste Management, and EIA Regulations and Subsidiary Legislation

The original EMCA legislation of 1999 further tackles the bedrock of environmental management. It creates regulations and standards for air[16] and water quality, waste management, excessive noise and environmental impact assessments. As for air and water quality, if someone pollutes the air or water without a permit or license from NEMA, the Act makes it an offense punishable by jail time and hefty fines. The liable party is also held responsible for cleaning up the pollution. During the licensing process, (for which NEMA charges a fee), NEMA is obligated to engage local authorities, businesses, and lead agencies, as well as to examine the environmental affects of the effluents or emissions, taking into account other licenses already granted within the area.

Water Quality

In 2006, Parliament passed the EMCA (Water Quality) Regulations to offer specificity to the regulations originally laid out in the EMCA of 1999. Like the original EMCA regulations, the 2006 regulations make it illegal to deposit anything into a water resource that will cause it to

[16] While emissions into the atmosphere must be licensed, to date the GoK has not enacted a draft version of air quality standards already in existence on the NEMA website. At this point NEMA has no air quality standards to enforce and thus grants licenses based only on consultation with lead agencies, local authorities and businesses.

become polluted. The new regulation's most important contribution to the legal framework is the water standards it sets forth.[17] These standards play an important role in licensing effluent and abstraction activities. NEMA must license surface water use, abstraction and effluent discharge after review of any proposed activities. The regulations also mandate NEMA to monitor sources of water at least twice every year.

Separate licenses with differing standards are required for industrial use and effluent discharge. The regulations make provisions for effluent discharge into open waterways, discharge into sewage systems, and for operators of sewage systems. The licenses granted by NEMA come with obligations for the license holder to conduct monitoring of the quality and quantity of effluents being discharged into waterways or sewers. NEMA must review the results of the monitoring in order to verify that the license holder is in compliance with water standards.

Agricultural water use is also regulated, with NEMA requiring water standards for water used for irrigation. Regulations mandate a mitigation zone of 50 meters between an irrigated site and any natural body of water. NEMA, along with lead agencies, is authorized to monitor the water quality of water used for irrigation.

The 2006 regulations lastly require NEMA to prepare and maintain an inventory of all natural water bodies in Kenya and develop an environmental management plan for each body of water to control degradation.

Fossil Fuel Emissions

While Kenya has no air quality standards, Parliament passed internal combustion engine emissions standards in 2006. The EMCA (Fossil Fuel Emissions) (Control) Regulations aim to set standards and monitoring practices for any device that emits fossil fuel emissions. They prohibit the use of an internal combustion engine that emits fossil fuel emissions in excess of standards laid out in the first schedule. The regulations also empower environmental inspectors; they have the power to inspect and document the emissions of any internal combustion engine in use, and fine those who are not in compliance. The regulations also limit the use of fuel catalysts, requiring any fuel catalyst to be tested and licensed by NEMA before use in any internal combustion engine.

Waste Management

The 1999 EMCA waste regulations follow the same general pattern as the EMCA water quality regulations. Without a permit, one may not dump hazardous or pollution-causing waste into the environment. If a person is found to have dumped waste without a permit, the liable party is responsible for cleaning the affected areas. The Act also prohibits transportation of hazardous waste or the operation of a waste plant without a license from NEMA.

2006 also saw the passage of the EMCA (Waste Management) Regulations. The regulations seek to provide standards for the transportation and disposal of industrial waste, toxic waste, pesticides, biomedical waste, and radioactive waste. The regulations make it a crime to dispose of waste in any other place but an appropriate waste receptacle. In order to transport any type of

[17] The 2006 regulations do not have siltation standards, a major gap in regulation when considering the possible damage to a waterway when too much sediment is deposited in it.

waste, NEMA must license the vehicle, and it is the responsibility of the waste transporter to ensure that waste is not spilled during transportation. Moreover, a waste disposal site must also secure a license from NEMA and operate in an environmentally sound manner, meaning that an annual audit of disposal activities is to be submitted to NEMA for review. NEMA requires licenses for producing and transporting the types of waste mentioned above, and specified treatment, or disposal is also outlined. For toxic and biomedical wastes, specific labeling must be present when transporting the waste and export of any of this type of waste is tightly controlled and monitored.

Noise and Vibration

Excessive noise and vibration regulations again follow a similar formula as water, and waste management regulations. The exact standards, like water and waste management regulations, are codified in the EMCA (Noise and Excessive Vibration) Regulations of 2009. The 1999 Act, however, prohibits noise and vibration above the standards, which are to be designed by NEMA. The Act also provides for a permit process (three month permit) for noise and vibrations in excess of the NEMA standards.

In 2009, Parliament felt the need to provide specific standards for excessive noise and vibration regulations, which were prohibited in the original EMCA legislation. Parliament therefore passed the EMCA (Noise and Excessive Vibration Pollution) (Control) Regulations. The new regulations prohibit unreasonable and annoying noise and vibrations, depending on time of day and location. The first schedule of the regulations stipulates acceptable noise and vibration levels. Nonetheless, the regulations make standards by which NEMA may issue licenses for excessive noise or vibrations. The regulations create guidelines for a number of noise and vibration sources, including televisions, radios, machinery, hawkers, and industrial undertakings. Each of these sources, or their causing agents, have the right to submit an application to NEMA for a license to emit noise and vibration levels above what is mandated.

EIA Regulations

The EIA specific regulations contained in the 1999 EMCA legislation are the most extensive of all the other management areas covered in the Act.[18] EMCA stipulates that any proponent of any project must submit a project report to NEMA before commencing financing or causing to commence or finance a project. If NEMA determines from the project report that the proposed project will likely have significant environmental impacts the proponent is mandated to complete an EIA at his or her own expense. Under the EIA regulations the EIA is to be conducted only by NEMA licensed lead experts or a licensed firm of experts. The project report, as well as the EIA, must be submitted with the proscribed fees to NEMA. In addition, to become a licensed lead expert, associate expert, or firm of experts, one must submit a significant fee along with the application to NEMA.[19] Once NEMA has received the EIA it will, at the expense of the

[18] *See* EMCA, 1999 sections 58 to 69

[19] The qualifications to become a NEMA licensed expert are as follows: A Doctorate degree or equivalent in any field plus training in environmental impact assessment from a recognized institution, with 3 years experience in environmental impact assessment related activities. A Doctorate, Masters or Bachelors plus 5 years experience in environmental impact assessment related research consultancy or teaching and at least two relevant publications in referred journals. Or, a Masters degree or equivalent in any field plus training in environmental impact assessment from a recognized institution, with 5 years experience in environmental impact assessment related activities. Or, a Bachelors degree or an equivalent in any field plus training in environmental impact assessment from recognized

proponent, publicize a summary of the EIA in the national Gazette and a newspaper that circulates in the area where the project is planned. A summary of the project, the location of the proposed project, a place where the public can inspect the EIA study, and a solicitation of comments on the project are required to be contained in the publications. In addition to public consultation, EMCA gives NEMA the power to solicit comments from lead agencies that will or could be affected by the proposed project.

Throughout the entire EIA process NEMA is authorized to request an additional EIA from the proponent, at his or her expense, to gather as much information as possible; this process ensures accuracy of the EIA. NEMA continues to have this power even while the project is underway. This, however, is only ordered when the project plans have changed considerably, environmental impacts that were not foreseen arise, or the information supplied for the original EIA was false or inaccurate. Once NEMA feels the EIA is adequate and has taken into account the comments and concerns of the relevant lead agencies and the public, it will issue a license. The license permits the proponent of a project to begin work on that project.

Once the project is underway, NEMA is authorized to audit the project to ensure it is operating by the guidelines stipulated by the EIA license; if the proponent of the project is found not to be in conformity with the license, NEMA may revoke the license. In addition to auditing, NEMA is authorized to monitor the environmental impacts of any industry, project or activity. This will inform NEMA whether or not to require an additional EIA.

In 2003, Parliament enacted the EMCA (Impact Assessment and Audit) Regulations. These regulations were put in place to strengthen and focus EIA regulations administered by NEMA. The additional regulations largely echo the EIA regulations in the original EMCA act. The regulations repeat the primacy of a NEMA license for beginning a project. And they again require any proponent of a project to submit a project report and, if thought to be necessary, an EIA to be reviewed by NEMA in order to be granted a license.

Where the new regulations depart from the previous ones is in their specificity of what ought to be included in a project report. The 2003 regulations require, among other things, the nature of the project, the location, the design, the socio-economic impacts, and an environmental management plan. However, the review process of the project report remains the same in the 2003 regulations and the report must be undertaken by a NEMA licensed expert at the proponent's expense. The process for preparing an EIA is also nearly exactly the same in the 2003 regulations as in the 1999 regulations. Yet, just as with the project report, the 2003 EIA regulations provide more specific guidelines. The proponent is compelled to pay special attention to environmental, social, cultural, economic, and legal issues, and to identify the environmental impacts, identify alternatives, and propose mitigation measures, among other information to be included.

The 2003 regulations further broaden the scope of public involvement. While the EIA is being completed, the proponent is responsible for placing posters in public places near the project site,

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institution, with 8 years experience in environmental impact assessment related activities (Impact Assessment and Audit Regulations, 2003, Fourth Schedule).

publishing a notice in a national newspaper for two successive weeks, making a national radio announcement for at least one week, holding at least three public meetings, sending out notices at least one week before the meetings regarding the time and place, and ensuring that the meeting is convenient for affected parties. As in the 1999 regulations, when public comments have been collected and the EIA is submitted to NEMA, NEMA will submit the EIA to the relevant lead agencies, seeking comments. NEMA is further mandated to publish a summary report of the EIA in the Gazette, a national newspaper, and a national radio station for two successive weeks, all at the expense of the proponent. If the comments made by the public warrant a public meeting, one will be held and notice will be publicized at least one week before the meeting in a national newspaper and on a national radio station.

When making a decision to grant a license, NEMA is to consider the validity of the EIA, the comments made by lead agencies and other interested parties, and the reports of the public hearings.[20] If a license is granted, NEMA, as in the 1999 regulations, retains the power to revoke the license and conduct an audit of the proponent's activities. However, the 2003 regulations proscribe that the proponent is responsible for employing a lead expert to conduct a baseline audit to which subsequent audits can be compared. These audits should include the past and present impacts, existing internal control mechanisms to mitigate environmental impact, and the existence of environmental regulation awareness of the managerial and operational staff. Once NEMA receives the audit report, it may order corrective measures for mitigating environmental impacts that are revealed by the report.

Lastly, NEMA, along with lead agencies, are responsible for conducting monitoring of ongoing operations of industry and development projects in order to determine the effects on the environment. If non-compliance with the EIA license is revealed, NEMA is authorized to take action to rectify the activities of the proponent.

African Development Bank Environmental Guidelines

The ESIA guidelines for a Category 1 project[21], a category in which the NTHIP falls because of its large scale and significant environmental impacts, are remarkably similar to regulations required by NEMA for EIA studies. The AfDB guidelines, found in the African Development Bank Integrated Environmental and Social Impact Assessment Guidelines, October 2003, compel the proponent to focus on how the proposed project will help mitigate, improve or address issues surrounding poverty, environment, population, health, gender and participation. Before undertaking an ESIA however, the proponent must conduct a feasibility study and submit terms of reference to the AfDB for approval. After approval, and depending on the scope of the project, an ESIA is required. Like the NEMA EIA regulations, a proponent of an AfDB funded project must retain his or her own independent social and environmental expert to prepare the ESIA, and must engage primary and secondary stakeholders in order to get their input on the project. Primary and secondary stakeholders are described as beneficiaries, affected groups, civil society organizations, and local authorities. The proponent must also compose a summary of the project, which will be posted on the AfDB website. Consultation with stakeholders is required throughout the construction process, and must be reported to the AfDB in the proponent's

[20] NEMA reviews, on average, 1600 EIA studies per year (Opondo).

[21] Category 1 projects are subject to the most environmental scrutiny because they are the largest and most complex projects, and thus will likely have a significant impact on the environment

quarterly reports. Once the AfDB reviews the ESIA, and decides to approve the project for funding, the particulars of the ESIA (mitigation techniques, resettlement plans, monitoring, etc.) are written into the loan documents. The loan documents also contain the process by which the AfDB will carry out monitoring of the project. In order to keep the public informed of the project, a copy of the ESIA will be posted on the AfDB's website, and a copy is made available to the public in an accessible place near the location of the project. A progress report is to be posted on the AfDB website as well.

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