
UNESCO-IHE INSTITUTE FOR WATER EDUCATION



EIA as a tool to support Sustainable Development: a case study of water related development projects in Kenya

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UNESCO-IHE
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**EIA as a tool to support Sustainable Development: a case study of
water related development projects in Kenya**

Master of Science Thesis
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The findings, interpretations and conclusions expressed in this study do neither necessarily reflect the views of the UNESCO-IHE Institute for Water Education, nor of the individual members of the MSc committee, nor of their respective employers.



DEDICATION

This thesis is dedicated to my beloved wife Betty and our two sons Allan and Fortune who together agreed to allow me spend this period of MSc study away from their companion.



ABSTRACT

Environmental impact assessment (EIA) is advocated in principle 17 under Agenda 21 of UNCED held in Rio de Janeiro in 1992 as a method and an appraisal tool for decision-making. Many countries have since embraced and put in place procedures for EIA of projects that are likely to give rise to significant environmental impacts. The overall performance of EIA depends on many factors among them legislation/guidelines, Environmental Impact Statement (EIS) and commitment to implementation of EIA recommendations by stakeholders.

In Kenya, environmental issues got legal status only recently (in 1999). This research is intended to assess the quality of the current EIA guidelines, EIS, implementation of EIA Recommendations and follow up (monitoring) process in Kenya.

To do this four water related development projects were selected against a certain criteria. They all had undergone full EIA. Three of these were at least under construction phase. Lee and Colley review package (1999) was adopted with slight additions to suit Kenyan conditions for this exercise. All the sample projects were assessed for quality of EIS on the basis of modified Lee- Colley package. Only one of the selected projects (Sundu Miriu) was investigated for quality of implementation of EIA recommendations through field observations and interviews.

The research revealed that two legal documents are currently influencing all matters on environment in Kenya: EMCA (1999) and legal notice 101 of 2003. Hitherto, there are no general guidelines on EIA in Kenya. The latter are currently in draft final stage of preparation. The Kenyan EIA procedure is very similar to that of UNEP, 2002 hence incorporates most aspects for EIA best practice.

The findings also showed that most water related EISs are still being conducted by foreigners but in partnership with local consultants. The quality of EISs reviewed was generally satisfactory with some omissions and deficiencies in key areas. The results revealed that EISs tended to show better quality in general description and communication of findings than in impact prediction & analysis and identification of alternatives, mitigation and monitoring. Implementation of EIA recommendations was rated good for Sundu Miriu hydropower project. The latter rating was however, limited to the construction phase only. Operation phase has not commenced yet.

In conclusion, overall quality of EISs is generally satisfactory. They are descriptively stronger and analytically weak. Capacity in most lead agencies is still weak and this is affecting quality of the EIA system. Commitment to implementing EIA recommendations at least up to construction phase is so far good. This was attributed to existence of Environmental Management and Coordination Act (EMCA of 1999) and National Environment and Management Authority (NEMA). There is urgent need to finalise the EIA guidelines. Even though Strategic Environmental Assessment (SEA) is well documented in legal documents on environment, its application has still not taken root. Effort should be made to implement SEA both at national and sectoral levels of development.

Keywords: *EIA, EIA guidelines, EIS, Environmental Management Plan (EMP), SEA and sustainable development.*



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LIST OF ABBREVIATIONS

ADB	- Asian Development Bank
DAC	- Development Assistance Committee
DEC	- District Environment Committee
DFID	- Department for International Development (UK)
EA	- Environmental Assessment
EC	- European Commission
EIA	- Environmental Impact Assessment
EIS	- Environmental Impact Statement
EMCA	- Environmental Management and Coordination Act of 1999
EMP	- Environmental Management Plan
GoK	- Government of Kenya
IEE	- Initial Environment Examination
KWS	- Kenya Wildlife Services
MDGs	- Millennium Development Goals
MEA	- Multilateral Environmental Agreement
MENR	- Ministry of Environment and Natural Resources
MWI	- Ministry of Water and Irrigation
NEAP	- National Environment Action Plan
NEC	- National Environment Council
NEMA	- National Environmental Management Authority
NEPA	- National Environmental Policy Act (USA)
NET	- National Environment Tribunal
NGO	- Non-Governmental Organization
OECD	- Organisation for Economic Cooperation and Development
PCC	- Public Complaints Committee
PEC	- Provincial Environment Committee
SEA	- Strategic Environmental Assessment
UON	- University of Nairobi
UN	- United Nations
UNCED	- United Nations Conference on Environment and Development
UNDP	- United Nations Development Programme
UNEP	- United Nations Environment Programme
WRDPs	- Water Related Development Projects



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GLOSSARY

Environmental control audit systems – means a mechanism or procedure put in place by a proponent or proprietor to determine compliance with environmental standards

Environmental Impact Assessment (EIA) – means a systematic examination conducted to determine whether or not a programme, activity or project would have any adverse impacts on the environment.

Environmental impact statement (EIS) - means the report produced at the end of the EIS study

Environmental impact assessment expert – means an individual or expert or firm of experts registered by the national agency for environment (NEMA) as stipulated in EMCA (1999).

Environmental Management - Includes the protection, conservation and sustainable use of the various elements or components of the environment

Environmental Management Plan (EMP) – means all details of project activities, impacts, mitigation measures, time schedule, costs, responsibilities and the commitments proposed to minimize environmental impacts of activities, including monitoring and environmental audits during implementation and decommissioning phases of a project.

Environmental Monitoring – means the continuous or periodic determination of actual and potential effects of any activity or phenomenon of the environment whether short-term or long term.

Lead Agency – means any government ministry, department, parastatal, state corporation or local authority, in which any law vests functions of control or management of any element of the environment or natural resources.

Mass media – includes publicly exhibited posters, newspapers, radio, television or other media used for public communication

Mitigation measures- include engineering works, technological improvements, management and ways and means of minimizing negative aspects which may include socio-economic and cultural losses suffered by communities and individuals whilst enhancing positive aspects of the project

Natural resources – include resources of air, land, water, animal and plants including their aesthetic qualities

Project – includes any project programme or policy that leads to activities which may have an impact on the environment

Project report – means a summary statement of the likely environmental effects of a proposed development (usually submitted by proponent to environmental agency).

Proponent – means a person proposing or executing a project, programme or an undertaking

Review – a process of checking the adequacy of an EIS to ensure that it meets the legal requirement or set standards and ensure wide acceptance of the environmental impact study findings

Social analysis – means assessing or estimating in advance the social consequences from specific policy actions or project development including social justice and equity, social uncertainty, social cohesion, social networks and interactions, social status and gender desegregation

Strategic Environment Assessment (SEA) – the process of subjecting public policy, programmes and plans to tests for compliance with sound environmental management

Sustainable use – means present use of the environment or natural resources which does not compromise the ability to use the same by future generations or degrade the carrying capacity of the supporting ecosystems

Trans- boundary impacts – impacts originating in a nation but go beyond its borders

Waste – includes any matter prescribed to waste and any matter whether liquid, solid, gaseous or radioactive, which is discharged, emitted or deposited in the environment in such volume, composition or manner likely to cause an alteration of the environment

Water – includes drinking water, river, stream, water course, reservoir, well dam, canal, channel, lake, swamp, open drain, or underground water

1.0 INTRODUCTION

The process known today as Environmental Impact Assessment (EIA) can be traced back to the decades of 50s and 60s of the 20th century. During this period it became increasingly evident that many industries and projects were giving rise to undesirable environmental consequences. In response to these problems, national governments and specialised international organisations expressed the need for a mechanism that would examine environmental consequences of all major projects and plans before their execution (Abaza and Bisset, 2004). Since then various initiatives and efforts have been done to introduce EIA in planning and management of activities. A number of methods and procedures were also made available to countries.

Since the 1972 Stockholm Conference on the Human Environment first focused international attention on environmental degradation, most environmental trends have worsened, despite three decades of political arrangements, high-level pronouncements, public exhortations and over a dozen major multi-lateral environmental agreements (UN Millennium Project 2005).

Nonetheless, there have been some improvements. The Montreal Protocol of 1987 has successfully curbed emissions of ozone-depleting substances, many countries have improved air and water quality and large shares of land ecosystems have been placed under protection. Yet most regions are not on track to halt environmental degradation and some have even experienced dramatic declines in environmental quality despite the existence of tools and policies to attenuate or mitigate direct and indirect drivers of environmental change.

Since the 1980s, the issue of sustainability has been on the political agenda. It has become an overarching goal and frame of reference for conservation and development strategies. The concept of sustainability emphasizes that development must meet human needs without resulting in depletion of natural resources base and unacceptable environmental damages and social consequences. To achieve sustainable development, certain strategies, approaches and tools must be put in place. One such widely accepted instrument is the application of Environmental Impact Assessment (EIA) as an appraisal method and decision making aid according to Agenda 21 principle 17 of the 1992 Rio Declaration on Environment and Development. This principle reinforced further development and promotion of the widest possible use of EIA in national plans. And in 2000, came the eight Millennium Development Goals (MDGs).

The MDGs are the world's targets for dramatically reducing extreme poverty in its many dimensions (income poverty, hunger, disease, exclusion, lack of infrastructure and shelter) by 2015. This has to be done by promoting gender equality, education, health and environmental sustainability. Of these eight goals, the seventh is dedicated to ensuring environmental sustainability.

UN Millennium Project (2005) recommends far reaching actions on realizing MDGs. It recommends "twenty-first century African Green Revolution" aimed at providing impoverished smallholder farmers with soil nutrients and related

technologies, investments aimed at increasing access to transport, information, communications, safe drinking water and sanitation, modern energy, and reliable water for Agriculture with its related enterprises.

Since MDGs emphasize sustainable development, its imperative that environmental sustainability should come high on the agenda at both national and international levels in this century than ever before if we have to realize the ambitious MDGs dream. To do this, appropriate structures, instruments/tools for measuring the quality of our environment need to be put in place.

This calls for sufficient information on existing structures/instruments (EIA Guidelines, EIS) so as to evaluate their strengths and weakness and seek to improve their effectiveness. This is important because no written document can afford to remain static yet be effective in the face of changing societal needs. This is true also with the UNEP guidelines: The EIA guidelines are now undergoing re-orientation so that focus shifts from traditional and conventional style to a 'second generation EIA' tool that is practical and effective for sustainable development (Abaza, 2004).

EIA is a systematic study process used to predict the environmental consequences of a development proposal and to identify measures to avoid or minimize the potential problems. In projects where appraisal was done purely on the basis of technical and economical considerations, experience the world over shows that environmental and social consequences have been more severe. The effectiveness of any EIA depend on a number of factors among them the quality of EIA guidelines, quality of EIA reports coupled with implementation and follow up on the implementation of EIA recommendations.

In Kenya, environmental issues began to receive serious attention in the 1990s. Kenya is host to the United Nations Environment Programme (UNEP) headquarters. As a commitment to the UN documents, Agreements and Protocols on environment, the government recognized the need to protect and reverse environmental degradation by creating a Ministry for Environment and Natural Resources in early 1990s. In 1999, Environmental Management and Coordination Act (EMCA) was enacted into law giving more recognition to environmental matters in the country. The Act became effective on 14th January 2000. Under this legislation, the National Environmental Management Authority (NEMA) was formed to coordinate all matters relating to environment in the country. The challenge today is the implementation of this legislation.

Effective environmental management requires not only good legislation but also commitment to its implementation. Success of any EIA implementation is determined by the level of acceptance by the stakeholders, availability of sufficient environmental information, adequate stakeholder participation coupled with sufficient institutional capacity. These factors are crucial to achieving sustainable development.

According to World Bank (1993), environmental management problems are based on lack of information about environmental conditions and trends especially those less visible to policy-makers and the public; uncertainty about ecological process and their reversibility, the potential costs and benefits of effective environmental

protections, limited administration and financial resources for the environmental protection within government institution.

1.1 Problem statement

Now that Kenya has umbrella legislation on environmental issues in place, the challenge remains with its implementation. Teething problems are bound to arise as the implementation of legislation begins to take root. Two experiences attest to this: Sondu Miriu hydroelectric power project in Nyanza province in western Kenya and Titanium mining project in Kwale district at the coast. These projects generated a lot of hue and cry among the public and especially the affected local communities. NGOs also joined the fray by informing local communities of the potential implications of these projects that were not captured in the Environmental Impact Statements (EIS). A second EIS had to be conducted on the Titanium project by an independent team. It is this latter EIS that carried the day and received acceptance by a majority of the stakeholders before the project got the go ahead from NEMA.

Instances of opposition to projects in Kenya in the form of strikes and demonstrations among other things are a pointer to a problem in the EIA system. Some of these problems have to do with lack of relevant and timely information for appropriate decision-making, inadequate stakeholder involvement and lack of public participation among others. Overall, most of the deficiencies can be traced to quality of EIA guidelines and procedure, quality of EISs, implementation of EIA recommendations and follow up (monitoring). In the absence of any objective review of the EIA process, it is difficult to unearth areas requiring improvement.

1.2 Objectives of the study

The overall objective of this research is to contribute towards better understanding and effective application of EIA process in Kenya as a means to supporting sustainable development. The specific objectives are:

- To assess the current Kenyan EIA guidelines and procedures and to compare them with international guidelines
- To evaluate the quality of EISs of water resource development projects and quality of their implementation
- To make suggestions for improvement of the EIA process where necessary
- Assess Kenya's path to realizing MDG # 7 target 9 in relation to EIA process

1.3 Structure of this study

Chapter one covers introduction under which background information and the current Kenyan situation on environmental matters are outlined. A problem statement and objectives of the study are also discussed.

Chapter two looks at existing literature on environmental issues especially those pertaining to EIA, EIS, review and follow up on EIA recommendations. The approach is by considering global, then developing countries and finally Kenyan perspectives on environment.

Chapter three outlines the approach and methodology used in conducting the study. Chapters four and five present the findings and their discussion respectively.

Finally, section six gives the conclusions and recommendations based on the study. The reference list and the appendices follow this in chapters seven and eight respectively.

2.0 EIA AND SUSTAINABLE DEVELOPMENT

2.1 Environmental impact Assessment (EIA)

Various environmental experts have discussed the concept of EIA and its link with sustainable development. As the concept gained international and national recognition over time, a number of definitions have emerged. A few such perspectives from some authors will be discussed. Many broadly define EIA as a tool used to predict and manage environmental impacts of development actions. Some are more specific.

UNEP (2002) considers EIA a systematic process to identify, predict and evaluate the environmental effects of proposed actions and projects. The immediate aim of EIA being to inform the process of decision making by identifying the potentially significant environmental effects and risks of development proposals. The ultimate aim is to promote sustainable development by ensuring that proposals do not undermine critical resources and ecological functions or well being, lifestyle and livelihood of communities and peoples who depend on them.

Abaza *et al.* (2004) defines EIA as a structured approach for obtaining and evaluating environmental information prior to its use in decision making in development process. Donnelly *et al.* (1998) defines EIA as a process to improve decision-making and to ensure that development options under consideration are environmentally and socially sound and sustainable.

The main advantages of EIA according to Abaza *et al.* (2004) are:

- Improved project design /siting
- More informed decision making (with improved opportunities for public involvement in decision-making)
- More environmentally sensitive decisions
- Increased accountability and transparency during the development process
- Improved integration of projects into their environment and social setting
- Reduced environmental damage
- More effective projects in terms of meeting their financial and or socio-economic objectives
- A positive contribution towards achieving sustainability.

In general, the main elements of a 'typical' EIA process include screening, scoping, assessing, mitigating, reporting, reviewing, decision making, managing and monitoring and public involvement.

2.2 Environmental impact assessment from a global perspective

Environmental impact assessment (EIA) is a process employed to identify and evaluate the probable environmental consequences of certain proposed development actions. The US National Environmental Policy Act (NEPA) established the first formal EIA system on The 1st January 1970. This legislation was implemented

primarily as a political response to such factors as the changing scale and nature of industrial development post world war II, growing public disquiet about the environmental consequences of economic development, and the failure of existing decision making tools (particularly Cost Benefit Analysis) to adequately address these concerns (O’Riordan and Sewell, 1981; Petts, 1999). Despite its brevity and apparent simplicity, not to mention the numerous problems encountered in implementing its goals and aspirations, NEPA was innovative, visionary and radical. Not only did it establish in EIA what could be considered an essentially new form of environmental management, but it also articulated concerns that were formalized some 15 years later in definitions of sustainable development (Saddler, 1996).

EIA procedures have been adopted by more than 100 nations and by numerous bilateral and multilateral aid and funding agencies (Petts, 1999). The rapid internationalisation and institutionalisation of EIA led to NEPA being described as one of the major policy innovations of the 21st century (Bartlett, 1988). It is also viewed as having caused the greatest international impact of any US legislation (Caldwell, 1998). However, the speed at which EIA emerged and spread internationally produced predictable limitations in procedural provisions for and effectiveness of EIA systems in different jurisdiction. Thus, while there is a general consensus that EIA has led to enhanced consideration of environmental factors in decision- making, its achievements appear most favourable when compared with past neglect and failings, rather than when measured against sustainable development goals (Caldwell, 1993).

EIA has been defined as a process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of proposed development activities prior to major decisions and commitments being made. It is an environmental appraisal of the likely effects of a proposed development and it has been internationalised and widely used as a formal procedure in development planning and resource management systems. Mostert (1995) distinguished two objectives of the EIA:

- The immediate objective is to facilitate sound and integrated decision making for proposed development in which environmental considerations are clearly stated
- The secondary objective is directed toward the achievement of environmental protection and sustainable development, among others, improving coordination among participating institutions, fostering better designed and cost-effective development projects, empowering community participation and building local capacity.

The International Association for Impact Assessment (IAIA, 1999) outlines two categories of principles for an EIA process: fourteen basic and ten operative principles. Basic principles apply to all stages of EIA and require that an EIA should be purposive, rigorous, practical, relevant, cost-effective, efficient, focused, adaptive, participative, interdisciplinary, credible, integrated, transparent and systematic.

Operative principles describe how the basic principles should be applied to the main steps and specific activities of the EIA process e.g. screening, scoping etc. They recommend that an EIA should provide for screening, scoping, examination of

alternatives, impact analysis, mitigation and impact management, evaluation of significance, preparation of EIS, review of the EIS, decision making and follow up.

According to IAIA (1999), objectives of any EIA should be:

- To ensure that environmental considerations are explicitly addressed and incorporated into the development decision making process
- To anticipate and avoid, minimize or offset the adverse significant biophysical, social and other relevant effects of development proposals
- To protect the productivity and capacity of natural systems and the ecological processes which maintain their functions and
- To promote development that is sustainable and optimizes resource use and management opportunities.

Sadler (1996) indicates a number of ways in which the EIA process is applied to decision- making based on her international review of environmental assessment system. Majority of countries use the EIA under formal institutional arrangements and which forms the basis for proposal and permit approvals, and the establishment of conditions for implementation. These arrangements typically involve a framework of laws, regulation, procedures and guidelines. The aim is to follow a systematic procedure to ensure that specific proposals having potentially significant effects are identified subject to environmental impact assessment. The EIA provides decision makers with information on the possible impacts of development plans so that correct decisions concerning the approval and implementation of these plans could be made.

It was agreed upon by UNEP teams that developed “the Guide on Good EIA Practice’ (Saddler, 1996) that EIA process consists of three major stages outlined below:

- **Preliminary Assessment-** a process before the compilation and approval of the EIA which involves a screening to establish whether EIA is required and the scoping to identify the key issues and impacts that need to be addressed and prepare terms of reference for EIA.
- **Detailed Assessment-**, a process of the EIS compilation and approval that involves impact analysis to identify, predict and evaluate the potential significant impacts; mitigation to specify measures to prevent, minimize and mitigate the environmental damage; reporting or making of the EIS; EIS review to ensure the report fulfills terms of reference and standards; and decision making for EIS approval or rejection.
- **Follow up-** a process after EIS approval that consists of monitoring to check that actions are in compliance with the terms and conditions; management to address unanticipated impacts; and evaluation of EIS results.

2.3 Environmental issues in developing countries

Developing countries are accepting more responsibility for environmental impacts that result from their development activities and many have developed EIA legislation as a management tool for these impacts in the last two decades. EIA is now practiced in more than 100 countries worldwide (Donnelly *et al.*, 1998). Today, EIA is firmly established in the planning process in many of these countries (Momtaz, 2002). In 1989, the World Bank ruled that EIA should normally be undertaken for major

projects by the borrower country under the Bank's supervision. The United Nations Environment Program (UNEP) also made recommendations to member states regarding the establishment of EIA procedures and established goals and principles for EIA. It subsequently issued guidance on the EIA in developing countries (UNEP, 1988).

By the 1990s, developing countries in Asia came to the forefront in terms of EIA practice in the developing world. Today, EIA is firmly established in the planning process in many of these countries. However, many authors (e.g. Briffett, 1999) suggest that despite the existence of good EIA guidelines and legislation, environmental degradation continues to be a major concern in these countries. EIA have not been able to provide 'environmental sustainability assurance' (ESA) for these countries (Sadler, 1999).

According to Alshuwaikhat (2004), in many Asian countries (e.g., Sri Lanka, Vietnam and Saudi Arabia), environmental assessment, especially EIA, was introduced with insufficient staffing, experience and monitoring, with evaluation inadequacies and without enough baseline data. It seems that a political decision was taken without considering the technical and infrastructure aspects required to carry out assessments smoothly (with proper monitoring and incremental development of the environmental assessment over time). In Asia, many countries give lower priority to environmental assessment, at least at policy level in dealing with poverty alleviation, economic growth and development and sometimes-political stability.

In these countries, the World Bank, Asian Development Bank (ADB) and other international agencies are partly forcing the respective governments to address environmental issues as part of lending and grant- issuing conditions (e.g., Sri Lanka and Bangladesh; see Briffett *et al.*, 2003; Momtaz, 2002). In most of the times, this results in adoption of environmental considerations simply as a political decision without the involvement of any public awareness or participation and even without clear perceptions of environmental assessment by governmental agencies.

According to Momtaz (2002), the general perception is that EIA is conducted only because they are required by the government legislation and donor agencies but not to ensure sustainability of projects or to develop better management plans. In many cases proponents see it as an impediment to the implementation of development projects. It is regarded as a tool to justify projects rather than using it as a means to attain the best decision.

When EIA was first used for development projects in developing countries, it was largely donor driven and conducted by expatriate consultants with little involvement or enthusiasm on the part of the recipient countries (Abaza, 2000). Many developing countries face financial, structural and resource constraints on introducing and instituting EIA arrangements (Abaza, *et al.* 2004). According to the authors, the common realities especially among poorer countries are:

- Limited public involvement in political decision- making process
- Restricted access to 'central' political decision-making process especially for rural/ isolated communities

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- Little awareness of the importance of environmental management and sustainable development amongst government sectors and the public
 - Inadequate institutional and legal framework
 - Weak enforcement of laws and regulations and
 - Poor coordination between agencies at the national level and between national and local levels

They observe that a systematic and long-term commitment by most of the developing countries will be necessary in order to overcome EIA limitations stated above. The process of preparing National Environmental Action plans has been especially influential, particularly in Africa an indication of the need for EIA systems. The positive contribution that EIA has made and will continue to make is well recognized. The challenge is to design new or revised EIA systems that can build on past success and take advantage of the current problems and constraints.

In the last five years, capacity building programmes for this purpose have increased substantially. However, much remains to be done especially in poorer sub-Saharan countries of Africa where EIA systems remain weak and poorly funded (IUCN and World Bank, 1997 cited in Abaza, *et al.*, 2004).

Significant changes need to be made in the current EIA methodology, perception of EIA among government, and the capacities to develop and implement their own environmental assessments. According to Abaza (2000), this is the way to ensure strategic and integral use of EIA as a tool for environmental management and hence sustainable development. He observes that much EIA work focuses on biophysical environment without taking into account relevant socio-economic issues. In so doing, it only looks at only one out of the required three conditions for sustainable development (social, economic and ecological).

Most often, different teams are constituted to conduct separate environmental, social and economic assessments and little effort is made to link the three pieces of work (Abaza, 2000 cited in Arebo 2005). Abaza (2000) emphasizes that the promotion of quality country driven EIAs need to be complemented by implementation of a series of measures:

- Environmental legislation and environmental standards
- Market – based economic instruments
- Use and development of environmental and natural resource valuation methods
- Environmental awareness –raising and capacity building
- Ample opportunities for public participation
- Appropriate institutional arrangements and
- Well-developed and reliable information and data systems.

Bisset (1992 cited in Tiwi, 2004) cites lack of information on environmental and social systems as well as absence of information sharing as some of the problems that hinder effective use of EIA in developing countries. Additionally, he mentions, timing and broad based stakeholder involvement as important ingredients for effective environmental assessment.

World Bank (1993) found that public participation in EIA tended to bring about the following:

- Improve understanding of the potential impacts
- Identify alternative sites or designs and mitigation measures
- Improve environmental and social soundness
- Clarify values and trade offs associated with alternatives
- Identify contentious issues
- Establish transparent procedure for carrying out proposed projects and
- Create accountability and sense of ownership during project implementation

Other relevant EIA studies

A number of researchers have carried out EIA and EIS quality assessments in a number of developing countries. Tiwi (2004) carried out an assessment on 13 EISs of coastal projects in Indonesia. She found out that the reports were of better quality in assessment areas that were based on descriptive methods than those that required rigorous tasks.

Route (1994) cited in Lee (2000) also reviewed the quality of 7 EIA reports in Orissa, India. The quality of the reports was best in general description of project (review area 1) followed by communication of results or reporting (review area 4) and was least satisfactory in identification & evaluation of key impacts (review area 2) and analysis of alternatives, mitigation and monitoring (review area 3).

Mwalyosi and Hughes 1998 (cited in Lee, 2000) also assessed quality of 26 EISs prepared in Tanzania. The quality of the reports was considered best in area 1 followed by area 2 and 3. Presentation of the results is usually poor in Tanzania case according to the researchers.

Arebo (2005) conducted a similar study on 4 EISs in Ethiopia. His findings concur with other researchers described above. The general observation is that the EISs tend to be descriptively strong but analytically weak. Results from my four sample EISs agree with other earlier findings.

2.4 Environmental Impact Assessment (EIA) process in Kenya

2.4.1 Background

Environmental issues in Kenya can be traced back to the mid 1960s. As expected there was less documented information on environmental then than today. Many reasons can help explain this: Kenya had just got her independence from British colonial masters in 1963, trained local human capacity was absent, more pressing issues than environment like education, health and Agriculture for food self sufficiency among other issues were a priority and still are today than environment. Furthermore, the biophysical environment then was almost fairly intact and hence did not warrant much attention. The government however, just two years into self-rule recognized environment aspects in her 1965 African Socialism paper. It stated that

practices that tended to harm rather than to conserve the physical environmental had to be curbed through education and legislation (GoK, 1965).

The 1980s saw increased government commitment to improving environmental impact assessments. The 1979 –1983 Development Plan contained elements of the concept of EIA. However, for a long time there has been lack of legal institutionalisation of formal EIA. Thus these policy considerations have rarely been replicated in practice (P K Mbote, 2003).

Under Kenya’s Environmental Management and Coordination Act (EMCA), the project proponent at her/his own expense undertakes EIA. The EIAs are however, required to be conducted by experts authorized by National Environment Management Authority (NEMA). NEMA is empowered to set up a technical advisory committee to advise it on Environmental Assessments (EAs). Besides, there are also lead agencies that may submit written comments on EAs upon request. These agencies consist of organizations in which the law vests functions of control or management of aspects of the environment. EMCA states that non –compliance with the EIA requirements may give rise to an offence.

EMCA (1999) creates an overhead and all-embracing agency for the management of environment as opposed to hitherto existing legislation that set up sectoral agencies often leading to competition. It also provides for public participation in environmental law. The Act establishes the National Environment Council (NEC); NEMA; the Provincial and District Environment Committees; and the public complaints committee. In all these administrative structures provision is made for public participation.

EMCA provides for the right of every person to a clean and healthy environment. Every body under this act is under obligation to protect and manage the environment. Any person may bring an action in the high court to enforce the right to a clean and healthy environment. Redress may be sought if the right has been violated, is being violated or likely to be violated.

Figure 2.5 shows the institutional framework for EMCA (1999).

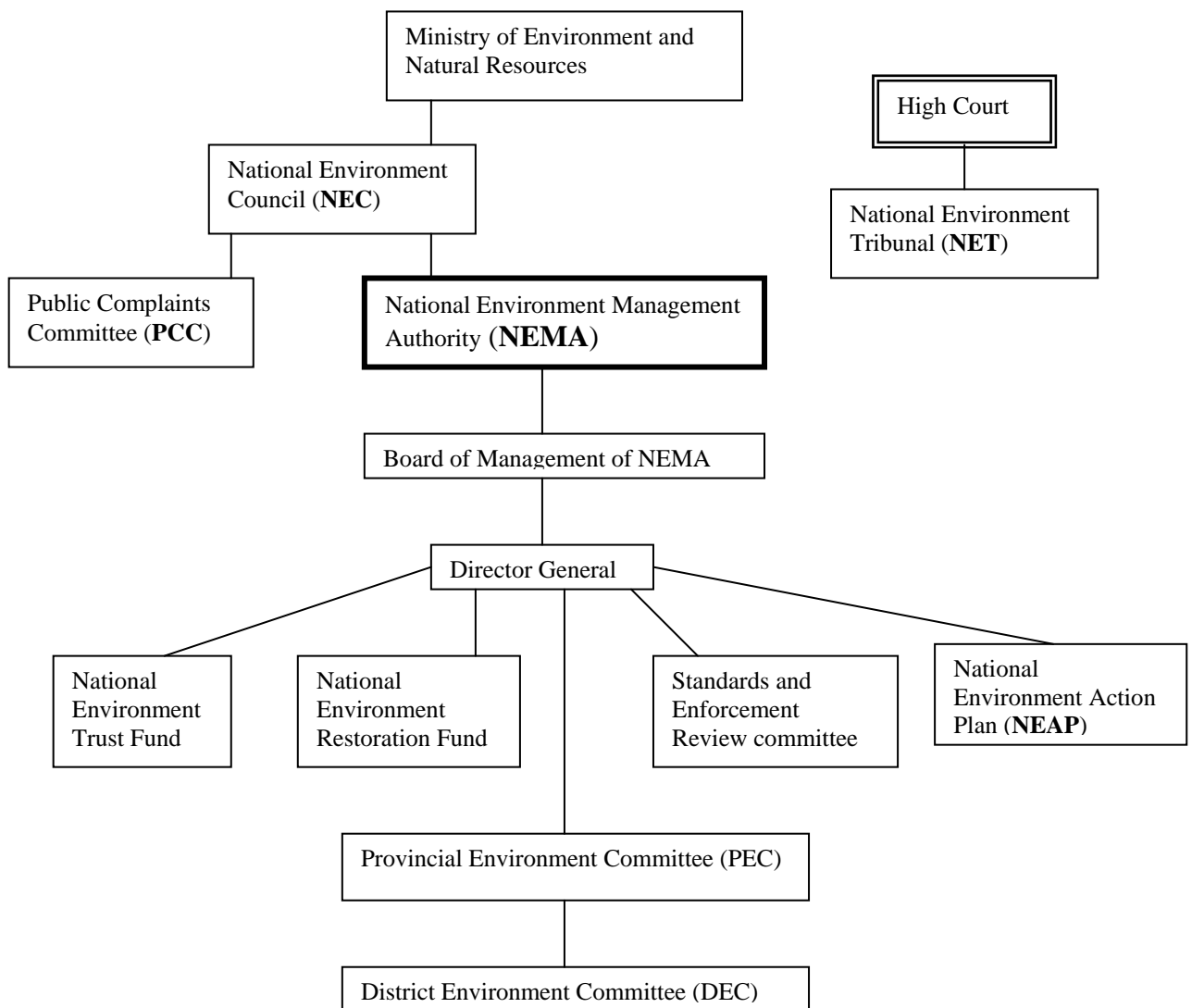


Figure 2.1: Institutional framework for the Environmental Management and Coordination Act (EMCA (1999)). Source: NEMA, Kenya

2.4.2 Administration of the EMCA (1999)

The National Environmental Council (NEC)

The NEC is a top policy making body under the Act charged with the responsibility of formulating policy on all matters relating to environment management in Kenya.

Section 4 of EMCA (1999) establishes this 29-member council chaired by the Minister for Environmental Conservation and with membership from all relevant Government departments as well as a broad range of interest. Those who sit on the council include two representatives of public Universities in Kenya, two representatives of specialized research institutions in Kenya, three representatives of the business community and two representatives of NGOs active in the environmental field. The council regulates its own procedure and may invite any person to attend and participate in its deliberations but the invitee cannot vote.

The functions of this council are to formulate national policies, goals and objectives and the determination of the policies and priorities for environmental protection. Another function is the promotion of cooperation among all the players engaged in environmental protection programmes.

The National Environmental Management Authority (NEMA)

NEMA is the principal Government instrument responsible for the implementation of all policies relating to the environment. It is a corporate body responsible for administration of the Act. A Director General appointed by the President of the republic of Kenya heads it. The board of the Authority has 14 members and this includes at least seven members who are not public servants. It is established in accordance with section 7 of EMCA (1999).

The functions include the coordination of various environmental management activities, initiation of legislative proposals and submission of such proposals to the attorney General. The Authority is also supposed to carry out research, investigations and surveys in the field of environment. In so doing, it will undertake to enhance environmental education and awareness on the need for sound environmental management. In addition, NEMA will advise the Government on regional and international agreements to which Kenya should be a party and issue of an annual report on the state of the environment in Kenya. NEMA is charged with the responsibility of execution of the EIA.

The Public Complaints Committee

The public complaints committee is concerned with investigation of complaints relating to environmental damage and degradation generally. It derives its powers under section 3 of EMCA (1999). It draws its seven-person membership from representatives of the Law Society of Kenya (LSK), the NGO sector and the business community. The findings of this committee's investigation and the accompanied recommendations are made to the NEC.

The National Environment Tribunal

Section 125 of EMCA (1999) establishes a five (5)-member tribunal with a majority having a background in law. The function of this organ is among others to receive, hear and determine petitions of aggrieved groups on matters relating to the Act. In determining the dispute the tribunal will be guided by the principles of sustainable development such as public participation in the development policies, plans and processes for the management of the environment; cultural and social principles traditionally applied by any community in Kenya for natural resources management, principle of international cooperation in management of environmental resources shared by two states, principles of intergenerational and intra-generational equity, the polluter pays principle and the pre-cautionary principle.

Standards and Enforcement Review committee

This committee is established for the Authority (NEMA) and draws its mandate from section 70 of the EMCA (1999). It has a wide representation of interested parties comprising of 34 members. It has broad functions that are well articulated in the Act but all aimed at advising the authority on how to establish criteria and procedures for enhancing environmental quality.

Technical advisory committee on EIA

In accordance with section 61 of the Act, the Authority is mandated to set up this committee whenever it deems it fit to do so. The Terms of reference, rules and procedure for conducting its business whenever this committee is set up will have to be prescribed by the Director General of the Authority (NEMA).

The National Environment Action Plan (NEAP)

EMCA also establishes the National Environmental Action Plan (NEAP) committee that comprises a membership of 45 all drawn from various interests. This cross-sectoral member committee prepares the national environmental action plan every after five years for consideration and adoption by the National Assembly. The structure, composition and functions of this committee are also replicated at the region (Province) and District levels as Provincial and District Environmental Committees respectively.

Provincial Environmental committees (PEC) comprise of: a representative of each local authority within the province, two representatives of farmers or pastoralists, two representatives of NGOs involved in environmental management programmes in the province, a representative of every regional development authority in the province.

The District Environmental Committees (DEC) also include a representative of each local authority within the District, four representatives of farmers, women, youth and pastoralists; two representatives of NGOs involved in environmental management programmes in the District; two representatives of community based organizations involved in environmental management programmes in the district; two representatives of the business community in the district.

The functions of the Provincial and District environmental committees is the proper management of the environment within the province and district respectively and also the regular five year environmental action plans for their respective areas.

2.5 Sustainable Development, EIA and MDGs

Background

Sustainable development is a concept that has and continues to draw controversy among various professionals. With others agreeing to the term and others arguing that the term be replaced with environmental sustainability. In general, the concept of sustainable development has gained increasing international acceptance.

The Brundtland Commission report titled *Our common future* in 1987 defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (UNEP, 2002). This definition has received international recognition in important fora like the UN conference on Environment and Development (UNCED) and the Rio Earth Summit of 1992. UNEP identifies four central and key aspects of sustainable development as follows:

- It is a goal to be reached rather than an initiative or project to be implemented
- Strategies, approaches and tools are needed to help achieve this goal
- It is concerned that future generations do not have reduced access to resources and development options compared to the current generation and
- It focuses on the current and future stocks of natural, social and economical capital and processes/functions which link environmental, social and economic systems and which support any attempts to enhance human welfare via development.

What then is the link between EIA and sustainable development? According to UNEP (1996), by ensuring that development action is adjusted to meet resource and ecological constraints, EIA has become one of the key mechanisms to promoting sustainable development. This it does by identifying gains and losses to the three types of capital: social, economic and biophysical environmental issues. It focuses attention on alternative uses of these capitals and enables decision makers to see clearly the implications of resource use. Through the analysis of alternatives the most appropriate use of a resource may be identified. EIA therefore supports achievement of environmental sustainability. The latter is an enabling condition to help achieve sustainable development.

The consequent passages look at the link between EIA, Sustainable Development and MDGs. Since the time when the concept of sustainable development came into limelight in 1980s, it has remained to date. Many follow up meetings by various UN Conferences were later held in 1990s such as the Earth Summit on Environment and Development and the International Commission on Population and Development (ICPD). The key message from these meetings was that little progress had been made in implementing various sustainable development related action plans. Neither had much progress been made in translating the provisions of the Multilateral Environmental Agreements (MEAs) into national framework laws for implementation. Reports by commission on sustainable development conveyed the same message.

It was partly in response to this situation that OECD/DAC in 1996 proposed a set of seven - time bound quantified targets in the form of International Development Goals (IDGs) as a possible road map to sustainable development (IMF/OECD *et al.*, 2000). In September 2000, these IDGs were transformed into eight MDGs at the Millennium Summit. A set of indicators for each of the MDGs was established to enable tracking of progress towards the MDG target. Essentially, the MDG have become the road map to sustainable development.

The world's concern about the human condition in the 21st century is voiced in the Millennium Declaration. It calls on governments to put in place actions that will lead to noticeable improvements in human condition by 2015. This dream of bringing about significance improvement in human well being by 2015 is expressed in MDGs: a set of quantified and time bound targets for reducing poverty by 2015. Incidentally, most of this poverty problem is in developing countries.

The three core components of sustainable development are social, economical and ecological. Figures 2.1 and 2.2 depict two possible ways in which the three components can be related. Figures 2.1 and 2.2 represent weak and strong sustainability respectively. The former has weak sustainability ethos and takes little cognizance of ecological constraints within which humans, species, markets, policies and development operate. It also assumes that both environment and social problems can be solved with sound economy (Joseph, 2003).

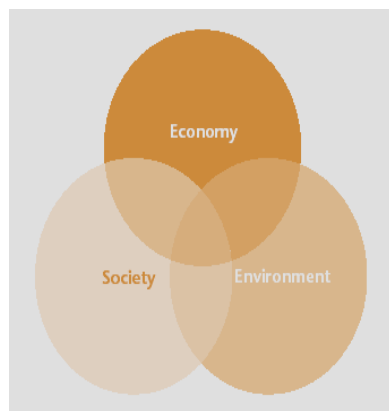


Figure 2.1

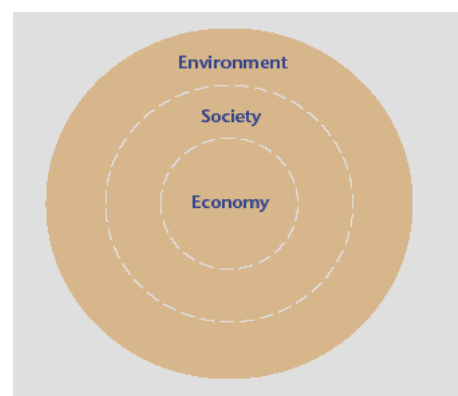


Figure 2.2

Source: Joseph odongo (2003)

On the other hand, figure 2.2 depicts interdependence of the three components of sustainable development. It shows that economic activities are driven by societal needs and expectations whose satisfaction is dependent on biophysical system. Strong sustainability ethos depict economy as subset of society that also pursues livelihood interest besides economic. It takes cognizance of the constraints imposed to social and economic activities by the natural systems of our planet. The underlying conviction is that while economy can expand and contract as well as societal needs and expectations over time, attempts to exceed capacity of the biosphere to provide for and absorb effects of human activities would result in negative backlash.

Accordingly, there is need to maintain in good condition each of the three parts of the system and the system as a whole. Operationally, the strategy would rely on application of Strategic Environmental Assessment (SEA) as a tool rather than conventional EIA in applying MDG as the road map. EIA could, nonetheless be applied on some of the development initiatives identified through SEA. SEA is a tool for including environmental considerations into policies plans and programmes at the earliest stages of decision-making. SEA extends the application of Environmental assessments (EAs) from projects to policies, programmes and plans.

From the foregoing, it would appear that the biosphere is the limiting component of the three that make up sustainable development. This emphasises the importance of paying much attention to MDG goal 7 even as interventions are pursued in all the other goals. MDG #7 is about ensuring environmental sustainability.

Linkage between Environment and other MDGs

The various MDGs are linked intricately with each other. The set of relationship is even more profound between MDGs on poverty and environment. This is largely because poverty in developing countries is multifaceted phenomenon. It embraces marginalisation, deprivation, social exclusion and inequity that MDGs on education, health and environmental sustainability address (DFID, 2001).

The linkage among MDGs is further strengthened by the fact that the prospect for sustained economic growth in poor countries is an important precondition for poverty eradication. This rests on the integrity and productivity of the natural environment and is fundamental to achievement of most MDGs. Table 2.0 below indicates how the rest of the MDGs link with the environment.

Table 2.0: The key links between the environment and the MDGs

Millennium Development Goals	Examples of Links to the Environment
1. Eradicate extreme poverty and hunger	Livelihood strategies and food security of the poor often depend directly on healthy ecosystems and the diversity of goods and ecological services they provide.
2. Achieve universal primary education	Time spent collecting water and fuel wood by children, especially girls, can reduce time at school.
3. Promote gender equality and empower women	Poor women are especially exposed to indoor air pollution and the burden of collecting water and fuel wood, and have unequal access to land and other natural resources.
4. Reduce child mortality	Water-related diseases such as diarrhoea and cholera kill an estimated 3 million people a year in developing countries, the majority of which are children under the age of five.
5. Improve maternal health	Indoor air pollution and carrying heavy loads of water and fuel wood adversely affect women's health and can make women less fit for childbirth and at greater risk of complications during pregnancy.
6. Combat major diseases	Up to one-fifth of the total burden of diseases in developing may be associated with environmental risk factors – and preventive environmental health measures are as important and at times more cost-effective than health treatments
7. Ensure environmental sustainability	Current trends in environmental degradation must be reversed in order to sustain the health and productivity of the world's ecosystem

Source: DFID/EC/UNDP/World Bank (2002)

MDGs in Kenya

Background

In September 2000, Kenya was among the 189 UN countries that adopted MDGs. Exactly two years later (September 2002), Kenya organized the first national stakeholders workshop on MDGs. The main output of this workshop was establishment of a national MDGs task force to spear head the MDG campaign. In July 2003, the task force prepared the first status report on MDGs in Kenya. The report revealed that under the current (then) resource constraints and policy environment, it was unlikely for the country to achieve MDGs even if potential existed. The report also indicated that there was high potential to meet some goals such as goal 2 (Achieve Universal Primary Education and 6 (Combat HIV/AIDS Malaria and other diseases)-(GoK 2003).

For the rest of the goals according to the above report, the government needed to stop the business as usual attitude and embark on a well thought out planning process

aimed at putting the country on track towards realizing the goals. Accordingly, in 2004, the Government undertook measures to align policy with MDGs. It was these measures that led to Kenya being selected by UN secretary General to be one of the four African countries to pilot the implementation of the Millennium project. The other countries are Ghana, Senegal and Ethiopia

Consultants were commissioned by the Kenya government to undertake needs assessments studies on Hunger, education, gender, child health, maternal health, HIV/AIDs and malaria, environment, water, energy and slum improvement. In 2005, a needs assessment and costing report was availed. Consequently, MDGs status report for Kenya was published. The report indicates that the Government is making progress towards meeting the goals. Foremost among such measures is the government directive to mainstream MDGs into national planning and budgeting processes. The government has directed that MDGs be provided for in the specific budgets of ministries, departments and sector and adequate funds allocated to them for implementation. The outcome of this has already been reflected in the budget strategy paper, 2005/6 to 2007/08 in which the MDGs were considered as a major criterion for resource allocation.

MDG # 7: Ensuring environmental sustainability in Kenya

Environment and natural resources provide the base for economic and social development including poverty reduction. However, its importance has not been precisely valued and factored into the Gross Domestic. The sector forms the basis for food production, industrial input and tourism industry. It is also important to note that environment cuts across all the other sectors and contributes directly or indirectly towards achieving the other MDGs. In view of this, interventions in other sectors have a bearing on the achievement of this goal 7, hence the need to mainstream environment into national and sectoral planning.

The greatest threat to Kenyan environment is posed by poverty. Deprived people are a major threat to the environment when the basic needs of adequate food, shelter, and clothing and health services are not met. High levels of poverty negatively impact on the environment through agricultural land declaration leading to reduced productivity and hunger, and pollution of ground water table by both industry and chemical fertilizers. The high and increasing demand for wood fuel poses a major threat to existing forest and other terrestrial ecosystem resources. For example since 1930 Kenya has lost about 65% of its originally standing wood volume (NEMA, 2004). The area under industrial forest plantations has continued to decline over years from 165,000 hectares in 1988 to less than 80,000 in 2003. On the other hand, the total area under protection (gazetted) currently stands at 1.7 million hectares (1.7%) against the recommended level of 10%. The challenge is how to reduce over-reliance on wood fuel among the rural poor with limited access to alternative sources of energy.

To be able to evaluate whether countries are making progress on MDGs, indicators have been established. It is against these indicators that this study will assess Kenya's progress towards achieving MDG # 7 target 9. Target 9 has two components namely, *integrating principles of sustainable development into country policies and programmes* and *to reverse loss of environmental resources*. The indicators given

(21& 22) for target 9 seem to focus on the latter component – reverse loss of environmental resources. Indicators 21 and 22 give an indication of the proportion of land area (country’s surface) covered with forest and land area protected to maintain biological diversity respectively.

The other component of integrating principles of sustainable development into country policies and programmes appears not to have specific indicators for its measurement. This means it is not yet receiving the due attention. This is a weakness because countries can focus on increasing areas under forest cover and that under protection (biodiversity), which is a lot easier, and contend that they are on track with regard to MDG #7. Achieving 100% of indicators on reversing loss of environmental resources component of target 9 and failing to integrate principles of sustainable development into country policies and plans will be a significant failure on MDG #7. Below is a list of some of the challenges highlighted in the needs assessment report of 2005 on target 9 of MDG#7. As can be seen from the list of challenges, focus appears to be on reversing loss of environmental resources.

Challenges

The challenge is how to reduce over-reliance on wood fuel among the rural poor with limited access to alternative sources of energy. *What does it takes to put in place a mechanism that facilitates communities to become self sufficient in household wood fuel energy demand while significantly contributing to the reduction of poverty?*

Despite their major roles in the environment, social and economic development of the nation, forests and other natural resources are currently faced with threats that include:

- I. Illegal encroachment, excision, charcoal burning, illegal cultivation, poaching of timber and frequently fire outbreaks among others.
- II. Repossessing land previously irregularly acquired.
- III. The degradation of natural resources resulting from pollution and poor waste management, water catchments destruction and desertification.
- IV. Poverty also poses enormous challenges to environmental sustainability as the poor rely mostly on natural resources for survival
- V. Ensuring that environmental considerations are integrated in all major national and sectoral policies plans and decision –making processes: implementing SEA.

With the current annual growth of economy at 4.3% which is only about half the desired 7% in order to fund the MDG- related programmes, the government of Kenya has a great challenge to formulate sound social, economic and political policy reforms that can push the economy to grow at the desired level. Kenya estimates an annual expenditure of US\$ 6.1 billion to implement MDG related programmes (GoK, 2005). This calls for serious mobilization of resources and re-organization of the budget to tightly focus MDG programmes. Additionally, realignment of adequate policy and institutional framework will be inevitable.

See findings on status of MDG #7 target 9 in sections 4.4 and 5.4.

2.6 Justification of the Research

A review of past development actions in Kenya just before 2000 indicates that little attention was paid to impacts of these activities on environment. The last two decades – commonly referred to as water decades witnessed a significant development of water resources projects with serious environmental implications.

Projects were approved mainly on the basis of technical and economic feasibility whilst environmental considerations took a back seat. Worse still, environmental issues lacked coordination. Sectoral environmental policies were left to line Ministries to formulate and implement. Environmental management based on sectoral approach as experienced in Kenya hindered integration and often led to competition and conflict among the various departments or institutions involved. Appropriate policy and institutions are important steps towards entrenching EIA in development actions just as Kenya has now done by enacting EMCA (1999) and establishing NEMA. Effective EIA as a tool to support Sustainable Development will demand much more than right legislation and institutions as can be attested to by other existing literature.

The guideline literature has increased greatly in recent years. According to Spooner (1998), despite this increase, few guidelines have been subjected to performance review and critical analysis. Few guidelines have commented on practical and inherent problems associated with guideline quality. Where they have, most have not looked much beyond their technical content (Lawrence, 1997; Brew, 1995).

Spooner observes that a number of deficiencies exist in the quality of the guidelines. One such weak point is that guidelines do not seem to keep pace with the changing ideas on best practice: most guidelines have a tendency to remain static documents. They are not subjected to critical review and revision through regular updating. Exceptions however include the World Bank's sourcebook update series (World bank 1991, 1993-98) and the manual of Environmental Appraisal prepared by the UK Department for International Development (ODA, 1996).

He recommends review of guidelines to identify gaps and have them filled as a way of improving their quality. In cases where guidelines are avoided by those supposed to apply them, there is need to establish the reasons for the circumnavigation and seek to find solutions. It is through such an approach that guidelines will make the real difference and fulfil their intended purposes.

Another area in the EIA process that experts have found to have weaknesses is with EIS. Sadler (1996), Canter and Sadler (1997), Lee *et al.* (1999) and Lee (2000) are among those that have written about review of EISs. They all seem to agree that among the many factors that influence EIA process, quality of EIS is critical. While the approach, methods and criteria among authors may differ, the basic purpose for EIS review is to verify that the document is an adequate assessment and that it is sufficient for the purpose of decision-making (1996).

Lee (2000) also concurs that comparison of quality of EIS reviews varies among countries, developed and developing hence requires caution. He however, identifies the following broad similarities:

- That in both developing and developed countries, unsatisfactory quality of EIS is evident that both review (alternatives & mitigation) and categories areas (identification and evaluation of key impacts) are persistently problematic in both developing and developed countries
- That as experience in carrying out EISs grows, so also is the quality of EIS in all review category areas and hence the overall quality. This is even so whenever there is institutional strengthening and appropriate guidance and training.

From the foregoing, gaps do exist in the EIA system especially in developing countries. Reviews of EIA guidelines, EIS and other related documents are therefore necessary to keep pace with the changing societal needs, changes in technology and best practice. Kenya is not an exception to this.

This research aims to contribute to realization of MDG #7 target 9 - component on integrating principles of sustainable development into country policies and programmes through improvement of EIA as a tool for supporting sustainable development.

2.6.1 Research Assumption

The assumption of this study is that the current EIA process in Kenya is helpful as an appraisal tool and aid to decision-making for project proposals but still needs further improvement in order to guarantee sustainable development of water programmes.

2.6.2 Research questions

- How do the current Kenyan EIA guidelines and procedure compare with international guidelines?
- What is the quality of EIS for water related development projects?
- Are the EIA recommendations implemented and monitored according to plan?
- What measures need to be put in place to improve the EIA process in Kenya?

3.0 METHODOLOGY

3.1 Introduction

This research aimed at assessing the quality of EIA process in Kenya with particular focus on water resources development projects. To do this EIA guidelines and procedure, EIS reports of water development projects and Environmental Management Plans (EMP) were reviewed. The study investigated the following areas:

- Quality of EIA guidelines in Kenya by comparing them with UNEP guidelines
- Quality of EIS reports for selected water related development projects
- Assessment of implementation of recommendations of these EISs
- Assessment of Kenya's path to realizing MDG # 7 target 9

For purposes of this study, where little was known about the perceptions of EIA process, a small number of in- depth interviews and questionnaires had the potential to provide new insights to respondent's perceptions and how these understandings guide practice (Babbie, 2001 cited by Wegner, *et al.*, 2005).

Purposive sampling was used to select respondents. They were selected on the basis of their seniority in terms of role and direct exposure to EMCA (1999) decision-making process, and extensive experience in EIA and or involvement in writing on environmental protection and conservation measures. Most respondents were drawn from those officially registered with NEMA and priority given to those that had wide experience.

Upon selection of the required respondents, the researcher served them with questionnaires. Completed questionnaires were later collected back by the researcher from respondents. This had its advantages: firstly, serving questionnaires personally helped to clarify the objective of the exercise to the respondent at the onset hence demystifying any suspicion.

Secondly, this served to clarify any unclear parts of the questions to the respondent and hence avoided incomplete questionnaires from being returned. Thirdly, this ensured that almost all questionnaires were collected back and hence avoided losing out on most information. Fourthly, it helped get around the problem of unreliable postal system and delays in receiving back the information. Finally, it saved on postal charges hence was wallet friendly.

Table 3.0: Summary of the chosen methodologies

	Component	Activity	Adopted Methodologies
1	EIA Guidelines	Assessing the quality of Kenyan EIA Guidelines	Reviewing the guidelines and comparison with UNEP guidelines
			Assessment through perceptions of Specialists
2	EISs (EIA Reports)	Assessing the quality of EISs for selected water related projects	Reviewing the reports using a selected review package (Lee and Colley 1992)
			Assessment through perceptions of Specialists
3	Implementation of EIA Recommendations	Assessing the quality of implementation and effectiveness of EIA Recommendations of Selected Projects	Reviewing environmental management plans (EMP) & Contract documents
			Assessment through field observations.
			Assessment through officials' and Specialists' perceptions.
			Assessment through interviews with people affected by the project (s) affected people.
4	MDG # 7	Assessing Kenya's path on MDG #7	Review of relevant reports/documents

3.2 Selection of Sample EISs

Kenyan legislation on Environment (EMCA) only came into force in 1999. It is expected that not many water related projects have been developed since especially those requiring full EIA. The range of selection is therefore narrow. Four projects were selected as case studies to facilitate this research. All the assessments under this study were conducted on each these cases. The criteria used to select the four cases are shown in table 3.2 below. For a list of selected projects refer to table 3.3. Box 1 gives briefs about the selected projects.

Table 3.1: Sample projects selection criteria

Criteria	Description
Project type	Different purposes as far as possible: HEP, water etc
EIA preparation/execution	Different consultants/executors
Type of EIA	Full EIA preferred
Date of EIA	EIS produced under EMCA legislation
Time available	2.5 months for data collection
Project location/coverage	Different provinces of Kenya
Funding	Different donors
Project status	At least in Construction phase

3.2.1 Selection of Sample Projects

On the basis of the above criteria (table 3.1) four projects were selected as shown in table 3.2 below. Of the four projects proposed, two are under construction. These are Nyeri Water and Sanitation Rehabilitation project (NYEWASCO) and Sondu Miriu Hydroelectric Power Project. The latter will be investigated to verify implementation of EIA recommendations. Garissa is currently operational while Kisumu water and sanitation project is due to commence construction (2005). For location map of these projects see appendix 1.

Table 3.2: Proposed projects for study

Project Name	Type	Proponent	Status	Type of EIA	Funding
Sondu Miriu	Hydropower (new)	KenGen	Construction phase	Full	JBIC credit
Nyeri water and Sanitation	Water supply and Sewerage (expansion)	NYEWASCO	Construction phase	Full	GTZ credit
Garissa	Water supply (new plus expansion)	MWRM	Operation	Full	GOK
Kisumu water and Sanitation	Water supply and sewerage (new plus expansion)	LVSWSB	EIA issued	Full	AFD

Key:

- NYEWSACO - Nyeri Water and Sanitation Company
- MWRM - Ministry of Water Resources Management
- KenGen - Kenya Electricity Generating Company
- JBIC - Japan Bank for International Cooperation
- GTZ - German Technical Agency for Cooperation
- GOK - Government of Kenya
- AFD - Credit from French Government
- LVSWSB - Lake Victoria Water Services Board

BOX 1: Briefs on Selected Projects

Sondu Miriu (EIS Prepared in 1993)

Location: Nyando District in Nyanza Province

Project activities:

- Diversion from river Sondu -creates 18m high weir
- Headrace tunnel through Nyakach escarpment
- Penstock
- Main powerhouse
- 4.5 km long outlet channel

First EIS prepared in 1991 by a Japanese consultant firm – Nippon Koei Company limited. Focussed on sectors of key impacts - water, health and land use.

Second EIS prepared in 1993- focussed on socio-economic aspects and included first EIS findings.

Design capacity is 60MW. Initially planned for commissioning in 1997 but has now been re-scheduled for 2008.

Funding: Japanese Bank for international development

Status: Construction phase

2. Garissa water project (EIS was prepared in 2000).

Location – Garissa town in North-eastern Province

Source of water: river Tana – largest Perennial river in Kenya: catchment area = 95,950 km² approximately 17% of land area of Kenya. Tana runs 1000km from source to Indian Ocean. Mean flow at abstraction point is 4.5 x 10⁹ m³/annum. Projected water demand in 2020 is 20,000 m³/day.

Population: about 255,000 people (2005)

Project activities

- Construction of new intake, raw water rising main, water treatment works
- Rehabilitation and expansion of distribution networks
- Sinking and equipping of boreholes

Funding: Saudi Fund for Development

Status: Project is in operational stage

3. Nyeri water and sanitation project (EIS prepared in 2004)

Location: Nyeri town in central province - about 150 km from Nairobi (capital city of Kenya)

Water demand: 21,000m³/day, 84.5 km distribution network

Sewerage coverage: 20km sewer lines

Population: 200,000

Project activities: rehabilitation and expansion of water and sewerage infrastructure

Funding: Credit from German government (KfW) –8 million Euros

Status: Construction is ongoing (80% complete)

4. Kisumu water and sanitation project (EIS prepared 2005)

Location: Kisumu town on the shores of lake Victoria

Population; 500,000 people (today)

Project activities: Rehabilitation and expansion of existing water and sanitation infrastructure

Funding: euros 20 million –French Agency for international development

Status: implementation yet to commence (2005)

3.3 Assessment of the quality of Kenyan EIA guidelines

This part of the research sought to explore and establish any major gaps and quality problems in the EIA guidelines. The focus was to assess the current guidelines and perceptions of experts involved in the EIA process about them. The components covered included the EIA procedure, stakeholders' participation, standards and guidelines, and environmental information. The basis of analysis was the level of detail of parameters and indicators within each component. The findings of the EIA process were compared with UNEP guidelines - an international agency on environment.

3.3.1 Review of the Guidelines

I) Review method

A number of review guidelines now exist (e.g. Spooner, 1998; Sadler, 1996; Lee, 2000; Lee *et al.*, 1999; European Commission checklist and the Oxford Brookes methodology) that one can adopt with adjustments for this exercise. The researcher intends to select from among this list one that best suites Kenyan situation.

A checklist of parameters was developed and used to review the above-mentioned components of EIA process. The use of a checklist is not only systematic and objective but also simplifies the review process as the information generated is easily structured and recorded. The environmental information component comprised parameters for baseline environmental components, parameters for environmental impact components, and parameters for impact mitigation and monitoring measures.

II) Selection of guidelines

Two legal documents guiding aspects of environment besides the international Agreements, Conventions and Protocols were studied. These are: the EMCA (1999) and the environmental (Impact Assessment and Audit) regulations, 2003. Guidelines by UNEP (2002) were selected for comparison. UNEP guidelines are appropriate for this purpose because they specifically target developing countries.

III) Procedure for guidelines review

The researcher conducted the review of the guidelines. The adequacy of the Kenyan guidelines was determined based on the level of detail of parameters and indicators. A parameter was indicated as sufficient if it had adequate indicators to describe its quality.

3.3.2 Perceptions of Concerned Specialists

A second source of information for the assessment of the quality of the guidelines was through perceptions of experts involved in EIA process. To simplify this assessment, a list of questions containing key issues to be addressed in the guidelines were developed and distributed to selected experts.

The questionnaire basically consisted of components of EIA mentioned above (i.e. baseline information, key impacts, mitigation, monitoring and public participation). In addition, issues relating to upgrading and application of the guidelines were attempted. A scoring system was used to assess the completeness with which these elements are addressed.

Two specialists from both NEMA and Ministry of Water and Irrigation (MWI) were served with questionnaires. This was done before embarking on guidelines review. The researcher collected them after review of guidelines.

3.4 Assessment of the Quality of EISs of selected projects

EMCA requires the submission of an EIS to NEMA for all projects qualified under the Act. Emphasis is that the EIS should contain sufficient information to enable NEMA decide whether to permit the project and under what conditions the project shall proceed. The documents also provide the minimum contents of an EIS.

3.4.1 EIS review package

1) Background

As already mention earlier, a number of environmental appraisal review packages now exist in literature. A majority of them have been developed and applied in developed world. A few have or can be applied to developing countries after some adjustments.

The Review Package developed by Lee and Colley (1992, cited in Lee *et al*, 1999), called Lee-Colley package, was adopted with some adjustment to the Kenyan EIS reviewing guidelines. According to Lee *et al*. (1999), the package has been used in both UK and other EU countries and also in a number of developing countries and countries in transition (e.g. India, Malaysia, Tanzania, Hungary) to evaluate quality of EISs.

The package comprises of three components including guidance on the use of the package, a list of criteria to be used in EIS review, and a collation sheet on which to record the findings. The guidance illustrates how to use the package. The criteria are arranged in a hierarchical structure as shown in Figure 3.1.

The review starts at the lowest level, i.e. the base of the pyramid, which contains simple criteria relating to specific tasks and procedures. Then, drawing upon these assessments, the reviewer progressively moves upwards from one level to another in the pyramid applying more complex criteria to broader tasks and procedures in the process until the overall assessment of the EIS has been completed.

The results are recorded on a Collation Sheet using a standard list of assessment symbols as described in Table 3.3 below. `Letters' as opposed to numbers' are used as symbols to discourage reviewers from crude aggregation to obtain assessments at higher levels of the pyramid.

Table 3.3: Assessment Symbols in the EIS Review Package

Symbol	Explanation
A	Excellent: Relevant tasks well performed, no important tasks left incomplete.
B	Good: Satisfactory and complete, only minor omissions and inadequacies.
C	Satisfactory: Just satisfactory despite some omissions and/or inadequacies.
D	Unsatisfactory: Just unsatisfactory because of important omissions or inadequacies.
E	Poor: Not satisfactory because of significant omissions or inadequacies.
F	Very poor: Very unsatisfactory, important task(s) poorly done or not attempted.
NA	Not applicable: The Review Topic is not applicable or it is irrelevant in the context of this Statement.

Source: Lee et al. (1999)

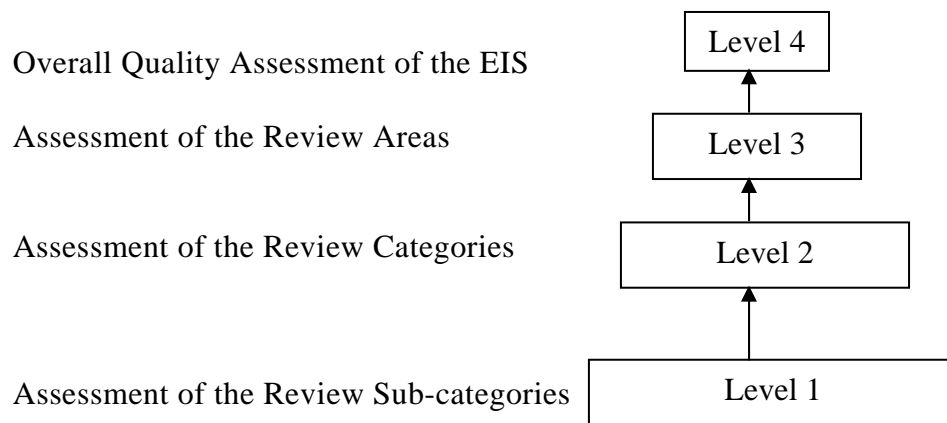


Figure 3.1: The Assessment pyramid

II) Procedure for EISs Review

Lee et al. (1999) and Lee (2000) recommends that two specialists separately review each EIS and their separate findings be compared to reduce subjectivity in the reviewing process. In such a process any significant differences are systematically examined and resolved before the final result are entered in the joint Collation Sheet. Besides recording of the chosen assessment symbols, the main strengths and weaknesses of the assessed EIS may be noted down on the collation Sheet.

The researcher and another expert from an engineering consultancy firm familiar with EIA regulations, methodologies and their practice particularly in water related projects reviewed each EIS and summarise their ratings on a collation sheet (see sample collation sheet under appendix 3A).

3.4.2 Perceptions of EIS Reviewers

This assessment sought to generate information on the perceptions of professionals involved in EISs review on the quality of the EIS of selected projects. To facilitate

this exercise, a questionnaire was developed and distributed to the selected respondents. Four respondents familiar with the EIA process and EIS review were selected. Two of them were from NEMA and the other two from MENR. The questionnaires were distributed before commencement of the EISs review and the completed questionnaires collected after completion of the review.

3.5 Assessment of Implementation of EIA Recommendations

Having an appropriate law/regulations is a necessary foundation for EIA systems, but it does not ensure effective implementation. Implementation depends on many factors like political commitment, financial support, human capacity, media awareness and interest among other issues.

This section of the research focused on the post-approval phase of EIA, i.e. after a permit to develop has been granted and development actually takes place. It aims to assess the environmental management requirements recommended in the EIS and their effectiveness.

A five-point scale, from excellent to very poor, was used to rate key dimensions thought to contribute to good practice. The methodologies to assess degree of implementation of recommendations included:

- Review of Environmental Management Plans (EMPs) and Contract documents
- Interviews with project affected people and project specialists
- Field observations in the project area.

Definitions of the rating categories were:

Excellent: thoroughly and completely performed

Good: minor omissions and deficiencies

Satisfactory: some omissions and deficiencies

Poor: significant omissions and deficiencies

Very poor: fundamental flaws and weaknesses

No opinion: insufficient basis/experience on which to judge

3.5.1 Review of Environmental Management Plans and Contract Documents

Basically an EMP should contain the set of responses to potentially adverse impacts to the environment; requirements for ensuring those responses are made effective and in a timely manner; and the means for meeting those requirements. For effective implementation of the recommendations given in EISs, EMP should specify the impact, mitigation and monitoring measures and responsible institution/agent plus corresponding budget.

The EMP for Sondu Miriu hydroelectric power project was reviewed in order to develop a checklist of predicted impacts, their mitigation and monitoring requirements. This information was later verified through field observations and interviews with relevant people. This project is currently under construction phase.

Because of time, money and language limitation, only Sondu project was considered for this particular investigation.

Contract documents for construction contractor(s) specify, among other issues, technical specifications and construction methodologies to be followed by the contractor(s) during the construction period. A large proportion of environmental and social impacts are associated with project construction activities. It is possible to reduce adverse environmental effects by including environmental protection measures in the legal documents. Reviewing the contract documents of the concerned project was aimed at checking whether environmental management actions were sufficiently incorporated in the documents, so that contractors could understand and take actions.

3.5.2 Interviews with Project Affected People (PAP) and project Specialists

The researcher-conducted interviews with the people affected by Sondu Miriu project as well as specialists involved in follow up or implementation of environmental and social management actions. A total of 114 households had their land directly affected by the project. The extent to which each household land was affected varied from family to family. About 60% received cash compensation but did not relocate. The rest received cash compensation and relocated.

The researcher interviewed 10 households from each of these two categories. The project area has four elected local leaders (Councillors). Two of them were interviewed. One of them sits on the project technical committee. The area administration officer (Chief) and the Area Education Officer (AEO) were also interviewed in connection with the project. All in all 24 people made up the interviewees. There was no information about presence of any local NGO or CBO active in environment related issues in the area.

The issues covered under the interviews with PAP and specialists basically included the sufficiency of the following:

- The EMP in terms of provision for mitigation and monitoring measures, institutional arrangements, implementation schedule, funding, and integration of the plan with the project schedule;
- Environmental management actions incorporated in the bidding and contract documents for contractors;
- Implementation of mitigation measures of significant environmental impacts and their effectiveness;
- Implementation of monitoring measures and their effectiveness to evaluate impacts, performance of mitigation measures, and compliance to agreed conditions;
- Undertaking of the supervision of terms and conditions of approval; environmental auditing; and consultation and participation of the relevant stakeholders prior to and during the implementation of mitigation actions;
- Appropriateness and feasibility of the designed mitigation and monitoring measures;
- Commitment of stakeholders in implementing the environmental management actions assigned to them; and
- Measures that could be taken to improve the implementation and effectiveness of EMPs.

3.5.3 Field Observations

This sought to verify the implementation and effectiveness of the designed mitigation and monitoring measures. For systematic and simplification of the study, a checklist of environmental impacts and their mitigation measures as well as their monitoring measures were prepared from the EIS of Sondu Miriu project. During the field assessment, the checklist was used to verify compliance with the EMP recommendations and effectiveness of the designed mitigation and monitoring measures. Recommendations given in the EIS or EMP were then compared with the actual implementation on the ground to assess their effectiveness.

3.6 Kenya's path to realizing MDG #7 target 9

Target 9 of MDG #7 has two main components. *One is to integrate principles of sustainable development into country policies and plans and the other is to reverse loss of environmental resources.* This research focussed on the former component that directly relates to the core of this study – EIA system. Findings from sections 3.3 – 3.5 of this chapter formed the basis for evaluation of the path currently taken by Kenya Government towards achieving the above target. Additionally, country reports and other published literature by Kenya's international development partners were reviewed. The findings are presented and discussed under sections 4.4 and 5.4 of chapters four and five respectively.

4.0 RESULTS

4.1 The quality of Kenyan EIA guidelines

This section reviewed EIA guidelines of Kenya and compared them with the generic UNEP ones as outlined in UNEP EIA training resource manual (UNEP, 2002). The research however, revealed that Kenya has still not yet fully developed her EIA procedural guidelines. In this regard therefore, any reference to guidelines in this report with respect to Kenya is meant to mean “the general guidelines” as pointed out in either or both of the legal documents on environment currently in use: EMCA (1999) and legal notice 101 of 2003.

The Kenyan EIA process was compared with the generic EIA process by UNEP. The EIA stages in both cases have a similar structure and common stages with only slight differences in arrangement of the stages. According to UNEP, 2002 therefore, application of the EIA procedure in Kenya is a basic standard of good practice. The particular stages of the EIA process as applicable in Kenya and according to UNEP Manual (2002) are shown in figures 4.1.1 and 4.1.2 respectively.

4.1.1 Stages in EIA process: Comparison between Kenya and UNEP

The Kenyan EIA process has six stages: *screening, scoping, impact study & reporting, reviewing (EIA report), decision – making, implementation and follow up* whereas the generic EIA process provided in the UNEP guidelines has nine stages: - *screening, scoping, impact analysis, mitigation & impact management, reporting, reviewing, decision-making, implementation and follow up and public involvement.*

In accordance with Environmental Impact (Assessment and Audit) Regulations of 2003 (EIA & EA), the EIA begins with screening and ends with EMP implementation and monitoring. Environmental Management and Coordination Act (EMCA (1999)) gives a schedule comprising of 15 categories of projects that must undergo EIA. This implies that screening stage is predetermined in the Act. Any other project that does not fall into any of these categories has to undergo scoping to determine whether it should undergo an EIA study or not.

For all the 15 categories of projects mentioned in the Act, the proponent first presents a project report to National Environmental Management Authority (NEMA). This is the result of an Initial Environmental Examination (IEE). After scrutiny of the project report by NEMA, a decision is made. The latter can take one of the three options namely: issue a licence, reject the proposal or conduct further study (EIA study report) -see figure 4.1.1. Should the latter option be taken, it is preceded by scoping.

Under Kenyan EIA process, preparation of project report is equivalent to the UNEP’s initial environmental examination (IEE). Upon submission of project report by proponent to NEMA, the latter circulates copies to relevant interested parties for comments. The comments should be received within 21 days from date of receipt of the reports. Within 30 days of submission of project report by proponent, the

Authority (NEMA) takes a decision. The latter is communicated to the proponent within 45 days of submission of the project report to NEMA.

Upon receiving a project proposal, NEMA has three options: to issue licence with necessary conditions, to reject the proposal altogether or to ask the proponent to undertake an EIA study. Rejection of the proposal also leaves the proponent with the option to appeal against the decision by NEMA to the National Environmental Tribunal (NET). The dissatisfied proponent has to make the appeal within 14 days of receiving the decision.

A proponent who agrees with the above decision on EIA study then proceeds to scoping stage. Here terms of reference are developed by the proponent and approved by the Authority before commencing EIA study. The rest of the stages after submission of EIS are identical for both Kenyan and UNEP EIA processes. Whereas UNEP's training manual considers impact analysis, mitigation & impact management as two separate stages preceding the EIA report, Kenyan EIA process does not.

Public involvement is provided for in the two legal documents currently governing environmental matters in the country. Section 17 of the Environmental (Impact and Assessment and Audit) Regulations, 2003 states that during the process of conducting an EIA study, the proponent shall in consultation with NEMA seek the views of persons who may be affected by the project.

A) Environmental standards and guidelines

Presently, the relevant general guidelines in use are stipulated in legal Notice No. 101 of 2003. The detailed procedural EIA guidelines are currently in final draft stage. The above legal notice however, permits use of sector environmental impact guidelines in addition to the set general guidelines. Since, there are no approved environmental standards, sectoral, national, international standards from international Conventions and treaties are acceptable- so long as their use can be justified in the local setting.

The legal Notice 101, 2003 makes provision for adoption of any known standards (e.g. from International Conventions and treaties) in the absence of Kenyan standards. The chosen standards however, must be specified and reasons for their choice given. This is so because standards or guidelines are set considering local conditions and the socio-economic level of a particular setting.

B) Environmental Information

Three areas were considered under review namely components of environment, environmental impacts and mitigation & monitoring measures as discussed below.

Components of Environment

The current legal notice 101, 2003 that guides EIA lists ecological, social cultural landscape, land use and water as environmental components to consider among others in EIA. However, there is little indication of the parameters and indicators to consider when describing baseline environment.

Environmental Impacts

The environmental (impact assessment and Audit) regulation 2003 provides a schedule of five broad areas believed to have significant environmental impacts and which must be addressed in any EIA report. These are ecological considerations (biological diversity, sustainable use & ecosystem maintenance); social considerations (economic, cultural, health); landscape; Land uses and water (quality, quantity & drainage patrons). Sector guidelines and standards are used to assist during scoping, assessment and review phases of an EIA study.

Mitigation and Monitoring Measures

The EIA and EA Regulations 2003, only mention mitigation under general guidelines for carrying out an EIA study. Environmental monitoring and auditing is however given broad emphasis in this legal document. Agencies responsible for monitoring are respective lead agencies that include government departments in consultation with National Environmental Management Authority (NEMA). A schedule of these lead agencies is outlined in EMCA (1999). The format of the monitoring report and also impact monitoring measures is given.

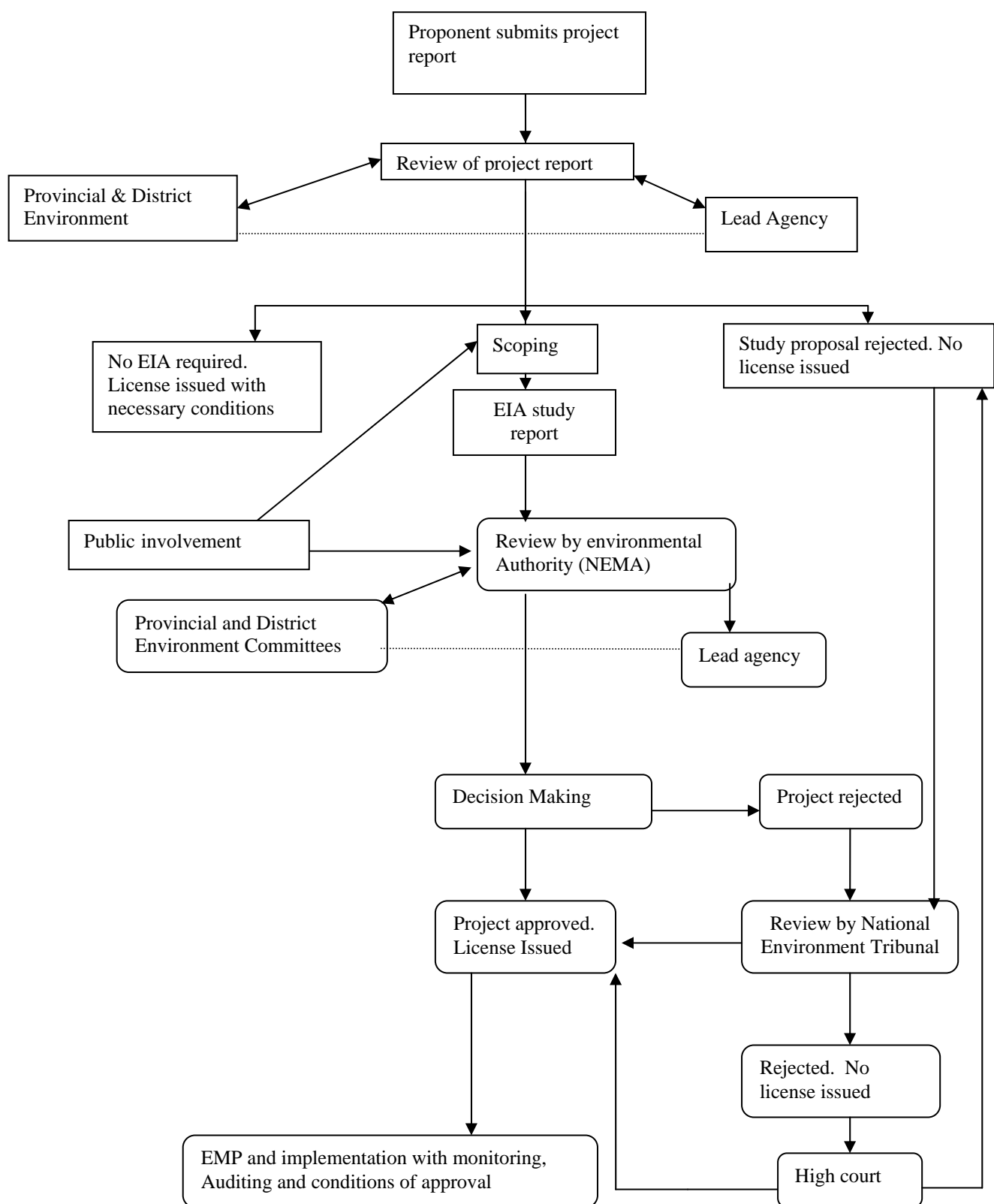


Figure 4.1.1: Structure of EIA process in Kenya. *Source: Adapted from EMCA (1999)*

4.1.2 Perceptions of Specialists on quality of EIA Process in Kenya

In the absence of national procedural EIA guidelines in Kenya, three respondents based their assessment on existing legislation. They were versed with the existing regulations currently in use and their views have taken this into consideration. Their perceptions are therefore limited to their experience with the application/implementation of the EIA process in Kenya.

It should be noted that the respondent from NEMA had less than five years experience whereas those from Kenya Wildlife Services (KWS) and University of Nairobi (UON) had atleast ten years expert experience in the field of environment.

Table 4.1 gives a summary of the rating results as obtained from the various respondents. It should however be noted that the views given in the questionnaires were not representative of the organisation but rather the respondent(s). Figure 4.1.3 is a graphical presentation of the averages of the findings from the three respondents for each stage (all approximated to the nearest rating score). The figure shows that the quality of all the EIA stages is generally good (B) except for monitoring and mitigation that is just satisfactory.

Table 4.1: Specialists (3 no) perception on quality of EIA Process in Kenya

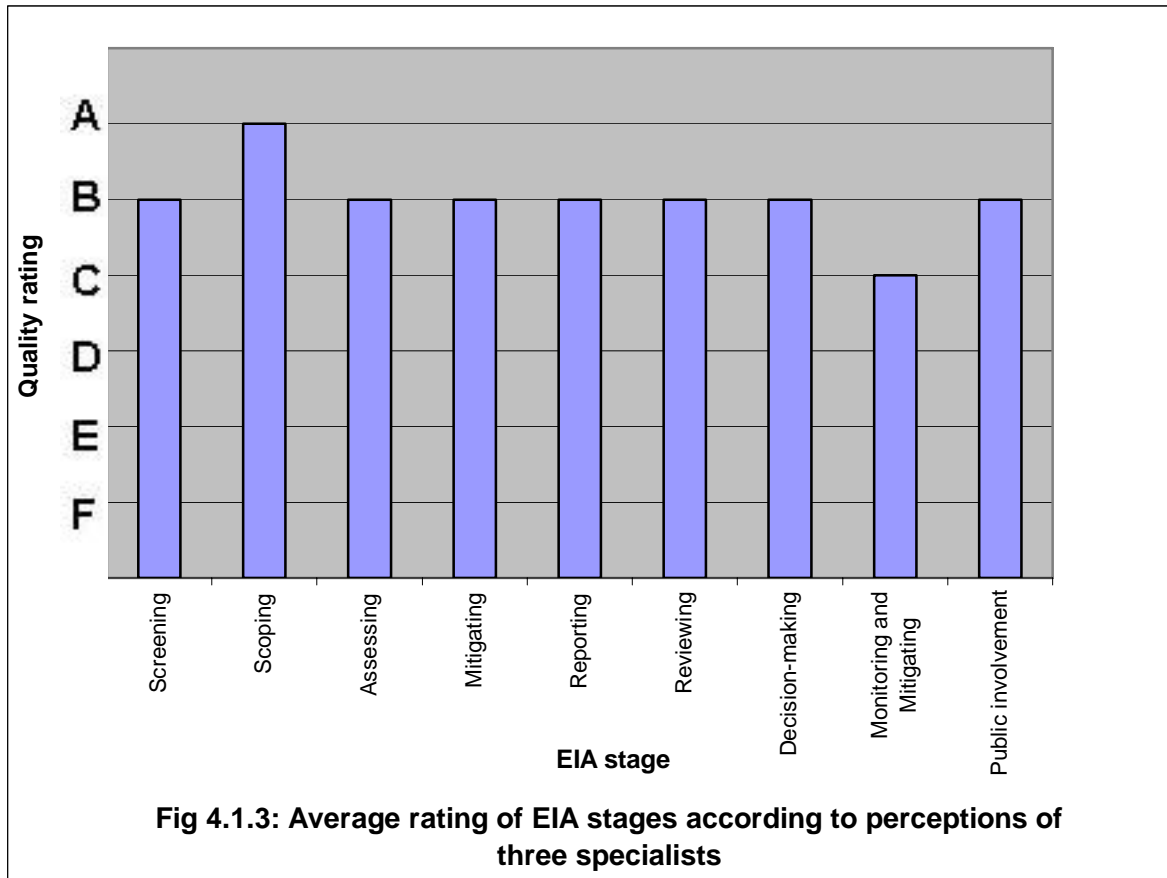
Area of Assessment	Specialist's rating		
	NEMA	KWS	UON
1.Stages in EIA			
Screening	B	A	B
Scoping	A	A	B
Assessing	A	B	C
Mitigating	A	B	C
Reporting	A	B	B
Reviewing	B	B	B
Decision-making	A	B	B
Monitoring and Mitigating	B	C	C
Public involvement	A	B	B
2.Stakeholder Participation	A	B	B
3.Standards and guidelines	A	B	B
4.Environmental information	A	B	C
5.Environmental impact	B	C	C
6.Environmental mitigation	A	B	C
7.Environmental monitoring	A	B	C
8.Updating of guidelines	B	C	C
9.Application of guidelines	B	B	B

Key:

A, B, C: acceptable level of quality- at least satisfactory

D, E, and F: unacceptable level of quality- unsatisfactory

For explanation of the rating symbols see table 3.4 in chapter three



In addition to the structured questions presented in the questionnaire form, respondents were also asked to give their comments on some more open and general questions. These open questions were included as an attachment to the main questionnaire (see appendix 2). A summary of their comments is described below.

Strengths

- Existence of legal framework (EMCA and EIA& Audit regulations) has significantly contributed to enhancement of environmental concerns in the country in addition to aiding stakeholders in practice.
- Existence of enforcement Authority- NEMA has and will greatly contribute to good environmental management. The capacity of NEMA should however be enhanced to cope with increasing demand for attention
- NEMA has recognized the importance of having national guidelines and has engaged a consultant to undertake their preparation. They are currently (2005) in final draft form awaiting stakeholder approval before being made official. This they said will greatly improve the quality of EIA and ease the work of EIS reviewers and practitioners a like.

Weaknesses

- National guidelines are yet to be made available. This makes it difficult for inexperienced experts to produce quality EISs and also the review team to carryout comprehensive assessment of the same.

- There is still inadequate capacity within lead agencies to effectively participate in performing their functions as outlined in the Act –EMCA (1999) especially the role of monitoring project development
- NEMA is still a relatively new institution (established in 2002) hence still experiencing some teething problems. It is also limited by the size of its field expert staff among other needed resources.
- Some of the experts registered by NEMA to conduct EIA, EIS and environmental audits are still wanting in so far as their competence is concerned – this tends to compromise the quality of the output reports. This is because when, NEMA was established, it was required by law to enlist environmental experts that would assist proponents prepare needed EIA reports. Because adequately trained environmental experts were few then, any person with general or slight experience in environmental matters was registered.

Some respondents however, were optimistic that this situation will be improved once national EIA guidelines come into place and also through retraining- a few institutions have been legally given the mandate to organize short course trainings in environment.

All respondents indicated that they always make use of the legal documents as reference material in their day-to-day operations. Some confessed to have participated in the development of the legal documents currently in use - a confirmation of familiarity with the guidelines/regulations.

4.2 The Quality of EISs

4.2.1 Quality of EISs based on Lee – Colley package

Four-samples of water related development projects (WRDPs) were reviewed. Their EISs were prepared between 1993 and 2005. The assessment was carried out as explained under methodology chapter section 3.4. The quality of EISs is presented in scores on the basis of the assessment pyramid-figure 3.1 under chapter three. Grade C is considered the minimum acceptable quality level.

Summary of review results is given in table 4.2.1. The four review areas of the package used are: *general description of the development and baseline conditions* (review area 1), *identification and analysis of key impacts* (review area 2), *alternative, mitigation and monitoring* (review area 3) and *communication of results* (review area 4).

Figure 4.2.1A shows the overall quality of the above four review areas. Two projects (Garissa and Nyeri) just had a minimum acceptable quality C while the other two (Sonde and Kisumu) were considered good - B. As table 4.2.1 and figures 4.2.1A & B show, all the EISs had good quality in describing the proposed development, its environment and the baseline conditions (review area 1).

Contrary to the foregoing observation, all the EISs considered appear to have weakness in identification and analysis of key impacts (review area 2). The quality of all the four EISs was just marginally acceptable in this latter review area. It is however, worth noting that none of the EIS had an overall assessment below the

minimum acceptable quality. The same was also observed from the results by perceptions of the review committee with slight variations among them- see table 4.2.2 and figure 4.2.2.

A closer look at the specific review categories however, gives some insights into the main strong and weak areas. Prediction of impact magnitude in all the four EISs was found unsatisfactory –D. Scoping of impacts and assessment of impact significance in three of the projects was just at marginal acceptable quality level. Since these three categories all fall under review area 2, it helps explain why this key area of EIS was ranked overall at just marginal satisfactory quality. The other category of concern was communication. The entire sample EISs had no non-technical summary versions. This is probably because the current legislation does not clearly capture this as a requirement to be met by all proponents. The results of the EISs review findings are shown in table 4.2.1. The same results have been presented under each of the four main review areas (1 to 4) in bar chart form in figures 4.2.1(A-E).

Table 4.2.1: Summary of review results: Quality of EIS for WRDPs

Review Areas	Average Quality rating by two reviewers			
	Sondu Miriu H.E.P (1993)	Garissa water supply (2000)	Nyeri water & Sanitation (2004)	Kisumu water & sanitation (2005)
Overall assessment	B	C	C	B
1.0 Project, Environment and baseline description	B	B	B	B
1.1 Project description	B	B	B	B
1.2 Site description	C	B	B	B
1.3 Residues emissions	C	C	C	C
1.4 The affected environment	B	A	B	B
1.5 Baseline conditions	B	C	C	B
2.0 Identification and Evaluation of Key impacts	C	C	C	C
2.1 Identification of impacts	C	C	B	B
2.2 Scoping of impacts	C	C	C	B
2.3 Prediction of impact magnitude	D	D	D	D
2.4 Assessment of impact significance	C	C	C	B
3.0 Alternative, mitigation and Monitoring	B	C	C	B
3.1 Alternatives	B	C	C	B
3.2 Mitigation measures	B	C	B	B
3.3 Monitoring program	B	C	C	B
4.0 Communication of Results	B	C	C	B
4.1 Layout	B	B	B	B
4.2 Presentation	B	B	B	B
4.3 Emphasis	B	C	C	B
4.4 Non- technical summary	F	F	F	F
4.5 uncertainties/ key issues	C	C	C	C

Key:

Ratings: A, B, C - Acceptable level of quality

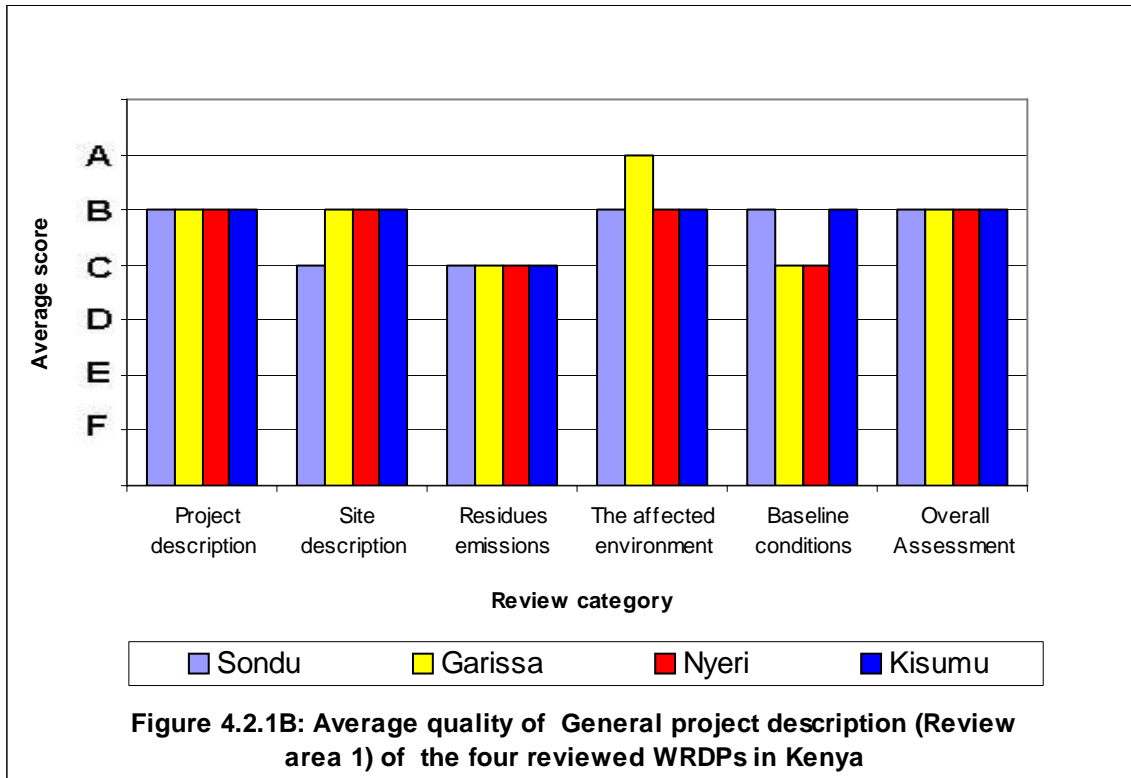
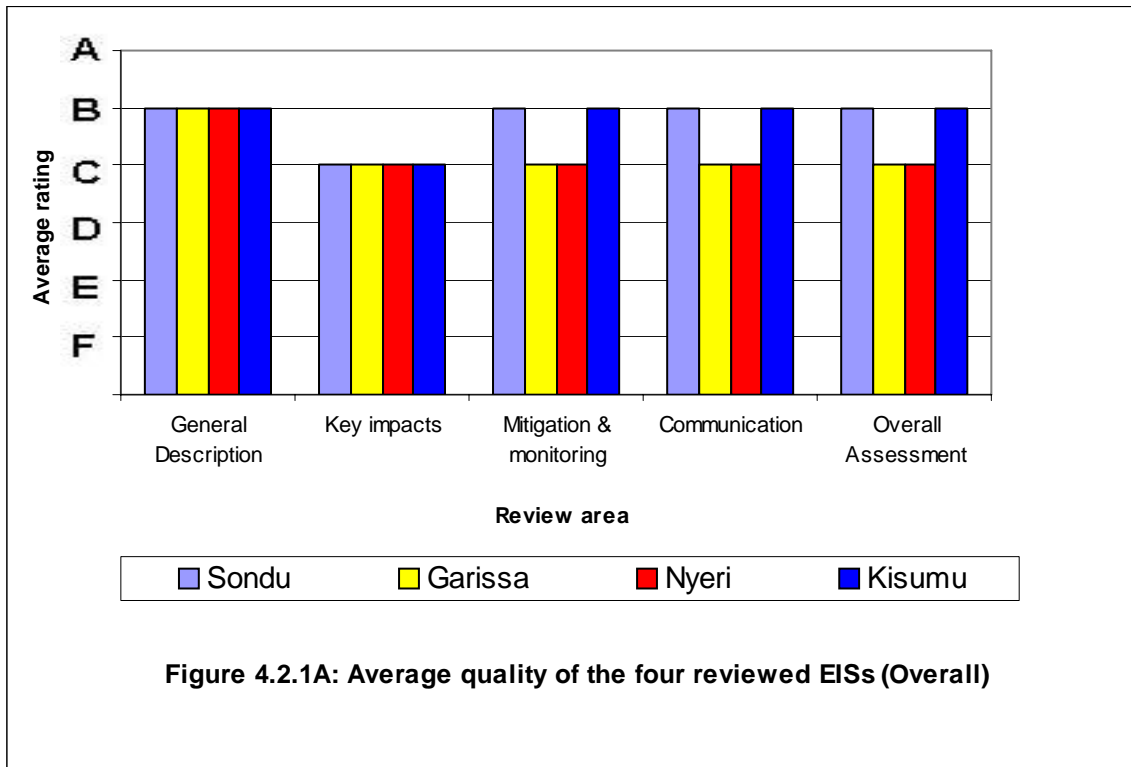
D, E, F - Quality below acceptable level

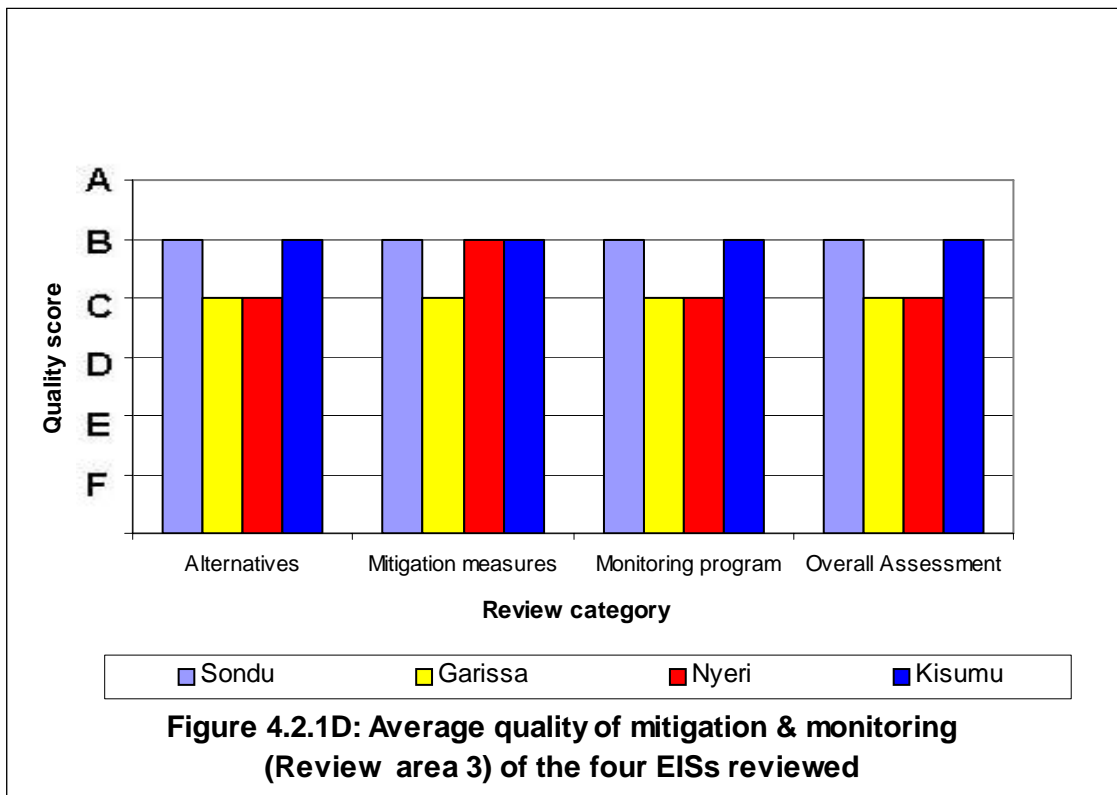
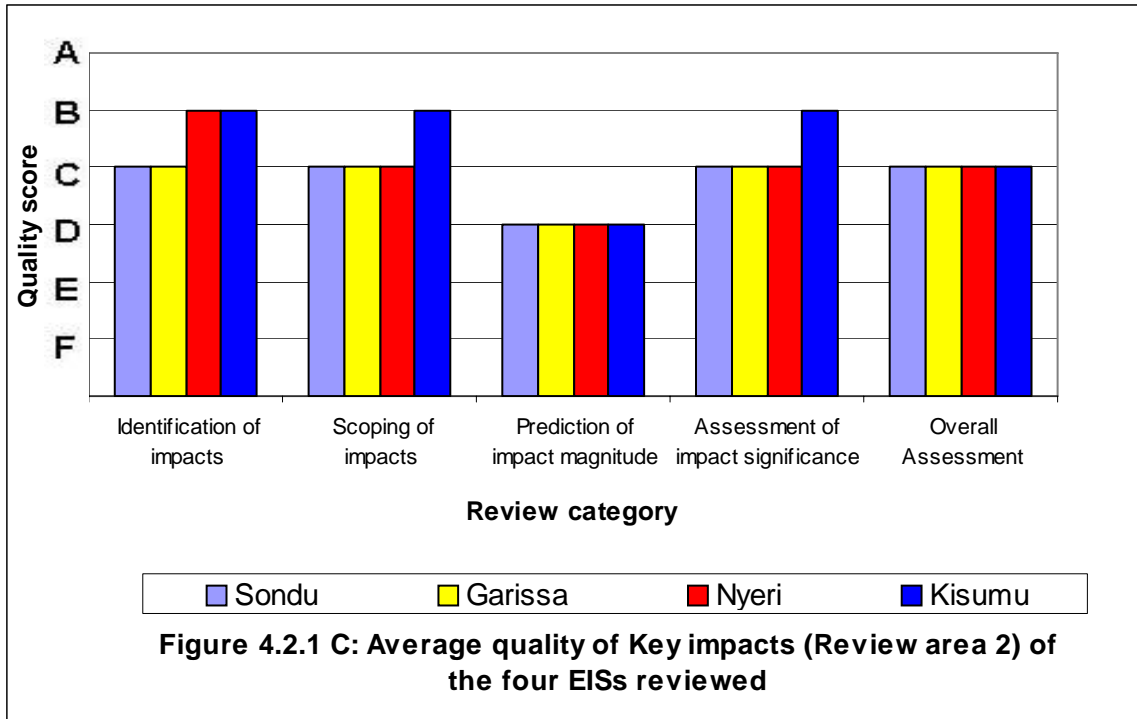
See table 3.4 under chapter three for explanation of rating symbols

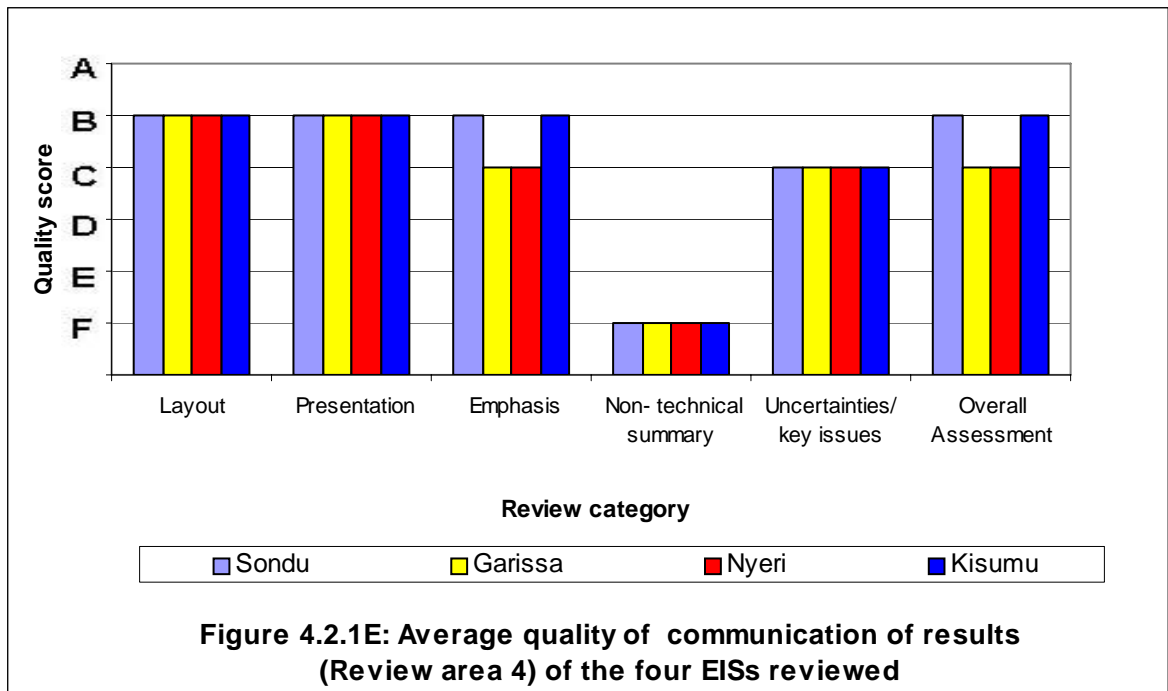
WRDPs - Water related development projects

(Year) – Implies the year when the EIS was prepared

H.E.P – Hydroelectric power







Major deficiencies as noted in the EISs reviewed by the researcher

The following is a list of some of the common omissions or deficiencies that were observed in a few if not all the EISs that were reviewed.

- All the four EIS studied (Sondu Miriu hydroelectric power project and the three water supply project namely Garissa, Nyeri and Kisumu) did not indicate the methodologies used to arrive at the results presented in the respective EISs. Areas of great concern were in:
 - Identification of key impacts
 - Scoping of impacts
 - Prediction of impact magnitude and
 - Assessment of impact significance
- In all the four EIS reports reviewed, only two alternatives were considered in each of the cases: the zero alternatives against the proposed alternatives.
- Only the EIS of Sondu Miriu provided a clear indication of those consulted and what their inputs and concerns were. The rest did not.
- Not one of the EIS studied adequately addressed potential impacts under such categories as: direct and indirect, cumulative, permanent and temporary or residual. They only expressed impacts as either short or long term and negative or positive.
- Only one project (Sondu) outlined some of the uncertainties such as gaps in the required data/information and the means used to deal with them in the assessment plus the risks involved. The other three did not have this. The same

applied to acknowledging of the data sources, actor, study team members and references consulted.

- Only one project (Kisumu) outlined the process of impacts scoping but this too was not explicit.
- All the four projects did not have a non –technical summary version of the EIS outlining the findings and conclusions of the study. Only Sondu Miriu project had an executive technical summary.
- None of the four EISs attempted to address the potential impacts of the proposed mitigation measures and the corresponding potential conflicts between their benefits and adverse effects.

4.2.2 Quality of EIS based on perceptions of EIS Reviewers

This was a second source of information on the quality of EISs. The questionnaire was tailored specifically for this group and was somehow general (see appendix 3B).

According to two of the reviewers from Ministry of water and irrigation (MWI), overall assessment of EIS quality was just marginally satisfactory (C) while according to respondent from NEMA the quality as excellent (A). It can be observed from the table 4.2.2 and consequently figure 4.2.2 that there were significant differences between results by NEMA respondent and those from respondents from MWI. NEMA respondent rated area on alternative, mitigation and monitoring at B but the rest of the review areas ranked excellent (A).

On the contrary, none of the other respondents from MWI ranked any review area as excellent (A). The latter respondents seem to agree fairly well on the quality of most areas such as 1 and 3 that were rated B and C respectively by both of them. As would be expected, they too held different opinions on some areas –see areas 2 and 4. Their differences were however, not with very significant margins. To the contrary, their differences were significant when compared to the ratings by the respondent from NEMA.

The findings of the three respondents are summarised and presented in table 4.2.2 and figure 4.2.2.

Table 4.2.2: Perceptions by reviewers on quality of EIS for WRDPs

Review Areas	Rating by three reviewers		
	NEMA	Reviewers from Ministry of Water and Irrigation (MWI)	
		1 st Respondent MWI	2 nd Respondent MWI
Overall assessment	A	C	C
1.0 Project, Environment and baseline description	A	B	B
1.1 Project description	A	C	A
1.2 Site description	A	B	B
1.3 Residues emissions	B	C	C
1.4 The affected environment	B	B	A
1.5 Baseline conditions	A	B	A
2.0 Identification and Evaluation of Key impacts	A	C	B
2.1 Identification of impacts	A	C	B
2.2 Scoping of impacts	A	C	A
2.3 Prediction of impact magnitude	B	C	C
2.4 Assessment of impact significance	B	C	A
3.0 Alternative, mitigation and Monitoring	B	C	C
3.1 Alternatives	B	C	B
3.2 Mitigation measures	B	C	C
3.3 Monitoring program	B	D	C
4.0 Communication of Results	A	D	C
4.1 Layout	A	D	C
4.2 Presentation	A	D	A
4.3 Emphasis	A	D	C
4.4 Non- technical summary	A	D	C

Key:

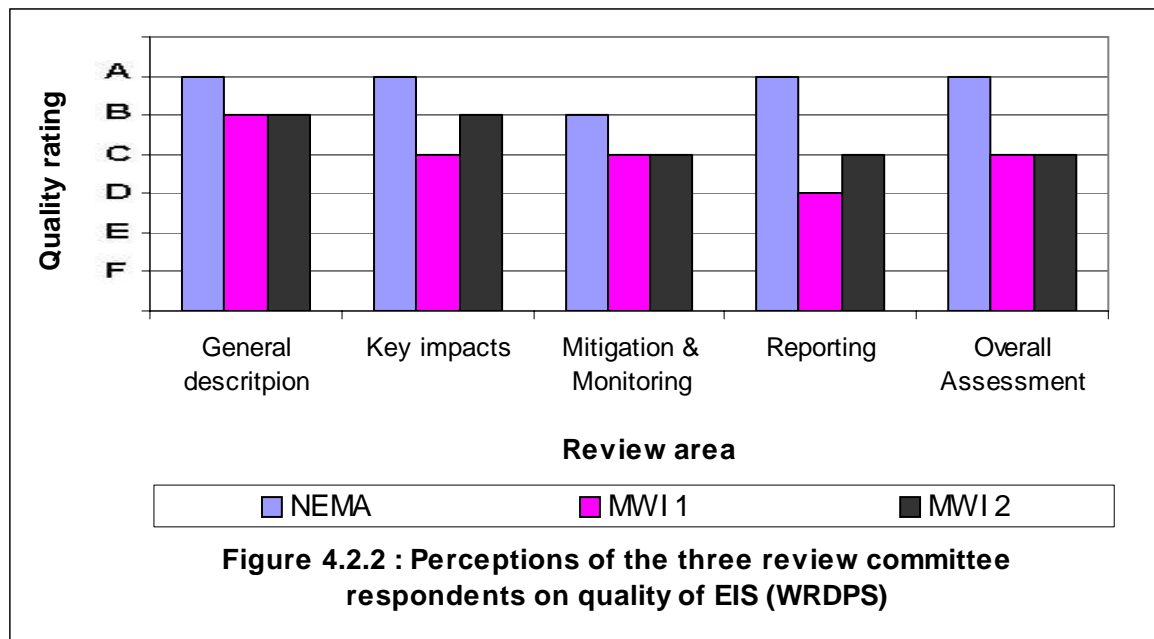
Ratings: A, B, C - Acceptable level of quality

D, E, F - Quality below acceptable level

See table 3.4 under chapter three for explanation of rating symbols

WRDPS- Water related development projects

MWI- Ministry of water and Irrigation



4.3 The Quality of Implementation of Sondu Miriu EIS

4.3.1 Quality of EMP and Contract Documents

EIS for Sondu Miriu project was prepared in 1993 under World Bank EIA requirements. The adequacy of the key aspects in an EIS upon its review is given hereunder.

- The overall quality of EIS was considered to be good. However, the impacts, mitigation and monitoring measures were not organised into a management plan. The cost estimates for the recommended measures were not also prepared.
- A summary of the main impacts was well presented. Mitigation measures were elaborate and quality of coverage of the impacts ranked good.
- Overall, effort made to translate the EIS recommendations into action was considered good as can be seen in table 4.3 under implemented mitigation measures

Contracts

Unfortunately, the researcher was unable to access the contract documents for this project. The documents were treated confidentially by the proponent and only accessible by a selected project management staff. It was however noted that the project EIA was prepared in 1993 in compliance to the World Bank EIA requirements. The latter are explicit about environmental considerations to ensure safety, health and protection of the physical, natural and social environments especially during construction phases of projects. From the field observations and

interviews, it became clear that there was good commitment to upholding these aspects by project proponent and contractor.

4.3.2: Assessment based on opinions of project-affected people (interviewees)

The EIS of Sondu Miriu project presented the mitigation measures in form of six elaborate recommendations. The interview questions were structured to enable information about their degree of implementation and effectiveness be obtained. The findings from interviewees are presented below. Both the recommendations and the findings are discussed. The interviewees are explained under methodology section 3.5.2.

Recommendation 1: discharge channel

That the discharge channel would be re-aligned to pass along common boundary of plots in the project area so as to minimise the number of bisected plots. This recommendation was lauded by atleast 80% of the interviewees as having been done with a lot of consultation among the affected. This was ranked as good (B). The channel is currently under construction.

Recommendation 2: Institutional Arrangement

That for purposes of arranging and negotiating compensation, land redistribution and other general mitigating measures during project implementation such as positioning of bridges, roads among others, and establishment of a satisfactory institutional arrangement was the single most important factor in resolving any potential negative impacts.

This was considered the single most important recommendation whose success greatly contributed to the realisation of the others. Formation of project technical steering committee comprising government official (District commissioner), local elected leaders, representative of the proponent and contractor was seen as a milestone in implementation of project activities especially the EMP. Four sub – committees each with clear terms of reference were formed under this technical committee as indicated below. At least each sub –committee had four members.

- Land resettlement
- Health and safety
- Education and employment
- Environment

Recommendation 3: Water supply

In view of the expectations of the residents in terms of an irrigation component (residents had wanted inclusion of an irrigation component) and lack of a reliable water supply, design of a simple gravity water scheme that could be managed by the community was recommended.

At least 80% of the interviewees were happy that the project had set up a gravity community water project. 20% of them felt that the coverage was not adequate and that it should be expanded so as to be close to all the people.

Recommendation 4: Dumping of waste material

Waste materials should be disposed in an environmentally and socially acceptable manner with due regard for safety and aesthetics. About 60% of the interviewees

showed discontent with the manner in which the waste material was being dumped. The project area has some places that have in the past experienced serious land degradation through soil erosion giving rise to deep and wide gulleys. The latter have affected farming activities and even access routes linking villages and families. Residents had preferred that part of this waste construction material be used to fill up these gulleys and hence restore the degraded lands.

Part of this had been done but most was still unattended. It should however be noted that this restoration of the degraded lands was not part of the project activity. It can only be hoped that this will be re-looked at as the project implementation progresses.

Recommendation 5: Rehabilitation

After construction and spreading of overburden etc those areas of forest that would be damaged should be rehabilitated and replanted. The project proponent has begun a tree nursery in the area. Tree seedlings suited in the area are developed and distributed to the local community and schools for planting with the help of local elected leaders and local government departments.

Recommendation 6: Health

Malaria is severe in the project area. Immigrant workers should be provided with mosquito nets. Preventive treatment should be provided to all workers in conjunction with spraying of hostels with persistent insecticides. It was also recommended that an AIDs education and information programme spanning the entire project construction period be established. This was to involve local NGOs, National AIDs Control Council (NACC) and the District Intersectoral AIDs Committee (DIAC)

This project is in a malaria prone area. Project staff lives in well-constructed housing units with doors and windows fitted with mosquito wire mesh to keep the insect from entering the houses. The beds are also equipped with mosquito nets as double protection. Spraying of insecticides is left to the individual worker/employee. Staff of the proponent has permanent housing units whereas those from the contractor reside in prefabricated timber structures with iron-sheeted roofing. Casual labourers are all assumed to be locals hence commute from their traditional homes. Implementation of this recommendation was rated good (B) by atleast 90% of the interviewees.

4.3.3 Assessment based on field observations: Impacts, Mitigation and Monitoring

Information presented in this section was gathered according to the description given under methodology section 3.5.3. An analysis of the impacts, mitigation and monitoring measures has been made in order to determine the appropriateness and quality of implementation of the designed environmental management actions.

Table 4.4 below is a summary of the findings from the analysis. It shows the key impacts – categorised as predicted and unforeseen. Predicted refers to the potential impacts that were recorded in the EIS. Unforeseen are those that were not predicted and hence were not covered in the EIS but yet actually occurred in the field.

Also included in the table are the mitigation measures taken so far as at the time of field visit (November 2005). The latter are categorised as either fully or partially implemented. Fully implemented mitigation measure implies that the action as

recommended in the EIS was actually carried to the full and that what it was intended to safeguard was safeguarded within acceptable limits. Partially implemented measure simply means that the action has not been completed as recommended but has been started. In most of the cases it is not fully implemented because construction is still on going.

Table 4.3: Summary of Analysis- Impacts, Mitigation and Monitoring

Project phase	Environmental Component	Impacts				Mitigation measures		
		Predicted in EIS		Unforeseen in EIS		Proposed in EIS	Implemented	
		Neg.	Pos.	Neg.	Pos.		Fully	Partly
Construction	Biophysical	2	-	1	-	4	3	1
	Socio-economic	11	3	2	6	14	12	2
	Total	13	3	3	6	18	15	3
Operation	Biophysical	8	-	n.a	n.a	8	n.a	n.a
	Socio-economic	2	2	n.a	n.a	2	n.a	n.a
	Total	10	2	n.a	n.a	10	n.a	n.a

Key: Neg.=> negative Pos.=> positive n.a implies not applicable

Impacts

A total of 28 main environmental and social impacts were predicted in the EIS. Sixteen (16) of these impacts were to occur during project preparation and construction phases (refer to table 4.3). The rest were predicted to occur during operation phase. The impacts predicted to occur during preparation and construction phase actually did occur. However, one impact (increased flooding in the lower reaches of the project area) emerged that had not been predicted in the EIS. The latter had not been attended to as at the time of conducting this research. This problem was associated with increased run off in the project area due to project activities such as road and housing development. This affected especially those that relocated to lowlands where space could be found upon receiving monetary compensation to pave way for project development.

The six positive socio-economic impacts (unforeseen) realised during the construction phase included re-construction of two primary schools (Aomo and Apondo Kasae), one Church, one social hall, one library and rehabilitation of buildings of the area health centre. The negative impacts were excavation of graves, flooding and blocking of previous access routes between homesteads in the project area and introducing longer alternatives. Graves were adequately compensated and alternative access paths

between homesteads provided even though they were long compared to previous ones. Flooding problem has not been attended to.

Out of the sixteen (16) impacts predicted to occur during construction phase 3 (18%) were considered positive and the rest (82%) negative. Of the negative impacts 15 % affected the biophysical environment while the remainder affected mainly the socio-economic (refer to figure 4.3.1A). The main impacts included soil erosion, air pollution, noise pollution, landscape modification and visual intrusion, loss of vegetation, resettlement of the affected people, loss of livelihood and flooding of lowland (Unforeseen in the EIS).

Mitigation Measures put in place during construction phase

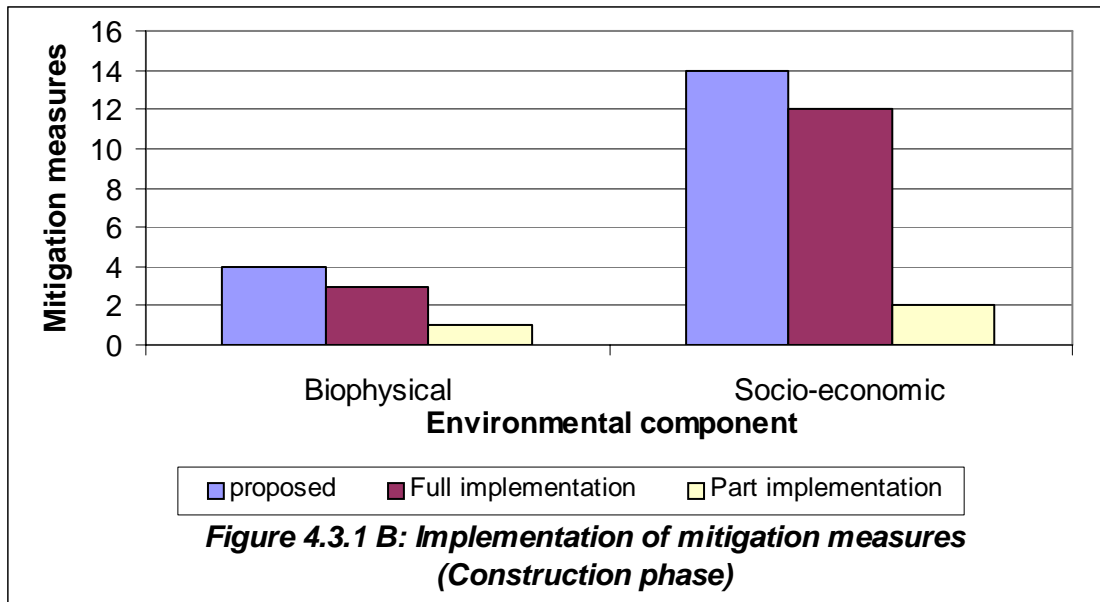
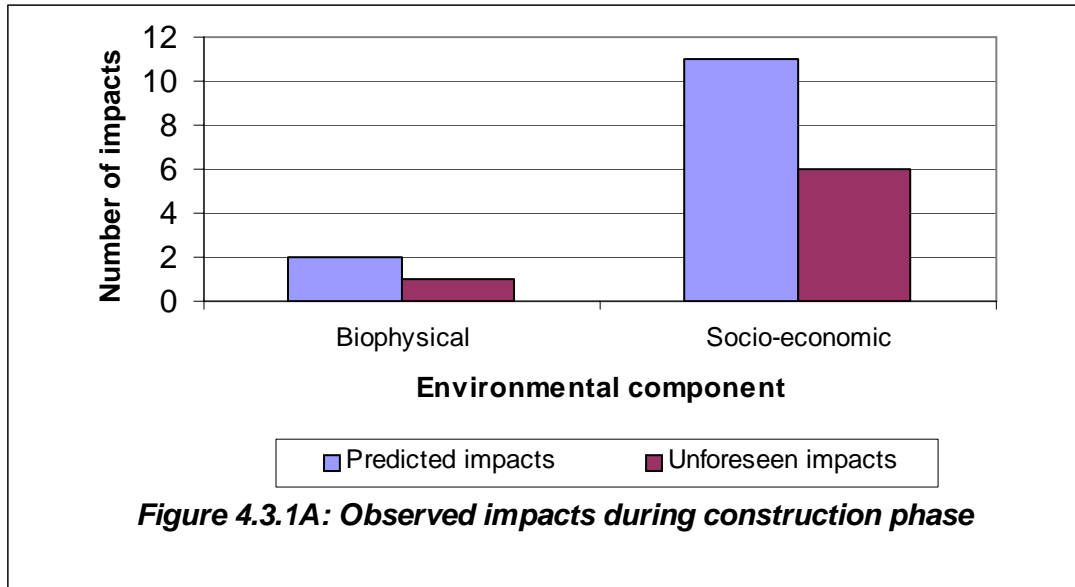
Eighteen mitigation and compensation measures were recommended in the EIS. Fifteen of these (83%) were fully implemented. The rest were implemented only partially. This is mainly because construction is still ongoing. Mitigation measures so far implemented can be distributed as 80% and 20% on socio-economic and physical & biological environments respectively (see figure 4.3.1 B for a graphical presentation).

Monitoring of impacts

According to the EIS report, the expected impacts of this project were not so significant as to require extensive monitoring programme. The principal areas that were recommended for monitoring were categorised into two main areas as follows:

Social – monitoring of the outcome of resettlement of the affected people for a period not exceeding five years, consisting of annual checks leading to corrective action where necessary.

Biophysical – monitoring of water quality samples at the reservoir and outfall of the discharge channel in liaison with the local fisheries research station on fish spawning and changes in migration pattern upstream of the weir. This recommendation mainly applies during the operation phase of the project. It was therefore, not evaluated since the project is still in construction phase.



General comments from respondents/interviewees

Strengths in current implementation of EMP

- Existence of EMCA (1999)
- Commitment by both the proponent (KenGen) and project contractor (Japanese Company).
- There is adequate funding for the EMP implementation
- Existence of project technical committee to implement EMP
- Involvement of various interested groups

Main weak points in implementing the EMP as noted by researcher

The representation of interest parties in the technical sub-committee responsible for environmental matters is inadequate both in number and capacity. The District environment officer (representative of the national environmental agency – NEMA), the District water officer and NGOs active in environment matters in the region are conspicuously absent from the committee.

Majority of those interviewed recommended that an independent EIA expert or expert firm be appointed to audit the report of the sub-committee on a regular basis. Alternatively, the independent expert should be producing regular audit reports on status of the environment. Currently, the sub –committee has only one environmental expert who is an employee of the proponent and based at the head office of the proponent. The researcher concurs with the views of the people on this matter: It is important to separate the role of an accountant and an auditor. The role of self-auditing by the proponent is necessary but should also be independently checked. Further, exclusion of local representative of NEMA from the environment sub-committee casts shadow on the representation.

Photo1



Aerial view of the project area- Sondu Miriu hydroelectric power project

Photo 2



Sondu Miriu project: *Far background* - Headrace channel on Nyakach escarpment to power house
Middle ground - Excavated material stocks and crushed Ballast Next to powerhouse

Photo 3



Visual intrusion: Stocks of excavation and construction material

Photo 4



Water tunnel through Nyakach escarpment.

Photo 5



Land degradation typical of Sondu Miriu project area. This is a cut -off bridge

4.4 Kenya and MDG #7: Ensuring Environmental Sustainability

This section presents findings on MDG #7 target 9. The target has basically two components. The first component is concerned with integrating principles of sustainable development into country policies and plans. The second part is about reversing loss of environmental resources. Since this study is about EIA and sustainable development, the first component of target 9 is therefore most relevant. However, the current status of both components will be presented here and later discussed under section 5.4. The findings are based on review of relevant reports/documents relating to MDGs in Kenya. The link between MDG #7 and the rest of MDGs can be seen in table 2.0 section 2.5 of chapter two.

A state of the environment report of 2004 indicates that between 1930 and 2004, Kenya lost 65% of its standing woodland through uncontrolled clearance. Between 1988 and 2003, more than 50% of industrial forest was also lost. Today (2004), only 1.7% of land area is protected (gazetted) as opposed to the 10% requirement under the Millennium Declaration.

Some interventions have and continue to be put in place to bridge this gap between 1.7% and 10%. They include policy interventions such as introduction of forest Bill and policy on land use in Kenya. Enactment of EMCA in 1999 and formation of NEMA in 2002 are some of the actions that have so far been implemented towards realizing this goal.

Consequent to the foregoing measures, 1,760 hectares of forest has been rehabilitated, 3,270 hectares established by private stakeholders and about 6,000 hectares of forest plantations established. It is projected that by 2008, the area under forest will double to 3.5%. This clearly indicates Government's effort towards achieving indicators 21 and 22 mainly on reversing loss of environmental resources. There is however, little mention of the efforts being made towards fulfilling the first component of target 9: integrating the principles of sustainable development into country policies and programmes. This is the weakest point of this target at the moment. Worse still is the lack of explicit indicators for the latter component.



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5.0 DISCUSSION OF RESULTS

5.1 The quality of EIA Guidelines

The following discussion is based on EIA guidelines review results coupled with the findings from specialists' perceptions as presented under section 4.1 of chapter four. The findings are also compared with relevant literature from other sources outlined in chapter two. The section responds to the research question: what is the quality of EIA guidelines in Kenya?

Looking at the EIA & EA regulations of 2003, the stages in Kenyan EIA process compare well with the generic EIA training manual by UNEP (UNEP, 2002). They both have the same stages only that they are slightly different in arrangement. The Kenyan EIA process considers EIA study report to encompass impact analysis, mitigation & impact management and reporting whereas the UNEP training manual separates them into three distinct stages. As important as these stages are, the Kenyan EIA process captures only the end product - the EIA report. It considers the latter to be the end product of the collection and collation of the other stages. This however, can be a point of weakness in the Kenyan EIA process. Failure to clearly separate impact identification and analysis from mitigation /impact management into distinct stages may result in less in-depth assessment of these stages that may eventually impact on the quality of final EIS. This is especially so when there are no specific guidelines on how the various key stages should be carried out. The rest of the stages after submission of EIA report are the same for both Kenya and UNEP processes.

Reporting is the stage at which information from impact analysis, mitigation and impact management is organised and results of EIA study synthesised. The regulations give clear guidance on what the contents of the EIA report should have. It is this information that would be used by decision makers to determine whether or under what conditions a proposal should proceed. The importance of this stage cannot be overemphasised. It determines the quality of the decision to be arrived at. Abaza et al. (2004) refers to EIA report as a critical document that assembles information to decision makers for project approval.

Another very important addition to the Kenyan EIA process that is very conspicuously absent from the UNEP guideline is the National Environmental Tribunal (NET). The Kenyan EIA process envisages that a conflict is bound to arise between a proponent and the decision-making authority following rejection of a development proposal. Provision for a neutral body is therefore, made to receive and hear appeals by those who are dissatisfied by certain decisions made by the Authority. The decision of the tribunal is also not final. A proponent can still proceed to the high court in the event that the decision by the tribunal is not satisfactory. The decision of the high court is however final. For details on Administration of the EIA process in Kenya see section 2.5 under chapter.

Public involvement is very fundamental in the EIA process. Bisset (1992) notes that broad stakeholder involvement is an important ingredient for effective EIA. World Bank (1993) too found that public participation in EIA tended to improve understanding of potential impacts, identify alternative sites or designs & mitigation

measures, improve environmental and social soundness, clarify values and trade offs associated with alternatives, identify contentious issues, establish transparent procedure for carrying out proposed projects and create accountability and sense of ownership during project implementation. According to UNEP (2002) public involvement contributes to successful design, implementation, operation and management of development proposals. It is no wonder that the generic EIA process by UNEP (2002) captures the element of public involvement at two separate levels namely scoping and review stages. This too is the case with Kenyan EIA process. It is enshrined in the EMCA (1999) and also in the EIA&EA regulation 2003. It comes into action after approval of a project report (IEE) for EIA study. Approval of project report for EIS study gives way to scoping.

It is during this scoping process that stakeholder involvement swings into action. Current legal documents are explicit about this process. Additionally, within fourteen days of receipt of the EIA study report, NEMA (Authority) will invite the public to make and submit oral or written comments on the report. These comments are to be taken into account during the decision making stage. It is however, not clear yet how effective this last approach of people submitting written comments is. The public is required to get the EIS document at a fee, read and submit comments. Given an adult literacy level of 74% and high poverty level of 56% in the country, it would be difficult to expect good response on this.

A sizeable proportion of the 74% above (between 15 –30 years) are in school and busy with career to pay much attention to environmental matters – at least as of now. EISs are technical reports that in most of the cases draw attention of only experts/organisations in the field of environment. The high poverty rate may make the EIS inaccessible to even the stakeholders like communities affected by the project. Most respondents concurred that even lead agencies did not have adequate capacity yet and that in most of the cases, the comments solicited from them by NEMA went un-submitted. These comments are supposed to aid the decision making process- (see glossary for meaning of lead agency).

Under the current draft EIA guidelines now in final stages, the process is referred to as public consultation and participation. This is to emphasise not only the need to consult the public but also to have them participate in the process by considering their concerns in decision making. EMCA (1999) gives a schedule outlining a range of stakeholders (lead agencies) to be involved in the EIA process. They include government departments, the business sector, relevant NGOs, research institutes, statutory agencies and universities. Their responsibilities are also clearly stated in the Act and also in the EIA regulations 2003.

EIA regulations 2003 give guidance on the language that should be used, form of media, time and duration of advertisement and contents of the advert inviting public views. Those who have been active during this phase have been mainly NGOs, business community and environmental conservation organisations. Occasionally, politicians have also been active but most times only compounding the issues. Whenever this has happened, the pace of project approval and implementation has always been delayed.

Based on the review of the EIA regulations, 2003 the EIA process compares quite well with the generic process of UNEP training manual of 2002. All the stages are present save for the manner of their organisation. The Kenyan process however has an additional stage allowing for appeal against any decision by the Authority. According to specialists' perceptions, they all find EIA stages well covered (quality B). This is in agreement with what the researcher established. Provisions for implementation and monitoring were considered marginally satisfactory (quality C). This responsibility is left to the lead agencies and the authority. Over 90% of the specialists/respondents concurred that currently; most lead agencies do not have adequate capacity for most EIA process stages. At least 60% of the respondents were hopeful that once the EIA guidelines currently in final preparation stage come into force, the quality of EIA process is likely to improve significantly. This of course assumes that the level of enforcement will be maintained and /or be enhanced.

On environmental standards and guidelines, the review revealed that currently no harmonised national environmental standards and guidelines are available in Kenya. In as much as this is a deficiency in the EIA system and a constraint to effective EIA study, there is no vacuum as sectoral standards and guidelines previously in use before enactment of EMCA (1999) are still being used in the meantime. The current legal documents are aware of this deficiency and have made provision for use of other international and national standards and guidelines so long as a justification is given for their choice.

The Authority (NEMA) responsible for environmental matters has been addressing this gap. A consultant engaged by the Authority has already prepared a draft document. This is due to be subjected to stakeholder discussion before being made an official document for use. It is hoped that once these standards and guidelines come into use, the quality of EIA will improve and so will review of EIA reports be made easy.

Concerning environmental information, all respondents rated description of the baseline environmental conditions as good (quality B). The description adequately addresses the various components (spatial, physical, biological and socio economic and cultural aspects). The requirement on this subject is clearly captured in the EIA & EA regulations of 2003. Environmental impact assessments are also conducted on the basis of the above components and so are the mitigation measures. The regulations also stipulate that an EIA report should have an environmental management plan and include environmental monitoring and auditing.

The EIA & EA regulations require that only experts registered with the Authority conduct EIA studies. This assumes that the 'experts' understand what is expected during the various stages of EIA process. This assumption may not always be true going by the training backgrounds of the 'experts' as observed from the register at NEMA. Even if the assumption was true, for systematic and uniformity sake, guidelines would be necessary. And whereas the regulations are a good interpretation of EMCA (1999), there is still need to have general national guidelines to complement the regulations. This should make it easier especially for the less experienced specialists to conduct comprehensive EIA studies.

All respondents noted that the guidelines are effective in practice but there is always a tendency for developers and other parties responsible to ineffectively implement or rather avoid applying the specified requirements in EIA reports especially during implementation. This is exacerbated by the fact that most lead agencies responsible for monitoring and follow up are limited in a number of ways.

Among the immediate objectives of EIA according to UNEP, 2002 is to improve the environmental design of the proposal, which includes siting of the project. To achieve this objective, it would require that EIA be introduced early enough in the project cycle. Unfortunately, for most projects in Kenya, EIA is applied after project siting and design have been finalised. EIA in this case becomes a justification tool as opposed to a means to attain the best decision (Momtaz, 2002) – see section 2.4 of chapter two.

Societal needs keep changing as well as technology. This demands that EIA systems too should adjust accordingly. Environmental Management and Coordination Act (EMCA (1999)) has been in use for a very short period now. Yet since coming into use about three ago, gaps are beginning to emerge. The Act and the legal notice 101 are currently being subjected to critical review so as to facilitate filling of the gaps that have so far been identified while at the same time ensure they are in tune with ideas of best practice. Plans are at an advanced stage to repeal the EMCA so as to make provision for revision and addition of some sections of the regulations and incorporation of the guidelines and standards currently in final stages of preparation.

It is therefore not appropriate at the moment to judge the regulations as either static or dynamic documents given that they became legal only recently. In any case, the ineffectiveness and hence need for revision of a given regulation can only be justified after use or testing. This is normally feasible after subjecting the regulation to use over a reasonable period.

5.2 Quality of EIS

This section discusses the findings from two sources of information on quality of EISs. Those by the researcher based on Lee –Colley review package and those based on the perceptions of respondents. Reference is also made to other earlier findings from existing literature. The findings in this section answer the question: what is the quality of EISs for WRDPs in Kenya?

It is always advisable to adjust a given review package to local conditions or settings especially if it was not specifically tailored for those conditions. This however could not be adequately done in the Kenyan situation given that she has no EIS review guidelines of her own as at the time of conducting this research. Lee –Colley review package was therefore adopted in whole with an addition of some sub-categories viewed important in the Kenya situation. For details on the specific additions, see table 1.0 of appendix 3A.

Quality of EIS

Overall assessment

Results from the review show that all the four EISs were of satisfactory quality- see section 4.2 figure 4.2.1A on overall assessment. However, 50% of them were only marginally satisfactory with “C” rating and the rest had ‘B’. Further still, a look at each of the assessment areas suggests that all the EISs were at least of satisfactory quality ‘C’ despite omissions and inadequacies in some components. This is fairly in agreement with the findings based on perceptions of the reviewers. According to the three review respondents, EISs of WRDPs are generally of satisfactory quality. Two of them gave an overall quality of ‘C’ while one gave an ‘A’ see figure 4.2.2 in section 4.2. General description (review area 1) was rated the best among the four review areas with two (67%) of the reviewers giving B and 33% rating A. Review areas 2,3 and 4 followed this. A closer look at the results shows significant differences among the three reviewers (respondents) especially between the two organisations (NEMA and MWI). This can be noticed even more under reporting category where ratings were A, C, and D.

MWI respondents tend to compare fairly well in most areas. It can also be observed that the reviewer from NEMA gave an overall quality ranking of A (excellent) whereas those from MWI both gave ‘C’ (satisfactory) for the same. The reviewer from NEMA had 2 years experience in EIA practice. The first and second respondent from MWI had 5 and 10 years respectively. Except for communication of results review area, respondents from MWI seem to agree that most review areas are just satisfactory. Whereas reviewer from NEMA found reporting area to be excellent (A), one of the respondents from MWI found it just marginally satisfactory and yet another found it unsatisfactory (D). This is attributable to individual judgements that can be subjective over certain issues. Experience in EIA could also have contributed to the differences in the foregoing rating. Perhaps the results would have been different had they been based on assessment of particular EISs.

There are many factors that could help explain differences in the results between the researcher and the reviewers. They range from differences in EIS sample sizes, methodology to nature (water, road, industry etc) of EIS. Firstly, sample EISs reviewed by researcher were based on established criteria (Lee-Colley package) while specialists based their perceptions on professional judgement without a particular EIS in mind. The latter is more subjective and prone to bias as compared to the former. Secondly, reviewers usually consider EISs prepared by all cadres of experts like international experts, local experts and also those prepared by a partnership between foreign and local experts. Sample EISs reviewed by the researcher were purely of the latter category -partnership. It is therefore possible that opinions of the other reviewers were based on broader range of EISs than that of the researcher hence the difference in rating.

A Japanese consultant conducted EIS for Sondu while that of Kisumu was carried out by a partnership between Kenyan and French firms. The overall assessment was ‘B’ for both EISs. Garissa EIS was also prepared by the same partnership between

Kenyan and French firms while that of Nyeri was prepared by a partnership between a German and local firm. Comparing Garissa whose EIS was prepared in 2000 with that of Kisumu of 2005, shows that this same firm had an improved performance in quality of EIS preparation. This could be attributed to many factors such as experience, time and financial resources, availability of information/data among others. Lee (2000) observed that overall quality of EIA improves as experience grows in carrying out EIS especially where institutional strengthening and appropriate guidance and training support it. This could have been part of the reason in the foregoing case. EMCA became effective in 2000 and NEMA was established in 2002 to enforce EMCA. EIS for Garissa was prepared in 2000 before NEMA was formed but EIS for Kisumu was prepared in 2005. Comparing the two EISs that were prepared by the same partnership of firms confirm the observations made by Lee (2000) as explained above.

It also emerges that most of the EISs in WRDPs in Kenya are still being conducted by foreigners or in partnership with locals. The foreign firms also happen to have come from the countries that were funding the respective projects. This seems to agree with what Abaza (2000) observed. He noted that when EIA was first used for development in developing countries, it was largely donor driven and conducted by expatriate consultants. It is noteworthy here, however, that in the Kenyan situation, foreign consultants are asked to form partnership with local ones of their choice. This is positive for local capacity building considering that EIA at national level is still at infant stage (5 years) in Kenya.

Assessment area 1: General description of project

The overall assessment of quality for all the four EISs reviewed was “B”. Category of residues and emissions was however, just satisfactorily rated in all the four EISs – refer to figure 4.2.1B. This is because the quantities of wastes associated with the project are not usually given much attention. And when mentioned, they are not quantified the method used to quantify them is not stated. This observation and rating was also confirmed through perception by reviewers- see figure 4.2.2.

Assessment area 2: Identification of Key impacts

Four categories were assessed under this: *identification of impacts, scoping of impacts, prediction of impact magnitude and assessment of impact significance*. Even though most EISs were rated as marginally satisfactory in three of the categories, serious weakness was observed in the category for prediction of impact magnitude – see figure 4.2.1C in section 4.2 of chapter four. All the four EISs were found unsatisfactory in this category (D). This assessment area forms the core of any EIS process. The quality of the subsequent stages depends to a great extent upon it. This will consequently affect generation of alternatives, mitigation and monitoring measures. Eventually, the final report will not be comprehensive enough to aid good decision-making. The importance of not just having marginally satisfactory but at least an overall good rating (B) in this area cannot be over emphasized. Put in another way, the overall quality of an EIS is strongly determined by this assessment area.

Unfortunately, this remains the most inadequately covered area in most EISs both in the developing and developed countries. Even though Lee (2000) cautions about comparing quality of EIS reviews among countries, he identifies some broad

similarities both in developed and developing nations: that in both of them, unsatisfactory quality of EIS is evident. That both review areas 2 and 3 are persistently problematic in both developing and developed countries. Review area 2 is concerned with identification and evaluation of key impacts while review area 3 involves generation of alternatives, mitigation and monitoring of impacts.

Identification of impacts: identified impacts were not categorized either as direct & indirect, secondary, cumulative, short, medium and long term, permanent and temporary. Most impacts were only classified as either positive or negative. There was no systematic methodology stated in three of the EIS on how they were arrived at. Only Kisumu had the impact matrix method of impacts identification outlined.

Scoping of impacts: except for Sondu Miriu hydroelectric project, all the other projects did not give an indication of the consultation and involvement made with the stakeholders and or furnished a copy of the summary of the main comments from the consultees and the appropriate measures taken as response to the comments. Only Kisumu EIS outlined the method of scoping for potential impacts. Others did not.

Prediction of impact magnitude: there was no indication of the data and the data sources used to estimate magnitude of impacts and the gaps thereof if any in all the four EISs. Further still, methods used to predict impact magnitude were not described. Impacts magnitude was mainly stated in qualitative manner without any measurable quantities.

Assessment of impact significance: This was merely stated as minor, major or not significant without relating it to any set of standards or considering factors that affect significance such as magnitude of impact, duration, timing, extent, risk/uncertainty and reversibility among others (UNEP, 2002). Significance of residual impacts was also not tackled in all the EISs.

Assessment area 3: Alternatives, Mitigation and Monitoring

According to figure 4.2.1D in section 4.2 of chapter four, the overall assessment chart shows that two of the EISs had satisfactory rating “C”. The other two were rated good (B). One can notice that Sondu and Kisumu attained overall good rating while the other two were rated ‘C’.

Alternatives: It should be noted that only Sondu project was completely new. The rest involved rehabilitation and expansion of existing infrastructure. Surprisingly not even Sondu considered more than two alternatives when preparing the EIS. All the four cases reviewed only compared the zero alternatives to the preferred alternatives. This only reduced the assessment to justifying the chosen option by outlining the benefits of the preferred alternative to not having the project at all. This was a weak point in the four EISs. In such cases, EIS fails to perform its intended role of influencing project designs, site selection and limits stakeholder participation at an early stage of EIS process. The approach also fails to place the EIA process at the right (early stage) place in the project cycle.

The foregoing seems to reinforce what Momtaz (2002) observed; - that the general perception is that EIA is conducted only to fulfill government legislation and donor

agencies requirements and not to ensure sustainable development of projects (see section 2.4 of chapter two). That in most of the cases, proponents view EIA as an impediment to implementation of development projects hence regard it as a tool to justify projects rather than a means to the best decision.

According to World Bank EIA process, a key purpose of EIA is to assess investment alternatives from an environmental point of view. This is the more proactive side of EIA - enhancing the design of a project through consideration of alternatives as opposed to the more defensive task of reducing adverse impacts of a given design. This calls for systematic comparison of the proposed investment design, site, technology and operational alternatives in terms of their potential environmental impacts, capital and recurrent costs, suitability under local conditions and institutional, training and monitoring requirements. For each alternative, the environmental costs and benefits should be quantified to the extent possible, economic values should be attached where feasible and the basis for the selected alternative should be stated.

Mitigation measures: A mitigation plan consists of the set of measures to be taken during implementation and operation to eliminate, offset or reduce adverse environmental impacts to acceptable levels. This stage comes after alternatives have been generated and potential impacts predicted. This was generally good 'B' for three of the projects and satisfactory for one. In general, the potential for conflict between benefits of mitigation measures and their adverse impacts were not considered in the four sample EISs. Moreover, the details on how the mitigation measures were going to be implemented and how they would function over the said period were unclear.

Monitoring: The quality of two EISs were rated C and another two-ranked B. In general, provision made to adjust mitigation measures whenever unexpected adverse impacts occurred during project life was not indicated. This is a weakness because it is usually difficult to predict all impacts of a project precisely. This is partly because of the unreliability in information and/or data used and also human and technological limitations. Room should therefore, always be made for the unforeseen occurrences. Another important link that was missing was budgetary provision in the EMP for this exercise. This was noted in all the four project cases.

Assessment area 4: Communication of results

Two projects were rated with an overall 'C' and another set with 'B'. All the four EISs had good layouts and information was well presented – see figure 4.2.1.E. There was however, one weakness: information from external sources was not acknowledged in the text and where it was, the full reference of the source was never included in the EISs. Two of the EISs did not however, give prominence to potentially severe adverse impacts as well as potentially substantial favourable environmental impacts. The same EISs did not give a summary of the main impacts.

Non- Technical summary: This was rated 'F' (hardly attempted). A part from Sondu Miriu, not even executive summaries were presented in the other three cases. It's hoped that this anomaly or omission will be captured and addressed in the general guidelines currently under finalisation stage. The technical EIS is always presented or availed to non-specialists in its original form. This is likely to limit public

participation in EIA process. Most of the EISs had an average of 70 pages. This would make it difficult for non-specialists to comprehend – hence need for a non-technical summary.

Interestingly, whereas the researcher never saw any non-technical EIS summary report in all the four EIS samples reviewed, the review respondents were able to rate the same in their questionnaires. It can be presumed that there was misunderstanding or that it was bad coincidence that the selected EIS samples did not have any. Perhaps the reviewers misunderstood it to mean the summary notice usually put as advert in the print media to invite views or comments from the public or the official forms filled by proponents when submitting EIS to the Authority (NEMA).

Uncertainties in Information: All the EIS were rated as only marginally satisfactory on this issue. This was partly because none of the reports stated any gaps in the required data and how the same was handled. This presumes that information was available as and when needed. There was no indication of difficulties in assembling or analyzing data to predict impacts, basis of questioning assumptions, data or information used.

Many other researchers have recognized this as a very problematic area in developing nations. Wilbanks *et al.* (1993 cited in Wood 1995) identifies absence of reliable baseline data as a big hindrance to good quality EIS. Biswas, 1992 (cited in Wood 1995) too stresses the need to overcome problems of poor or non-existent data retrieval and management systems, inter-ministerial and/or inter institutional rivalry, unnecessary classification of data as secret or confidential and inaccuracy of data. Abaza *et al.* (2004) indicated that knowledge of development/environmental interactions is not yet sufficient to ensure that EIA predictions will be accurate in many cases or at all times. From the foregoing its almost clear that access to quality information/data is a problem and is made even difficult through its classification and management.

Summary

Findings discussed under this section show that the overall quality of EISs for WRDPs in Kenya is generally satisfactory despite omissions and some inadequacies. These findings also agree in a number of ways with those of earlier researchers stated in the last section of 2.3 under chapter two. They include findings by Tiwi (2004), Route (1994), Mwalyosi and Hughes (1998) and Arebo (2005). The number of EISs considered under this study is however; very limited (4) and so is the number of respondents (3).

5.3 The Quality of Implementation of EIS Recommendations

This section is a respond to the research question: what is the quality of implementation of the EIS recommendations for Sondu Miriu power project?

EMP provides an essential link between the impacts predicted, the corresponding mitigation measures as specified in EIS and their implementation. According to World Bank, 2002, EMP outlines the anticipated environmental impacts of projects, the measures to be undertaken to mitigate these impacts, responsibilities for mitigation, time scales, cost of mitigation and sources of funding. EMP is therefore among the key elements for successful management of environmental impacts of development actions.

According to UNEP (2002), the need to ‘internalize’ the full costs of development proposal is now a widely accepted concept. It is the responsibility of the proponents to mitigate impacts through good project design and environmental management. This should aim at providing benefits to the community affected by the proposal by putting plans in place for managing negative impacts so that they are kept within acceptable levels and make good any residual environmental damage.

The consequent sections discuss the findings from field observations and those from interviews with project affected people, local official and opinion leaders.

Currently, Kenya has no official guideline on how the EMP should be developed by proponents. This ‘free style’ for all makes it not only difficult for the proponents and other EIA practitioners but also for reviewers to give adequate quality assessment on EMPs. This was the case with Sondu Miriu. The review revealed that EIS findings were not translated into actionable plans but were instead presented in form of recommendations. There was no clear indication of the institutional arrangement for most of the measures and monitoring plan for both construction and operational phases.

It should however, be noted that EIS for Sondu project was prepared in 1993. This was just one year after the Rio Declaration on Environment and Development – Agenda 21 principle 17, a time during which EIA received more attention for the first time in history with regard to development. It was also after this declaration that more effort towards developing EIA related guidelines and manuals took place. The project may not have benefited therefore, from the current wealth of documented information on EIA practice. Serious deficiencies in the EIS included lack of institutional arrangements for implementation, cost estimates for mitigation measures, integration of EMP with project schedule, capacity building requirements, quality assurance and control mechanisms and mechanisms for enforcement and taking corrective actions.

A total of 28 environmental and social impacts were predicted in the EIS. 57% of these were to occur during planning and construction phase. 43% were predicted to occur during the operation phase. As at the time of carrying out the study, the project was still in the construction phase. Consequently, only what was predicted and planned for construction phase has been discussed in this report. The first method of verifying degree of implementation of EIA recommendations on Sondu Miriu project was through field observations. The field findings are discussed below.

All the 16 impacts predicted to occur during planning and construction period actually occurred. In addition, 9 unforeseen impacts did occur: three were considered negative while six were positive. Of the three negative impacts (unforeseen) 67% had been mitigated. One associated with flooding during rainy season was still outstanding. It is claimed that improved access roads in the project area has increased surface runoff in the low lands. This could not be verified during the research but there was high likelihood of this problem during rainy season. Most of the project area appeared to have more open areas without vegetation cover. The fact that it is a seasonal problem and that only a small number of households far from the project area (periphery of Lake Victoria) are affected could perhaps partly explain why action has not so far been taken. Another reason could be inadequate contingency measures. Victims are mainly those who relocated from project area upon receiving monetary compensation.

The low proportion of unforeseen impacts – 3 out of 16 (18%) suggests a high certainty in prediction of impacts for Sondu Miriu project. Also, given that 67% of the unforeseen negative impacts were already attended to is a pointer to existence of contingency plan to manage the same. These results tend to conform to those of review area 3 figure 4.2.1D on mitigation under chapter 4 that was rated as good –B. As regards implementation of mitigation measures, 83% were fully implemented while the rest were only implemented in part. Full implementation of the latter is incumbent upon completion of some of the outstanding construction works. From the foregoing sections, it appears that quality of implementation of EIS recommendations is quite satisfactory for Sondu Miriu project- atleast so far (construction phase). This is quite in agreement with what Arebo (2005) found out in Ethiopia through similar research.

Arebo (2005) found out from two projects studied that impact management is a relatively neglected practice during project operation but better implemented during construction phase. He attributes this to better allocation of resources and commitment by stakeholders during construction phase than in operation phase. Since this study is only limited to construction phase, the findings can only agree with those of Arebo thus far. Wood (1995) too indicated that mitigation of the impacts of some projects in developing countries is considered only during EIA process and is implemented in fewer cases. UNEP 2002 also noted that although implementation and follow up are critically important, they are often neglected stages in EIA process. At least till construction phase, the findings on Sondu Miriu defy the foregoing observations and that indeed is very positive. It can only be hoped that Sondu project will stand to defy the above findings throughout the project phases.

It should be mentioned that EIS for Sondu was carried out by foreign consultant and implementation of the project is also being performed by foreign contractor with part of the works sublet to local contractors but the former remains in charge of the entire project. In addition, this project stalled for about two years just after one year since its commencement a result of dissatisfaction among some stakeholders. The previous history could have influenced the current commitment by both the proponent and contractor to environmental issues. It would have been of interest to conduct a similar study on a project funded and implemented purely by the government of Kenya. Time and financial resources, however could not allow this.

A second source of information on implementation of EMP was from the project-affected people (PAP). Six main recommendations were used to gather views from PAP concerning Sondu project. The recommendations were aimed at addressing the concerns raised by PAP during scoping stage of the EIA process (refer to section 4.4). They included realignment of 4.5 km long discharge channel to minimize number of bisected household plots, providing acceptable compensation to the PAP, provision of a gravity community water supply scheme, careful disposal of waste material, restoration of damaged sites and issues concerning health.

According to the interviewees, there was committed from the project stakeholders to implement and mitigate the actions according to the EIS. Out of the six recommendations, only one (17%) was considered unsatisfactory by 60% of them. The respondents were unhappy with the manner waste material was being disposed. They had preferred to have the deep gulleys that have developed as a result of soil erosion over past years in the project area to be filled up using excavated material from project site. These gulleys had destroyed access routes between villages besides affecting farming activities. Part of the filling up of gulleys had been undertaken but most had not. It should however, be noted that this exercise was not part of the project activity. It can only be hope that this will eventually be looked into as a form of social responsibility to the community by the proponent as the project implementation progresses.

Overall, interviewees were satisfied with the manner the project activities had been handled so far. They indicated that the project had improved their general welfare through direct and indirect employment. One could tell from the type of housing: before the project came, most if not all family houses had grass thatched roofs. Today, atleast 70% of the houses in the project area are roofed using iron sheets – a superior material. As expected, there was still dissatisfaction among those that did not get direct jobs on the project against their expectation.

The third source of information on implementation of EIA recommendations was to be from concerned specialists. This however, was never to be. Proponent specialists were unwilling to divulge any information on the project. The same applied to personnel from the contractor. They refused to receive the questionnaires until cleared by their CEO. The process of pursuing clearance from the CEO was however not pursued due to time and financial limitations. The CEO sits about 400km away from the project area. This reaction had all to do with past experience on the project.

Previously, this project had stalled for about two years after its commencement. This had been occasioned by disputes among stakeholders. Main issues had to do with environment. Active NGOs in the region then were seen to have been behind it before local politicians picked up the matter and blew it out of proportion. The result was that the donor pulled out. It was after the contentious issues were resolved at national and local level that the donor resumed. The project that was initially earmarked for commissioning in 1997 has now been planned for 2008. Since resumption of the project construction, information on the project has always been treated in confidence more so that concerning environment. It was against this background that this research was not only unpopular to project specialists from the proponent but the contractor as well. The only specialist respondent was the District Environment Officer (DEO) who is also the representative of NEMA. He rated the implementation

of EMP as sufficient attributing the success to awareness and commitment among stakeholders, adequate funding for EMP, existence of project technical committee on environment and the legal documents on environment. Unfortunately, the DEO is not a member of the project technical committee – a situation that can cast shadow on the composition of the project environment committee.

5.4 Kenya and MDG #7: Ensuring Environmental Sustainability

To assess Kenya's track record on target 9 of MGD #7, international indicators as outlined in the Millennium Declaration have been considered; indicators 21 and 22 that indicate the proportion of a nation's land area under forest cover and proportion of nation's land area that is protected to maintain biological diversity respectively. As mentioned in section 4.4 of chapter four, target 9 has two main components. From the findings presented under the latter section, it appears that so far Kenya Government has paid more attention to realizing only one component: *reversing loss of environmental resources*. The latter component seems to be on tract and has clear milestones set out to achieving them going by state of the environment report of 2004 (GoK, 2005).

As mentioned elsewhere in this report, the focus of this study is on EIA and sustainable development. The component on integrating principles of sustainable development into country policies and plans is in this regard most important. Incidentally, it's the part of target 9 that has so far received the least attention. Many factors could be attributed to this situation. Most importantly perhaps is lack of clear indicators to measure progress on the component. Should the latter be true then there was a significant omission during development of indicators for target 9. Three indicators were given for target 9 are 21, 22 and 23. The latter indicator has to do with per capital energy consumption. This clearly shows skewness of indicators towards component on reversing loss of environmental resources. Its no wonder therefore, that Kenya is putting much effort towards achieving it by 2015 with little regard to the other component of the target. In any case, it's easier to achieve a 10% target of proportion of protected land area than to integrate good principles of sustainable development into development programmes especially at high decision-making levels, policies and plans.

To sum it up, it should be noted that target 9 of MDG #7 is much broader than just fulfilling the conditions stated under indicators 21 and 22. Whereas the indicators can be achieved relatively easily by putting in place appropriate policy interventions, the greatest challenge is and still remains the component on integrating principles of sustainable development into country policies and plans. To realise the latter will call for a change in approach of doing things. It will require that Strategic Environmental Assessment (SEA) as opposed to EIA be adopted for any development plan. That environmental concern should be considered at higher levels- decision-making, plans, policies and programmes but not just at the project level. SEA approach has not taken root in Kenya compared to EIA approach. The former is however, well recognized and captured under sections 42 and 43 of the official legal notice 101 of 2003. The challenge now is to integrate SEA in all major national and sectoral policies, plans and decision-making processes. Failure to change from hitherto approach of conducting development business in Kenya will make it almost impossible to realise MDG #7 by 2015 let alone being on track.



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6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.0 Quality of Kenyan EIA Guidelines

The assumption that inspired this research was that there exists inadequacy in EIA system in Kenya. The conclusions presented under this chapter confirm the assumption. First and foremost the study revealed that Kenya currently (2005) has no general guidelines on EIA. Their preparation was however, in draft final stage as at the time of this research. The two legal documents guiding EIA are EMCA (1999) and the legal Notice 101 of 2003. The latter is the detailed interpretation of the Act and serves as the official guideline document.

On the basis of comparing Kenyan EIA process with that of UNEP training manual of 2002 and also that of perceptions from specialists involved in EIA, the overall quality of EIA guidelines/regulations is generally satisfactory. Conclusions based on perceptions of specialists however, need to be treated with caution since only a limited number of expert organizations and people that were contacted responded.

The Kenyan EIA procedure compare quite well with that of UNEP training manual 2002. The Kenyan process in addition allows for the proponent to seek redress in the event of unsatisfactory decision by the decision maker. Sectoral based guidelines and standards are still being used in the meantime while general national guidelines are finalised. The quality of EIA stages was rated good (B) except for monitoring and mitigation (C). This was due to limited capacity of the institutions charged with this latter responsibility. It therefore gives room to crafty proponents and contractors to circumnavigate some actions.

It should however, be noted that absence of general EIA guidelines at the national level made it difficult for the researcher to adequately tailor the criteria of research questionnaire to suit the Kenyan situation. Nonetheless, aspects considered essential for best EIA practice were included in the questionnaire as much as possible. This enabled EIA specialists to give their opinions on the quality of the current EIA within the existing legal framework.

6.1.1 Quality of EISs for WRDPs in Kenya

A good EIS review system is fundamental to ensuring EIA quality assurance. Based on the results from both the review and specialists perception, the study has revealed that in spite of the deficiencies and omissions, EISs for WRDPs are in overall of satisfactory quality. Areas of inadequacies include identification of impacts, analysis of impact magnitude and significance, inadequate consideration of alternatives, monitoring requirements, lack of concise non- technical summaries, lack of indication of uncertainties/limitations and additional information/data required and finally insufficient EMP.

Foreign firms in partnership with local consulting firms conducted all the four EISs reviewed. The foreign firms also happen to have come from the respective countries that funded the development projects. This shows dependency on external expertise and financial resource support for EIS preparation. The good part was that the same partnership was given the responsibility to oversee implementation of the project. This allowed them to rectify deficiencies in their own reports without having to pass on the buck.

Use of customised review package is important for assessing quality of EIS. Since basic principles for EIA are similar for any project, use of standardized procedure and criteria for EIS review can help ensure that all aspects are covered in a structured and logical manner. Weaknesses in key areas of EIS can then be identified in an objective way and used to improve future practice. Standardised reviews packages help reduce biasness that is associated with ad hoc approaches or expert opinions.

6.1.3 Quality of implementation of EMP for Sondu Miriu project

The quality of implementation of EIS recommendations during the planning and construction phase was quite satisfactory. The review also revealed that EIS findings were not translated into actionable plans. The mitigation measures were presented in form of recommendations without allocation of responsibilities and attendant costs. Some of the shortcomings as seen in the EIS included lack of institutional arrangement for implementation, training requirements for staff to be involved, details of monitoring measures, resources required, reporting procedure and evaluation mechanism, implementation schedule for planned actions, mechanisms for quality control and enforcement and contingency plan for unforeseen events.

It should be noted that the EIS for Sondu project was prepared in 1993 before EMCA came into effect. Since the coming into effect of EMCA in 2000, most of the above shortcomings that had been missing from the EIS have now been incorporated. This explains the high success rating of the actions so far realised during this construction phase. The low proportion of unforeseen impacts and 100% occurrence of all predicted impacts during construction phase suggest high certainty in prediction of impacts for Sondu Miriu project.

Access to information in contract documents is however, difficult, as these are most of the time treated as confidential.

6.1.4 Kenya and MDG#7: Ensuring Environmental Sustainability

Realization of this goal will demand that it is implemented in synergy with other MDGs. This does not seem to be the case at the moment (2005) in Kenya. SEA approach as opposed to EIA may help to bring the realization of this goal somewhat closer to the target. Implementation of the SEA approach is however, limited by various factors among them human and financial resources to build the needed capacity in relevant institutions and stakeholders. Furthermore, Target 9 of MDG #7 does not have explicit indicators for measuring the component on integrating principles of sustainable development into country policies and plans. This too is a significant omission in the Millennium Declaration with regard to goal # 7 target 9.

Overall conclusion

In general, given the age of the relevant legislation on environment in Kenya (2000) coupled with limited awareness/capacity among proponents and other stakeholders on sound environmental managements aspects, efforts presently made towards managing environmental and socio economic consequences of development projects during implementation can be considered as satisfactory with still more to be done. There is strong need to enhance the efficiency and effectiveness of the whole EIA system by developing comprehensive EIA and review guidelines (currently absent), improve quality of EIS, EMPs and commitment to implementation and follow up on recommendations. Particular emphasis should be given to analytical stages of the EIA process such as impact identification, analysis of magnitude and significance, broad consideration of alternatives and commitment to implementation and follow up. EISs are generally descriptively stronger and analytically weak.

The consequent section outlines some of the measures suggested to help improve the EIA system in Kenya.

6.2 Recommendations

6.2.1 Improving Quality of EIA Guidelines

- There is great need to finalise the general EIA guidelines in order to aid practitioners as well a stakeholders. Once the guidelines have been made available for use, measures should also be put in place to regularly review their effectiveness and efficiency with the aim of revising and updating them appropriately.
- Explicit procedure and criteria for use during EIA stages such as impact identification, analysis of impact magnitude & significance, choice and analysis of alternatives should be developed to aid proponents and EIA practitioners.
- Development and implementation of human resource capacities of those involved in EIA in order to overcome both managerial and technical limitations.

6.2.2 Improving Quality of EISs

- In order to ensure environmental sustainability, there is need to enhance local capacity and less reliance on foreign expertise. This should include capacity of local institutions, lead agencies, local communities especially PAP and local organisations like NGOs, CBOs. This can be done by applying experiences gained from implemented programmes
- Cost effective environmental information management systems should be developed to encourage baseline environmental information gathering and storage and hence reduce the problem of data retrieval and management. This will also facilitate monitoring exercise.

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- Establish and strengthen professional codes to ensure quality of work, objectivity, rigor and professional integrity in conducting EAs. This should discourage proponents from conducting EIS just as a fulfilment of government regulation but as a means to aid best decision – making and hence best environmental management.
 - There is need to develop and apply a standardised procedure with established criteria for reviewing EISs so that weaknesses in key areas of EIS are detected, documented in an objective manner and information used to improve future practice.
 - Make provision for non-technical EIS summary so as to enhance participation of non - specialist audience in the EIA exercise.

6.2.3 Improving quality of implementation and follow up

- Enhance human and financial capacity of NEMA (currently, on average each District has only one staff) so as to enable the Authority oversee environmental issues of development projects/programmes and provide necessary technical guidance and services to proponents and other stakeholders.
- Built human capacity in lead agencies through training and recruitment of qualified personnel as well as provision of necessary financial resources and facilities and equipment. This should enable them carry out effective monitoring and follow up activities for development programmes/projects implemented under their respective departments/organisations.
- Promote programmes aimed at creating awareness on the importance of sound environmental management requirements targeting proponents, government agencies and other stakeholders. This should aim at enhancing understanding of benefits of sustainable development and thereby inspire commitment to integrating environmental and social concerns in development proposal.
- Develop a standardised format for EMP containing all the important elements for use by all proponents. This will aid the proponents and make work of reviewers and those responsible for follow up actions easier.
- Incorporation of environmental specifications in engineering contractual documents so as to reinforce commitment to the same by concerned parties.
- It is important to create partnership and cooperation between project proponents and local stakeholders in designing and implementing environmental management actions. This yields better results as was seen in the case of Sondu Miriu hydropower project.

6.2.4 Further research

The following areas were not covered under this research and are hereby recommended for further research

EIA Guidelines

Strategic Environmental Assessment (SEA) is well captured and addressed under section 42 and 43 of the legal notice 101, 2003 of Kenya. Hitherto, only EIA is given attention. With current focus of development turning to MDGs, it would be important to equally pay attention to SEA approach if MDG #7 will have to be achieved. Further research is therefore recommended on SEA practice in Kenya.

There is also need to carryout an evaluation of the current public/stakeholder participation stage(s) of the EIA process to establish its effectiveness in Kenya.

EISs

This study was restricted to water related development projects only. The sample size was also limited to only four. A more inclusive study of all types of EISs (covering all types of development projects) and of larger sample size is therefore recommended. Also a bigger number of specialists from a wide range of relevant organisations should be contacted for expert opinion. This will enable more comprehensive conclusions to be made on the quality of EISs and EIA practice in Kenya.

Implementation and follow up

This study was limited to only one project that is currently under construction phase. The project is also funded through foreign aid and implementation is by foreign contractor. It is recommended that further research involving more projects at operation phases be conducted. In addition, it would be of interest to compare commitment to implementation of EIA recommendations between projects funded and implemented by the Government of Kenya and those funded and implemented by foreign agencies.



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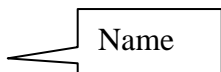
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8.0 APPENDICES

Appendix 1: Location map of selected projects for EISs review



Key:

 Name Name of the selected project and its approximate location in Kenya

 Nairobi – capital city of Kenya

Appendix 2: Questionnaire for Assessment of Perceptions of Professionals on the Quality of Kenyan EIA Guidelines

Name: _____

Position: _____

Institution _____ Experience in EIA guidelines preparation/review: _____

Guidance to the Questionnaire:

This questionnaire has been developed to assist in the systematic and objective review of EIA guidelines of Kenya. The review is intended to assess the provisions or procedures described for the main elements of the EIA process and identify and locate where specific deficiencies lie if any, in the guidelines. The main components to be covered in the assessment are EIA procedure, stakeholders' participation, standards and guidelines, and environmental information.

The respondent is requested to answer each question on the basis of the contents of the Kenyan EIA guidelines. Decide which symbol is appropriate for each issue or task and simply check the box corresponding to the task with the chosen symbol. Explanation of the symbols is given in the following Table. An empty box is given at the end of each main issue or task to allow the respondent to provide any other additional information or comments. In addition, some open questions are given at the end of the questionnaire for which the respondent is requested to give answer.

Symbol	Explanation
A	Well performed and complete, no important omissions.
B	Generally satisfactory and complete, only minor omissions and inadequacies.
C	Just satisfactory despite omissions and/or inadequacies.
D	Not satisfactory because of significant omissions or inadequacies though parts are attempted.
E	Very unsatisfactory, poorly done or not attempted.
NA	The issue is not applicable.

Tasks	A	B	C	D	E	NA
1. Meeting Specific Conditions: What is the level of consideration of Kenyan situations/conditions in the guidelines? (Are Kenyan situations sufficiently considered?)						
2. Stages in EIA Process: Are necessary procedures or requirements described for each stage or element of EIA process? Judge the level of descriptions for each stage or element given below.						
2.1 Screening						
2.2 Scoping						
2.3 Assessing						
2.4 Mitigating						
2.5 Reporting						
2.6 Reviewing						
2.7 Decision-making						
2.8 Monitoring and managing						
2.9 Public involvement						
Comments:						
3. Stakeholder Participation:						
3.1 What is the level of provisions given for public involvement and consultation?						
3.2 Are the key stakeholders that must be involved in the EIA process described in the guidelines? Are the following stakeholders included?						
i. Interested and affected parties (local people & communities, interested groups such as NGOs, etc.)						
ii. Environmental protection agencies (NEMA, Kenya Wildlife services etc).						
iii. National and regional government ministries, departments and statutory agencies whose remit and responsibilities include areas and sectors likely to be affected.						
iv. Proponent and other beneficiaries.						
v. Private sector bodies such as private business interest groups, trade associations, or professional societies.						
vi. Consulting firms						
vii. Licensing agencies						
viii. Others (list them if they were given):						
3.3 Are adequate descriptions of the roles and responsibilities of each stakeholder, and the stages at which they should be involved given in the guidelines? Judge for the following stakeholders.						
i. Interested and affected parties (local people & communities, interested groups such as NGOs, etc.)						
ii. National and regional government ministries, departments and statutory agencies whose remit and responsibilities include areas and sectors likely to be affected.						

Tasks	A	B	C	D	E	NA
iii. Environmental protection agencies.						
iv. Proponent and other beneficiaries						
v. Private sector bodies such as private business interest groups, trade associations, or professional Societies.						
vi. Consulting firms						
vii. Licensing agencies						
viii. Others (list them if they were given):						
Comments:						
4. Standards and Guidelines:						
4.1 Are the standards and guidelines that should or might be applied in EIA process provided in the guidelines?						
4.2 Are the limitations, if any, in the available or availability of environmental standards and guidelines indicated?						
Comments:						
5. Environmental Information:						
5.1 Description of the baseline environment						
5.1.1 Are all parameters necessary to sufficiently describe each environmental component given in the guidelines? Judge for each environmental component given below.						
i. Spatial Component (land use, settlement & development planning, public facilities & landscape).						
ii. Physical Component (land, climate, physiography, hydrology/water bodies).						
iii. Biological Component (flora, fauna, conservation areas).						
iv. Socio-economic & Culture Component (demography, economic & employment, settlement, health, culture, institutions & services; sites of cultural, historical, archaeological, religious value; etc.)						
5.1.2 Are all indicators necessary to sufficiently describe each parameter given in the guidelines? Judge for each environmental component given below.						
i. Spatial Component						
ii. Physical Component						
iii. Biological Component						
iv. Socio-economic and Culture Component						
5.2 Environmental impact						
5.2.1 Are all parameters necessary to assess environmental impacts or to describe the changes in each environmental component given? Judge for each environmental component given below.						
i. Spatial Component						
ii. Physical Component						
iii. Biological Component						
iv. Socio-economic and Culture Component						

Tasks	A	B	C	D	E	NA
5.2.2 Are all indicators necessary to assess environmental impacts or to describe the changes in each parameter given? Judge for each environmental component given below.						
i. Spatial Component						
ii. Physical Component						
iii. Biological Component						
iv. Socio-economic and Culture Component						
5.3 Environmental mitigation						
5.3.1 Are practices or measures that should be followed for mitigating major environmental impacts given?						
5.4 Environmental monitoring						
5.4.1 Is description of the main elements that should be considered in monitoring environmental impacts given? Three types of monitoring can be undertaken for a project. What is the level of consideration given for these in the guidelines? (these are given below.)						
i. Impact monitoring (scale and extent of impacts caused by the project).						
ii. Mitigation monitoring (whether mitigation actions have been implemented in accordance with agreed schedule and are working as expected); and						
iii. Compliance monitoring (amount/content of waste or effluent streams).						
Comments:						
6. Updating the Guidelines:						
6.1 Are the guidelines keeping pace with changing ideas on best practice?						
6.2 Are the guidelines not seen as static documents? (The preferred situation is they should not be seen as static documents).						
6.3 Are the guidelines subject to critical review and revision through regular updating?						
6.4 Are there no major gaps in the guidelines? (The preferred situation is there should not be major gaps).						
Comments:						
7. Application of the Guidelines:						
7.1 Are the guidelines applicable or effective in practice?						
7.2 Problems in implementing the guidelines, if any:						
7.2.1 Is there no circumnavigation (ineffective implementation) or otherwise avoiding implementation of the guidance set-out in the guidelines by development proponents and other stakeholders?						
7.2.2 What is the level of managerial capacities to implement the guidelines?						
7.2.3 What is the level of technical capacities to implement the guidelines?						
7.2.4 Is there sufficient integration of EIA works at key decision points in relation to feasibility and similar studies in the project cycle?						
Comments:						

Open Questions

- 1 What are the main strengths in the guidelines?
- 2 What are the main weaknesses in the guidelines?
- 3 What are the notable gaps in the guidelines, if any?
- 4 What are the main problems, if any, encountered in implementing the guidelines or how are the guidelines in practice?
- 5 Do you think the guidelines need to be revised to meet changing ideas on best practice? Yes / No. If yes, what are the main components or issues need to be revised?
- 6 Is there any plan to revise and update the guidelines? Yes/No. If yes, what are the key components or issues to be revised/addressed?
- 7 A) How often do EIA practitioners use the guidelines in carrying out EIAs? (Choose one).
 - a) Always b) Commonly c) Occasionally d) Never

B) How often do you (as a person) use the EIA guidelines?
- 8 What are the factors contributing to the condition in Question No. 7?

Appendix 3A: List of Review Topics - Review questionnaire for quality of EISs

Name: _____
Position/title: _____
Institution: _____
Experience in EIS preparation/review: _____

Guidance to the questionnaire

Under this section, two separate specialists in EIA process gather information from same EIS of a selected project. The two results are compared and where significant differences occur, they are systematically and mutually resolved before the final result is entered in a collation sheet.

A list of questions has been developed to address four mains areas of the EIS and help determine its overall quality. These are:

- Description of the project, the affected environment and the baseline conditions
- Identification and evaluation of impacts
- Alternatives, mitigation and monitoring and
- Communication of the results/findings

Summary of the symbols to be used by the respondent in answering the questions is given in the table below.

Symbol	Explanation
A	<i>Excellent</i> : Relevant tasks well performed, no important tasks left incomplete.
B	<i>Good</i> : Satisfactory and complete, only minor omissions and inadequacies.
C	<i>Satisfactory</i> : Just satisfactory despite some omissions and/or inadequacies.
D	<i>Unsatisfactory</i> : Just unsatisfactory because of important omissions or inadequacies.
E	<i>Poor</i> : Not satisfactory because of significant omissions or inadequacies.
F	<i>Very poor</i> : Very unsatisfactory, important task(s) poorly done or not attempted.
NA	<i>Not applicable</i> : The Review topic is not applicable or it is irrelevant in the context of this Statement.

1. Description of the Project, the Affected Environment and the Baseline Conditions

1.1 Description of the project

- 1.1.1 Are the purpose(s) and objectives of the development project clearly explained?
- 1.1.2 Are the main features of the project including the design and size clearly described? Are diagrams, plans or maps used for this purpose?
- 1.1.3 Are the physical presence and appearance of the completed project within the receiving environment indicated?
- 1.1.4 Are the nature and methods of construction and operation intended to be employed in the project described?
- 1.1.5 Are the nature and quantities of raw materials needed during both the construction and operational phases estimated and described?
- 1.1.6 Is the description of any additional services (water, electricity, health services etc.) and developments required as a consequence of the project given?
- 1.1.7 Is the description of the project's potential for accidents, hazards and emergencies given?
- 1.1.8 Is the nature and status of the decision(s) for which the environmental information has been prepared, indicated?

1.2 Project site description

- 1.2.1 Is the land area taken up by the project defined and its location clearly shown on a map?
- 1.2.2 Are the uses to which this land will be put described and the different land use areas demarcated?

-
-
- 1.2.3 Is the estimated duration of the construction phase and operation phase given?
- 1.2.4 Are the numbers of workers to be involved in the development activity during both construction and operation estimated?
- 1.2.5 Are the means of transporting raw materials and products to and from the site and the approximate quantities involved described?
- 1.2.6 Is the reinstatement and after-use of land-take during construction described?

1.3 Wastes (all residual process materials, effluents and emissions)

- 1.3.1 Are the types and quantities of waste matter, energy and other residual materials, and the rate at which these will be produced estimated?
- 1.3.2 Are the ways in which it is proposed to handle and/or treat these wastes and residuals indicated, together with the routes by which they will eventually be disposed of to the environment?
- 1.3.3 Are the methods by which the quantities of residuals and wastes were obtained indicated? If there is uncertainty, is it acknowledged and ranges of confidence limits given?

1.4 The affected environment

- 1.4.1 Is the environment likely to be affected by the development indicated with the aid of a suitable map of the area?
- 1.4.2 Is the wider environment likely to be affected by the development defined to include any significant effects occurring away from the immediate construction site?
- 1.4.3 Are the land uses on the site(s) and in surrounding areas described?

1.5 Baseline conditions

- 1.5.1 Are the components of the affected environments identified and described, and the methods and investigations undertaken for this purpose disclosed?
- 1.5.2 Are existing data sources searched and utilised?
- 1.5.3 Are the baseline conditions clearly described using appropriate data?

2. Identification and Evaluation of Key Impacts

2.1 Identification of impacts

- 2.1.1 Are the potential impacts identified and categorized as direct and indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects?
- 2.1.2 Are the potential impacts on receptors: human beings, flora and fauna, soil, water, air, climate, landscape, material assets, cultural heritage, and the interactions between them identified?
- 2.1.3 Are the impacts determined as the deviation from baseline conditions?
- 2.1.4 Are impacts identified using a systematic methodology such as project specific checklists, matrices, panels of experts, consultations, etc, and the rationale for using them given?

2.2 Scoping of Impacts

- 2.2.1 Is a genuine consultation and involvement made with all stakeholders (the general public, relevant public agencies, relevant experts and special interest groups) to appraise them of the project and its implication?
- 2.2.2 Are key impacts identified and selected for more intense investigation?
- 2.2.3 Is a copy or summary of the main comments from consultees and the public, and measures taken to respond to these comments included?
- 2.2.4 Project-generated impacts should be differentiated from other changes resulting from non-project activities and variables.

2.3 Prediction of impact magnitude

-
-
- 2.3.1 Are the data used to estimate the magnitude of the main impacts sufficient and clearly described or their sources identified? Are the gaps in the required data indicated and the means used to deal with them in the assessment explained?
 - 2.3.2 Are the methods used to predict impact magnitude described and appropriate to the size and importance of the projected impact?
 - 2.3.3 Are predictions of impacts expressed in measurable quantities with ranges and/o confidence limits as appropriate, and qualitative descriptions as fully defined as possible?

2.4 *Assessment of impact significance*

- 2.4.1 Is the significance to the affected community and to society in general described and clearly distinguished from impact magnitude?
- 2.4.2 Is the significance of an impact assessed taking into account appropriate national and international quality standards as well as the magnitude, location and duration of the impact in conjunction with national and local societal values?
- 2.4.3 Is the choice of standards, assumptions and value systems used to assess significance justified and any contrary opinions summarized?

3. *Alternatives, Mitigation and Monitoring*

3.1 *Alternatives*

- 3.1.1 Are realistic and genuine alternative sites considered where these are practicable and available, and the main environmental advantages and disadvantages of these discussed and the reasons for the final choice given?
- 3.1.2 Are, where available, realistic alternative processes, designs and operating conditions considered at an early stage of project planning and the environmental implications of these investigated and reported where the proposed project is likely to have significantly adverse environmental impacts?
- 3.1.3 If unexpectedly severe adverse impacts, which are difficult to mitigate, are identified, are alternatives rejected in the earlier planning phases re-appraised?

3.2 *Mitigation measures*

- 3.2.1 Are mitigation measures proposed to avoid, reduce or offset the significant adverse impacts of the proposal? Are any residual or unmitigated impacts indicated and justification offered as to why these impacts should not be mitigated?
- 3.2.2 Are the mitigation methods considered include modification of the project, compensation and the provision of alternative facilities as well as pollution control?
- 3.2.3 Is the expected effectiveness of the mitigation methods indicated?
- 3.2.4 Are the reasons for choosing the particular type of mitigation, and the other options available, described?
- 3.2.5 Are any adverse environmental effects of mitigation measures investigated and described?
- 3.2.6 Is the potential for conflict between the benefits of mitigation measures and their adverse impacts considered?
- 3.2.7 Are details of how the mitigation measures will be implemented and function over the time span for which they are necessary given?

3.3 *Monitoring*

- 3.3.1 Are monitoring arrangements proposed to check the environmental impacts resulting from the implementation of the project and their conformity with the predictions within the Statement?
- 3.3.2 Does the scales of these monitoring arrangements correspond to the likely scale and significance of deviations from expected impacts?
- 3.3.3 Is provision made to adjust mitigating measures where unexpected adverse impacts occur?

4. Communication of Results

4.1 Layout of information

- 4.1.1 Is there an introduction briefly describing the project, the aims of the environmental assessment and how those aims are to be achieved?
- 4.1.2 Is information logically arranged in sections or chapters and the whereabouts of important data signaled in a table of contents or index?
- 4.1.3 Is there chapter summaries outlining the main findings of each phase of the investigation, unless the chapters themselves are very short?
- 4.1.4 When information from external sources are introduced, is the original source acknowledged at that point in the text, and a full reference to the source included?

4.2 Presentation of information

- 4.2.1 Is information presented so as to be comprehensive to the non-specialist? Are tables, graphs and other devices used as appropriate, and unnecessary technical or obscure language avoided?
- 4.2.2 Are technical terms, acronyms and initials defined, either when first introduced into the text or in a glossary, and important data presented and discussed in the main text?
- 4.2.3 Is the Statement presented as an integrated whole, and summaries of data presented in separately bound appendices introduced in the main body of the text?
- 4.2.4 Are the relevant EIA legislation, name of organization preparing the Statement, and name of the developer, and name of competent authority (ies) mentioned?
- 4.2.5 Is superfluous information (i.e. information not needed for the decision) avoided?

4.3 Emphasis

- 4.3.1 Is prominence and emphasis given to potentially severe adverse impacts as well as to potentially substantial favorable environmental impacts?
- 4.3.2 Is the Statement unbiased; not lobby for any particular point of view? Are adverse impacts not disguised by euphemisms or platitudes?

4.4 Non-technical summary

- 4.4.1 Is there a non-technical summary of the main findings and conclusions of the study? Are technical terms, lists of data and detailed explanations of scientific reasoning avoided?
- 4.4.2 Does the summary cover all main issues discussed in the Statement and its principal findings and recommendations?

4.5 Uncertainties in information

- 4.5.1 Are any gaps in the required data indicated and the means used to deal with them in the assessment explained?
- 4.5.2 Are any difficulties in assembling or analyzing the data needed to predict impacts, and any basis for questioning assumptions, data or information acknowledged and explained?

Collation sheet for EIS review

Overall assessment.....

1	.....	2	.....	3	.....	4	.....
1.1	.....	2.1	.....	3.1	.....	4.1	.....
1.1.1	.....	2.1.1	.....	3.1.2	.....	4.1.2	.....
1.1.3	.....	2.1.3	.....	3.1.3	.....	4.1.3	.....
1.1.4	.....	2.1.4	.....			4.1.4	.....
1.1.5	.....					
1.1.5	.....					
1.1.6	.....					
1.1.7	.....					
1.2	.....	2.2	.....	3.2	.....	4.2	.....
1.2.1	.....	2.2.1	.....	3.2.1	.....	4.2.1	.....
1.2.2	.....	2.2.2	.....	3.2.2	.....	4.2.2	.....
1.2.3	.....	2.2.3	.....	3.2.3	.....	4.2.3	.....
1.2.4	.....	2.2.4	.....	3.2.4	.....	4.2.4	.....
1.2.5	.....			3.2.5	.....	4.2.5	.....
1.2.6	.....			3.2.6	.....	
				3.2.7	.....	
1.3	.....	2.3	.....	3.3	.....	4.3	.....
1.3.1	.....	2.3.1	.....	3.3.1	.....	4.3.1	.....
1.3.2	.....	2.3.2	.....	3.3.2	.....	4.3.2	.....
1.3.3	.....	2.3.3	.....	3.3.3	.....	
1.4	.....	2.4	.....			4.4	.....
1.4.1	.....	2.4.1	.....			4.4.1	.....
1.4.2	.....	2.4.2	.....			4.4.2	.....
1.4.3	.....	2.4.3	.....			
1.5	.....					4.5	.....
1.5.1	.....					4.5.1	.....
1.5.2	.....					4.5.2	.....
1.5.3	.....					

Table 1.0: Additions to Lee- Colley EIS review package

Review Area	Review category	Sub - category (additions to Lee –Colley package)
1.0	1.1	1.1.6, 1.1.7, 1.1.8
	1.2	1.2.6
	1.4	1.4.3
4.0	4.2	4.2.4, 4.2.5
	4.5	4.5.1, 4.5.2

Appendix 3B: Checklist for Assessing Perceptions of Specialists on the Quality of EIS of WRDP

Name: _____

Institution: _____

Experience in EIS review: _____

(WRDP = Water Resources Development Project)

Description of the Checklist

This checklist has been developed to assist in the systematic and objective review of EISs (EIA reports) of water resources projects. There is a common understanding that a good EIS is one that presents findings covering all assessment tasks employing appropriate methods of information collection, analysis and reporting. In particular, these should be used to:

1. Describe the project and the baseline environmental conditions which it may influence;
2. Predict the magnitude and significance of the expected changes to those environmental conditions;
3. Identify and assess the impacts of alternatives investigated and proposed mitigation measures; and
4. Present the findings in an appropriate form for the intended users of the statements.

The checklist has been constructed based on this understanding of good practice and the regulatory and procedural context in Kenya. The tasks that need to be undertaken at each stage of EIA process have also been taken into consideration.

How to fill the Checklist

The respondents are requested to judge each task based on their experience on the quality of most EISs of WRDPs. Decide the appropriate symbol for each task or criteria and simply check the box corresponding to the criteria and chosen symbol. Explanation of the symbols is given in the following Table. An empty box is given at the end of each assessment area to allow the respondent to provide the main weaknesses and strengths in the assessment area and/or any other comments.

Symbol	Explanation
A	Excellent: No relevant task left incomplete.
B	Good: Only minor omissions and inadequacies.
C	Satisfactory: Satisfactory despite omissions and inadequacies.
D	Unsatisfactory: Parts well attempted, but must be as a whole considered just unsatisfactory because of omissions and inadequacies.
E	Poor: Significant omissions and inadequacies.
F	Very poor: Important tasks poorly done or not attempted.
NA	Not applicable. The review topic or task is not applicable or it is irrelevant in the context of statements of WRDPs context of Statements of WRDPs.

The Checklist

Description of the Tasks	A	B	C	D	E	F	NA
1. DESCRIPTION OF THE DEVELOPMENT, THE LOCAL ENVIRONMENT AND THE BASELINE CONDITIONS							
1.1 <i>Description of the development:</i> Were sufficient data provided to enable a non-specialist to visualize the project? The purpose(s) of the development, the physical characteristics, scale and design should be described. Activities likely to cause environmental impacts and mitigation measures to be incorporated into the project must be listed.							
1.2 <i>Site description:</i> Were sufficient data provided to enable a non-specialist to visualize the site and local environment? The on site land requirements of the development and the duration of each land use; land tenure, surrounding land uses, physical constraints, infrastructure services in and around the project must be described.							
1.3 <i>Wastes:</i> Were the types and quantities of wastes, which might be produced estimated and the proposed disposal routes to the environment described?							
1.4 <i>Environment description:</i> Were the area and location of the environment likely to be affected by the development proposals described with the aid of suitable maps?							
1.5 <i>Baseline Conditions:</i> Were the affected environments (the biophysical, socio-economic & cultural components) identified and described as they were before the project, and as they could be expected to develop if the project were not to proceed? Existing data sources should be searched and utilized.							
<i>Comment:</i>							
2. IDENTIFICATION AND EVALUATION OF KEY IMPACTS							
2.1 <i>Definition of impacts:</i> Were potential impacts of the development on the environment investigated and described? Impacts should be broadly defined to cover all potential effects on the environment and determined as the predicted deviation from the baseline state. This component should basically cover: A description of the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project. Investigation and description of the above types of effects with particular regard to identifying effects on human beings, flora and fauna, soil, water, air, climate, landscape, material assets, cultural heritage and the interaction between these.							
2.2 <i>Identification of impacts:</i> Were methods capable of identifying all significant impacts used? Impacts must be identified using a systematic methodology such as project specific checklists, matrices, panels of experts, consultations, etc Was a brief description of the selected method (above) and the rationale for using it given							



Description of the Tasks	A	B	C	D	E	F	NA
2.3 <i>Scoping</i> : Were key impacts identified, taking into account the views of interested and affected parties, and the main investigation centered on these? Relevant stakeholders must be contacted and consulted to collect their opinions and concerns or to appraise them of the project and its implications. Were Key impacts investigated in detail? Were reasons for leaving out the other impacts explained?							
2.4 <i>Prediction of impact magnitude</i> : Were the indications of the likely magnitude of the impacts sufficient? The likely impacts of the development on the environment should be described. The data used to estimate the magnitude of the main impacts should be sufficient for the task and should be clearly described; the methods used to predict impact magnitude must be described; and where possible predictions of impacts should be expressed in measurable quantities with ranges and/or confidence limits as appropriate.							
2.5 <i>Assessment of impact significance</i> : Was the expected significance due to projected impacts to the community and society estimated? The sources of quality standards, together with the rationale, assumptions and value systems used in assessing significance, should be fully described.							
<i>Comments:</i>							
3. ALTERNATIVES AND MITIGATION							
3.1 <i>Alternatives</i> : Were all the reasonable alternatives considered and adequately assessed? Feasible alternatives (sites, designs and operating conditions) to the proposed project have been considered. These should be outlined in the Statement, the environmental implications of each presented, and the reasons for their rejection briefly discussed, particularly where the preferred project was likely to have significant adverse environmental impacts.							
3.2 <i>Scope and effectiveness of mitigation measures</i> : Were all significant adverse impacts considered for mitigation? Evidence should be presented to show that proposed mitigation measures would be effective when implemented. Any residual or unmitigated impacts must be indicated and justification offered as to why these impacts should not be mitigated.							
3.3 <i>Commitment to mitigation</i> : Were developers committed to, and capable of, carrying out the mitigation measures and did they present plans of how they proposed to do so? Details of how the mitigation and monitoring measures would be implemented and function over the time span for which they are necessary should be given. Were monitoring arrangements proposed to check environmental impacts arising from project implementation and their conformity with predictions in the EIS?							
<i>Comments:</i>							
4. COMMUNICATION OF RESULTS							

4.1 <i>Layout</i> : Was the layout sufficiently clear and logical? The layout of the Statement should enable the reader to find and assimilate data easily and quickly. External data sources should be acknowledged.							
4.2 <i>Presentation</i> : Was information presented so as to be comprehensible to the non-specialist, and presented as an integrated whole? Technical terms, acronyms and initials should be defined, and important data must be presented and discussed in the main text.							
4.3 <i>Emphasis</i> : Was the information provided in unbiased manner? The information should be presented without bias and should receive the emphasis appropriate to its importance in the context of the EIS.							
4.4 <i>Non-technical summary</i> : Was there a clearly written non-technical summary of the main findings of the study and how they were reached? It should cover all main issues discussed in the Statement and should contain a brief description of the project and the environment, an account of the main impacts and mitigation measures to be undertaken, and a description of any significant residual impacts.							
<i>Comment:</i>							
<i>Comment:</i>							



Opens Questions

1. Has the quality of EISs changed over time? Yes/No
2. If your answer above is yes, what is the trend?
3. What is responsible for the above changes/trend?
4. Any other general views on EIS?

Appendix 4A: Questionnaire for Assessing the Perceptions of Concerned Professionals on Implementation and Effectiveness of Recommendations of EMP for Sondu Miriu hydropower project

Name: _____

Position: _____

Institution: _____

Experience in EIA Practice: _____

Guidance to the Questionnaire:

This questionnaire has been developed to assist in the systematic assessment of the environmental management measures implemented for large-scale water resources projects in Kenya. This assessment focuses on the post-approval phase of EIA, i.e. after decision is made for the development proposal to proceed for implementation. This study is intended to assess the implementation of the mitigation and monitoring requirements recommended in an EIS and their effectiveness. The main issues or components covered in the assessment are environmental management plan (EMP), implementation of mitigation and monitoring requirements, environmental supervision and auditing.

The respondents are requested to answer each question or judge each criterion on the basis of their experience on implementation of environmental mitigation and monitoring measures, and follow up activities in most WRDPs. An issue or a criterion can be categorized as *excellent*, *good*, *satisfactory*, *poor*, *very poor* or *no opinion*. Therefore, the respondent is requested to check the box corresponding to the criterion and the chosen criterion met. Definitions of the rating categories are given below. An empty box is given at the end of the questionnaire to allow the respondent to provide any comments or suggestions.

Definitions of the rating categories:

A: Excellent— thoroughly and completely performed.

B: Good — minor omissions and deficiencies.

C: Satisfactory — some omissions and deficiencies.

D: Poor — significant omissions and deficiencies.

E: Very poor — fundamental flaws and weaknesses

F: No opinion — insufficient basis/experience on which to judge.

	Description	Rating of the criteria					
	Questions/Criteria	Excellent	Good	Satisfactory	Poor	Very poor	No opinion
1	To what extent is Environment Management Plan (EMP) prepared as part of condition setting for this project?						
2	How is the sufficiency of EMP in terms of the following elements/are these elements sufficiently designed?						
	2.1 Mitigation measures - specific requirements that will minimize, avoid, or compensate for impacts.						
	2.2 Provisions for monitoring the scale & extent of impacts, implementation of mitigation actions & their performance, and compliance to agreed conditions including meeting specified standards.						
	2.3 Programmes of monitoring and auditing for coping with and correcting unanticipated surprise?						
	2.4 Specific institutional arrangements for implementing the mitigation and monitoring requirements.						
	2.5 Implementation schedule for the EMP.						
	2.6 Cost estimates & sources of funds for implementing the EMP.						
	2.7 Integration of the EMP with the project schedule.						
3	Are environmental management actions sufficiently incorporated in the bidding and contract documents, so that contractors can understand what is expected of them in the environmental area?						
4	How well are the mitigation measures of significant environmental impacts usually implemented?						
5	How effective are the mitigation measures implemented to reduce impacts to acceptable levels?						
6	Are the mitigation actions applied at the right time and sufficiently integrated with project activities?						
7	How well is the monitoring program implemented/followed?						
	i. Impact monitoring – scale & extent of impacts caused by the project.						
	ii. Mitigation monitoring - whether mitigation actions have been implemented in accordance with agreed schedule and are working as expected; and						
	iii. Compliance monitoring - compliance to agreed conditions including meeting specified standards						
8	How effective are the implemented monitoring actions in evaluating impacts, performance of mitigation measures, and compliance to agreed conditions or specifications.						
9	How well is the surveillance/supervision of terms and conditions of approval undertaken?						
10	How well is the environmental auditing carried out?						
11	What is the extent of consultation and participation of the relevant stakeholders prior to and during the implementation of mitigation actions?						

Appendix 4B: Questionnaire for Assessing the Opinion of Project Affected People on Implementation and Effectiveness of EMP for Sondu Miriu Hydropower Project

	Questions	Excellent	Good	Satisfactory	Poor	Very poor	No opinion
1	What was the level of preparation to mitigate the adverse environmental and social impacts of the dam project, and to monitor impacts and performance of mitigation measures?						
2	How well were the mitigation measures of significant adverse impacts implemented?						
3	How effective were the mitigation measures implemented to reduce impacts to acceptable levels?						
4	Were the mitigation measures implemented at the correct time, in the correct way and at the correct place?						
5	How well were the monitoring programmes implemented?						
6	How effective were the implemented monitoring actions to evaluate impacts, performance of mitigation measures, and compliance to agreed conditions or specifications?						
7	What was the extent of consultation and participation of the PAP prior to and during the implementation of mitigation actions?						
8	How was the adequacy of the following elements with respect to the expected requirements for effective implementation of mitigation measures?						
	a) Appropriateness and feasibility of the designed mitigation measures.						
	b) Commitment of the following stakeholders						
	i. Project owner(KenGen) in implementing the mitigation measures.						
	During study & construction						
	During operation						
	ii. Project contractor in complying with environmental protection or mitigation requirements.						
	iii. Local organizations in implementing the management actions assigned to them.						
	During preparation & construction						
	During operation						
	iv. Regulatory agency (ies) in enforcing or ensuring compliance with agreed conditions.						
	c) Technical capacity to implement the mitigation and monitoring measures; judge for the following stakeholders.						
	i. Project owner (KenGen)						
	ii. Project contractor(s)						
	iii. Concerned local organizations						
	iv. Regulatory agency (ies)						
	d) Funding for implementation of the mitigation plan						
	e) Enforcement & follow up for ensuring compliance						
9	What is the overall assessment of the environmental management or mitigation actions implemented to reduce or avoid significant impacts?						
10	What is the overall assessment of the monitoring and follow up measures implemented to evaluate impacts, performance of mitigation measures, and compliance to agreed conditions?						
11	In general what is the level of living standard of the affected community population compared to pre-project situation?	Better-off		Same level		Worsened	