

# Environmental Impact Assessment and Sustainable Development in Africa: A Critical Review

Campion Benjamin Betey<sup>1</sup> & Essel Godfred<sup>2</sup>

<sup>1</sup> AG Physiogeographie, Universität Bremen, Germany

<sup>2</sup> Woodman and Padfield Associates, P. O. Box UP 707, Kumasi, Ghana

Correspondence: Campion Benjamin Betey, AG Physiogeographie, Universität Bremen, Germany. Tel: 49-421-2186-3487. E-mail: [bbcampion@uni-bremen.de](mailto:bbcampion@uni-bremen.de)

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## Abstract

Environmental impact assessment (EIA) has evolved and become part of major project requirements in many countries, since its introduction in the United States in 1970. However, its contribution to sustainable development and reduction in poverty of people affected by projects has not been assessed in developing countries, especially in Africa. Therefore, this review article examines environmental laws and institutions in selected African countries. Through comparative study of EIA laws, procedures and practices, their effects on sustainable development and reduction in poverty are discussed. The study revealed that successful integration of environmental impact assessments into planning and decision-making processes in these countries has not yet been realised, for its application is mostly limited to the project level. However, Africa appears to be on the right footing towards sound environmental protection and resource management, but lack of strong institutions and human resource capacity, rapid population growth, lack of direct investment in project communities, illiteracy and corruption remain the greatest threats to the success of EIA. It recommends that corporate social responsibility, specifying a fixed percentage of profit for local development, be made part of EIAs. It enjoins that a critical mass of a project's community be empowered to actively participate in the early phases of the EIA process to improve benefits to communities and society at large. Sustainable development could thus be achieved at the project level when businesses and communities cooperate for their mutual benefits.

**Keywords:** environmental impact assessment, sustainable development, poverty alleviation, corporate social responsibility, institutions

## 1. Introduction

The quest to safeguard the environment from further degradation has been of global concern for many years now. Many countries have had long histories of environmental protection through indigenous local institutions, taboos, norms and cultural values (Appiah-Opoku, 2001; Appiah-Opoku & Mulamootil, 1997). However, it is worth noting that environmental management is not achieved only through environmental laws but also through the application of various formal and informal administrative mechanisms (Appiah-Opoku, 1999). In January 1970, the US National Environmental Policy Act (NEPA) introduced the first formal requirements and procedure for EIA. Since then, governments in more than 100 countries (El-Fadl & El-Fadel, 2004) have adopted provisions for the implementation of EIA. Provisions related to EIA began appearing in developing countries' legislation during the 1970s, shortly after the United States enacted NEPA in 1969. References to EIA were made in the environmental legislation of Malaysia, Ecuador and the Philippines.

The requirement of a state to conduct an environmental impact assessment (EIA) in respect of activities with the potential to significantly affect the environment is reflected in Principle 17 of the UN Conference on Environment and Development (UNCED) (United Nations, 1992). The UNCED recognised EIA as a key tool for environmental protection and sustainable development. By implication, unless sustainable development criteria are included specifically among those used in environmental assessment, EIA may not contribute to sustainable development. This is crucial if developing countries are to integrate environmental concerns into their development plans. It is worthy to note that, after attaining independence, the development of most African countries has been characterized by vicious cycles of crises: escalating pressures from fast-growing populations, uncontrolled urbanisation, expanding agricultural and industrial activities (Kidane-Mariam, 2003).

In their quest for accelerated economic growth, many national development efforts and foreign direct investment projects did not consider the adverse impacts of the projects on the environment and natural resources. As a result, significant damage to the physical and human environments went unchecked for many decades. In part, the arbitrary division of territories and peoples, as well as inequitable development patterns set during colonial times also led to significant economic and environmental damage and spatial differences that fuelled civil conflicts and wars. Also, natural disasters, droughts, bush fires and famine have continued to wreak havoc on the continent. These situations have devastated the environment, affected livelihoods and way of life of the people of Africa.

Despite these challenges, some countries established EIA as a part of environmental policy and a legal requirement for proposed development activities in the 1980s. Algeria, Burkina Faso, Gabon, Gambia, Mauritius, Nigeria, Senegal, Togo, Zambia and others have included EIA provisions in one form or another within their framework environmental legislations. In Egypt, Ghana, South Africa, Zambia, Senegal, Côte d'Ivoire and Togo EIA requirements have been introduced in framework legislation, which is implemented through specific regulations and guidelines (Bekhechi & Mercier, 2002). In anticipation of the potential benefits of EIA, and in view of the myriad of social, economic and environmental problems the continent faces, EIA systems are being put in place in almost all African countries. These systems are however, based on EIA experiences and practices in the more developed countries. There is still room for improvement and the need to develop more comprehensive and sustainable approaches to EIA that are of direct relevance and improve the livelihoods of local peoples in Africa. That is, beyond identifying the impact of policies, plans and projects and providing mitigation measures, it is necessary to test if any development activity is sustainable, or fulfils sustainable development objectives, or contribute to meet the targets of the Millennium Development Goals.

It is encouraging that comprehensive EIA systems are developing rapidly on the continent. Strategic Environmental Assessment (SEA) can be regarded as second generation EIA. SEA picked up in developed countries in the 1990s to apply EIA at a strategic level. The adoption and application of SEA in developing countries have been very slow. In Africa, few countries have a legal framework for SEA in place – Ethiopia, Kenya and Mauritius (ECA, 2005; Beedassy & Ramjeawon, 2004). In some countries (for example, Ghana, South Africa, Uganda and Zambia) even though SEA is not an explicit legislative requirement, it is implied in provisions, which require that environmental assessments be carried out on policies, plans and programmes. Although EIAs vary from country to country, significant strides have been made over the past decade regarding EIA development in Africa. African countries could still learn from existing systems, and adapt the EIA techniques to their own needs (Wood, 2003; Kakonge, 1998). This is because there is a strong link between poverty and environmental degradation (Adams et al., 2009). In Africa, poverty and environmental degradation are intensifying. Deforestation, desertification, water shortages and soil erosion impose growing constraints on poverty reduction efforts. The gains of EIAs have barely been realised after several years of implementation in various African countries. Therefore, realising the complex linkages between increasing poverty and environmental degradation, in spite of the existence of EIAs, a completely different approach and an analytical framework are needed in the existing EIA systems. This study therefore seeks to appraise and review the EIA systems of some four African countries, focusing generally on the legal and institutional frameworks supporting environmental protection and evaluate how EIA as a decision-making tool can be used for sustainable development, including poverty alleviation in Africa.

## 2. Methodology

Egypt, Ghana, Mauritius and South Africa were chosen for this study because of their relatively advanced EIA systems on the continent. Also, for reasons of availability of information, level of EIA development among other factors, the four countries were selected from various sub-regions of the continent to allow for detailed analyses of the respective EIA systems. However, in all the sections, attempts are made to capture the situation all over the African continent. The information presented in this study was based on secondary information from books, articles, reports and papers identified from internet-based searches.

The methodology employed for the analyses is a synthesis of evaluative criteria employed by different authors to compare, evaluate and assess the performance of EIA systems in several jurisdictions around the world. These works provide a useful guide to adopting the appropriate tool or a combination of approaches for the assessment of environmental impacts. A set of 14 evaluation criteria to test the performance of EIA by Wood (1995, 1999, 2003) was used. The criteria relate to the following:

legal basis, coverage, consideration of alternatives, screening, scoping, EIA report preparation, EIA report review, decision-making, impact monitoring, mitigation, consultation and participation, system monitoring, costs and

benefits, and strategic environmental assessment.

This framework has been applied to EIA systems in developed and developing countries alike. Ahmad and Wood (2002) also devised a criterion to compare the EIA systems in Egypt, Tunisia and Turkey based on some legal requirements for EIA and its implementation framework. The framework consists of comparing the different formal legal procedures for EIA as well as the arrangements for its implementation and practice. Also, bringing sustainable development and environmental assessments together allowed for a comprehensive analysis of all impacts as has been suggested by previous studies (Duraiappah, 2000; George, 1999). The evaluation/analytical criteria considered in the analyses are summarised in Table 1.

Table 1. Description of the criteria adopted to compare the EIA systems

Legal Basis for EIA	Administration of EIA	EIA Process and Practice
<ul style="list-style-type: none"> <li>• Enabling legislation for EIA</li> <li>• Provisions for SEA</li> <li>• Guidelines for EIA implementation</li> <li>• Guidelines for poverty alleviation</li> </ul>	<ul style="list-style-type: none"> <li>• Main administrative body for EIA</li> <li>• Competent body for environmental acceptability</li> <li>• Review body for EIA</li> <li>• Sectoral authority responsibility</li> </ul>	<ul style="list-style-type: none"> <li>• Screening</li> <li>• Scoping</li> <li>• Consideration of alternatives</li> <li>• EIA report content</li> <li>• EIA report review</li> <li>• Public participation</li> <li>• Decision-making</li> <li>• Impact monitoring</li> <li>• Mitigation measures</li> <li>• System monitoring</li> <li>• Environmental management plans</li> </ul>

### 3. Results and Analyses

A review of environmental laws and institutional framework for their implementation on a country-by-country basis is provided in Table 2. This forms the basis for further in-depth analysis of environmental regulations of the selected.

Table 2. Environmental impact assessment system evaluation criteria for selected African countries

	Egypt	Ghana	Mauritius	South Africa
<b>Legal basis for EIA</b>				
1 <i>Enabling legislation for EIA</i>	Environmental Protection Law No. 4 of 1994 and amendments Law No. 9 of 2009. Executive Regulations 1995 of Prime Minister's Decree 338. Prime Minister's Decree 1741 of 2005 amended parts of the executive regulations to strengthen the EIA legal provisions	Environmental Protection Agency (EPA) Act No. 490, 1994. Ministerial instrument LI 1652, 1999	Environmental Protection Act No. 19, 2002 (amendment of EPA 1993), and Environmental Protection (Amendment) Act (No. 6) 2008	National Environmental Management Act (NEMA) 1998, as EIA Regulations 2010 (in Government Gazette 33306 of 18 June 2010) and further amendments, effective August 2, 2010, replaced 2006 EIA Regulations and previous regulations

2	<i>Provisions for Strategic Environmental Assessment</i>	No legal requirement or guidelines, but the definition of EIA implies integration of sustainability principles	No legal requirement or guidelines, but the definition of EIA implies integration of sustainability principles	SEA is required for many plans and programmes in First Schedule of Environmental Protection Act, 2002. But no procedures or guidelines adopted for integrated EIA	No legal requirement but the Environmental Management Framework regulation in NEMA 1998, SEA guidelines of 2000 and other regulations provide a framework for integrated environmental management
3	<i>Guidelines</i>	Guidelines of principles and procedures for EIA, 2 <sup>nd</sup> edition, published by the Egyptian Environmental Affairs Agency (EEAA) in 2009. It identifies scope and content of EIA; provides detailed guidance for each sector and several project types	EIA procedure published by EPA in 1995 provides guidance for project types, holding of public forums, EIA review, permits and post certification monitoring	Guidance legislated in revised Environmental Protection Act 2008 & Environmental Protection Act (Amendment Schedule) regulations 2006. Detailed procedure and content of EIA included. Sectoral guidelines for various activities also published	Draft sector guidelines for implementation of EIA published under NEMA EIA, 2010. Provides guidelines for, but not exclusively to, five major sectors whose activities and processes are complex and large
4	<i>Guidelines for poverty alleviation</i>	None specified	None specified	None specified	None specified
<b>Administration of EIA</b>					
5	<i>Main administrative body for EIA</i>	The Egyptian Environmental Affairs Agency	The Environmental Protection Agency	No main body for EIA. Director of Environment (DoE) oversees EIA process, subject to ministerial decision	Provincial Department of Environmental Affairs (DEA) is the main administrative authority
6	<i>Competent body for environmental acceptability</i>	EEAA – makes recommendations to sectoral and local competent authorities	The Environmental Protection Agency	Environmental Co-ordination Committee, DoE and Minister for Environment (MoE)	DEA and provincial environmental departments
7	<i>Review body for</i>	EEAA: uses internal	EPA and	DoE, then by the	Provincial

	<i>EIA</i>	reviewers and independent consultants	Cross-sectoral Committee	EIA Committee	authority, specialists, interested parties and public
8	<i>Sectoral authority responsibility</i>	Initial screening according to lists and final project approval	EIA reviews and follow-ups	EIA reviews and enforcements	Competent authority to consult relevant authorities during EIA
<b>EIA process and practice</b>					
9	<i>Screening</i>	Three screening lists: black list (C), full EIA; grey list (B), approval with conditions; white list (A), approval without conditions. Method: criteria, lists, thresholds and screening forms	Two screening lists: schedule 1, registration and permits; schedule 2, EIA mandatory. Method: lists, screening forms	Two project lists: Preliminary Environmental Report (PER) for lesser impact & full EIA list. Non-listed activities also subject to self-adherence requirement. Method: lists and some thresholds	Revised regulations categorise projects into 3 Listing Notices: (1) basic assessment; (2) scoping & Environmental Impact Report (EIR); (3) EIR for specified geographical areas only. Method: lists, thresholds, forms
10	<i>Scoping</i>	Individual scoping by proponent for C-list projects based on sectoral guidelines; reviewed by EEAA. EEAA usually issues terms of reference (TOR) for B-list projects	Scoping by proponent for schedule 2 projects (and some schedule 1 projects), based on TOR issued by EPA	Scoping by proponent for full EIA list (and some PER and even non-listed) projects through the use of TOR	Proponent submits plan of study for scoping Listing Notice 3 and applicable Listing Notice 2 projects; reviewed by authority. Public consultation starts at scoping stage
11	<i>Consideration of alternatives</i>	Not clear in legislation but required in sectoral guidelines for complete EIA study	Required by EPA guidelines	Study required by EPA 2002 and guidelines for undertakings requiring EIA licence	Study of all 'feasible' and 'reasonable' options is a statutory requirement
12	<i>EIA report content</i>	Specified EIA report content in Law 4/94 and sectoral guidelines	Specified EIA report content in Ministerial instrument, LI 1652	Specified EIA report content in EPA 2002 and guidelines	NEMA 1998 detailed specific guidelines for EIA report content

13	<i>EIA report review</i>	Comparison of report with content specified in guidelines, <i>ad hoc</i> review by independent reviewers. Review criteria issued for some sectors, including oil and gas	Review by EPA and cross-sectoral committee. Content graded according to guidelines	Director reviews report - may use technical committee. EIA Committee reviews Director's recommendation then refers to Minister for decision	Provincial authority/national authority or joint committee, specialists, and interested and affected parties (I&APs) according to review criteria
14	<i>Public participation</i>	Not mandatory in law. Guidelines suggest public consultation during the full EIA study	Instrument mandates public hearing during EIA review process	Act requires that EIA report be advertised and open to public comments. Public participation in EIA process not specified	Required by law and guidelines; consultations with relevant state departments and I&APs from scoping to EIA review
15	<i>Decision-making</i>	EEAA decides on environmental acceptability prior to approval by the CAA; a high committee decides on particular projects	EPA decides on all environmental matters. Minister for environment decides on EIA appeals	MoE decides on EIA based on EIA Committee's advice. Appeal heard by Environment Appeal Tribunal	National/provincial authority i.e. DEA or ministry e.g. Mineral Resources, decides on application depending on project
16	<i>Impact monitoring</i>	Compliance monitoring is mandatory. Developer keeps environmental register; EEAA undertakes periodic follow-up inspections	Developer submits annual reports to EPA. EPA undertakes follow-up inspections	Proponent submits monitoring plan. Compliance monitoring unit follows up on conditions of EIA certificate issuance	Compliance monitoring is required by law. Applicant maintains record of impacts; DEA assesses performance against management plan
17	<i>Mitigation measures</i>	Mitigation measures included in EMPs under EIA regulations	Compliance required for issuing environmental certificates	Mitigation management plan required by EPA 2002	Mitigation management plan required by law
18	<i>Environmental management plans</i>	Mandatory for all categories of projects – A, B & C	Required for existing undertakings prior to Act 490 and Environmental Certificate	Required for new infrastructure during construction phase	Mandatory for all applications – basic or full EIA.
19	<i>EIA System monitoring</i>	No legal requirement	No legal requirement	No legal requirement	Regulation provides for monitoring and assessment

### 3.1 Legal Basis for EIA

All four jurisdictions have legal provisions requiring EIA. They all have two legislations – a framework enabling EIA and regulations detailing the EIA process. The legislations apply to new and existing projects, expansion and/or renovation of existing ones. The depth and coverage of the legislations vary from country to country. Moreover, without exception, all regulations and guidelines examined have basic provisions relating to the definition of EIA and the categories of projects to be subjected to EIA. Provisions for appealing against the decisions of the competent authority have been specified in the legislation of the four countries. Since strong environmental legislation and well-functioning institutions are important prerequisites to EIA effectiveness, Egypt, Ghana and South Africa have fairly robust and clear regulatory framework for EIA.

### 3.2 Institutional Framework for EIA

A brief examination of the EIA legislations of the four countries shows that they have all incorporated environmental considerations into the planning process. Regulations and guidelines in the respective countries specify institutional arrangements, roles of various agencies and authorities in the EIA process. The Egyptian Environmental Affairs Agency (EEAA) and the Environmental Protection Agency (EPA) are the main administrative bodies for EIA in Egypt and Ghana respectively (Arab Republic of Egypt [ARE], 1994; Government of Ghana, 1994). They are also responsible for determining environmental acceptability in both countries. However, in Egypt, sectoral ministries possess executive authority. In South Africa, most administrative responsibility for EIA is at the provincial level. However, the Department of Environmental Affairs (DEA) of South Africa determines environmental acceptability (DEA, 2010a). The case of Mauritius is somehow cumbersome. Executive power for EIA decision-making and environmental acceptability resides with the Minister for Environment (Republic of Mauritius [ROM], 2002; Department of Environment [DOE], 2004). The Director of Environment has responsibility for managing the EIA process which is subject to review by the EIA Committee (DOE, 2004). Such an institutional arrangement provides a strong basis for delays, duplication of tasks, and power struggles which derail the EIA process. In a country where the institutions are not strong, this gives room for political manipulation or prevalence of individual interests over the public good. Overall, Ghana's EIA regulations give more powers to its agency than all the other three jurisdictions.

### 3.3 EIA Process and Practice

#### 3.3.1 Screening

The use of lists and thresholds remains the most common screening approach in countries possessing enabling legislation and regulations. All four countries have categorised different projects depending on the severity of potential impact on the environment. Egypt and South Africa have categorised projects into three, whereas Ghana and Mauritius have two categories. The Egyptian and South African EIA regulations identify three categories of projects, thus, conforming to international EIA best practice. Ghana's and Mauritius' systems categorised projects into two: EIA mandatory lists and those requiring environmental permits (or preliminary environmental report in Mauritius) (EPA, 1999; ROM, 2006; 2008). In all jurisdictions, undertakings considered to be of a smaller scale and less polluting are exempt from EIA. However, they have to operate according to relevant national regulations on human safety and environmental acceptability. The Egyptian and South African EIA systems allow for simple approval mechanisms for insignificant activities for which the impacts are known, without missing out or compromising the EIA for larger and more complex ones, and without unnecessarily burdening the competent authorities (Ahmad & Wood, 2002; Badr, 2009; DEA, 2010c).

#### 3.3.2 Scoping

Some form of scoping using TOR exists in all the countries studied. Ghana and Mauritius follow a similar approach to scoping whereby the competent environmental authority issues the TOR for conducting scoping studies. In Egypt and South Africa, the proponent submits a Plan of Study for scoping (i.e. a kind of TOR for specialist studies) for review by the authority (EEAA, 1996; 2009; DEA, 2010b). If approved then scoping can commence. Though the methods adopted differ in the different countries, they are effective in identifying significant impacts of projects.

All four jurisdictions under consideration require that studies be carried out to identify alternatives to an undertaking. By comparison the South African system is more elaborate on finding realistic possible means of minimising negative impacts, seeking better technologies, evaluating the intensity and duration of impacts on environment (Duthie, 2001).

#### 3.3.3 EIA Report

The review stage of the EIA process is an important quality control feature, because it helps to ensure that

information on the environmental impacts of proposed activity is sufficient before it is used as a basis for decision making (Fuller, 1999). Various methods can be employed to ensure objectivity and effectiveness of EIA review. These include the use of environmental impact statement (EIS) review criteria, the accreditation of EIS review consultants, the setting up of an independent review body, the involvement of consultants, public consultations and the publication of review results (Ahmad & Wood, 2002; Badr, 2009).

In general, all the four countries' laws and statutes specify the content of the EIA report in different ways. All of them state that the report should describe the proposed project, its specific purposes, the affected environment, and environmental and health impacts, including impacts on the human and cultural environments. The report is also required to provide an examination and evaluation of alternative solutions that might avoid or at least reduce and mitigate some or all of the adverse environmental impacts identified. However, apart from the regulations of South Africa which allow some flexibility in defining the content and depth of the EIA report according to the scale of the proposed project, the other countries' regulations do not link the content and depth of the report to the scale of the proposed project.

With regards to review of the EIA report, each of the EIA systems uses one or more of the review methods in its review process. In Egypt, Ghana and South Africa, reviews are done according to established criteria. The South African system is superior in that the criterion employed for review is developed by all players involved in the review process. In both Egypt and Ghana, the criteria are established by the competent authority. But in Egypt consultations with proponents are allowed for clarification of issues during the review process (EEAA, 2009). Egypt employs the services of independent reviewers. In Ghana, the EPA and a cross-sectoral committee are the review body. In the case of South Africa, the provincial/national authority or a joint committee, specialists, and interested and affected parties are all involved in the review process (DEA, 2010b). The situation in Mauritius is unique. The report is reviewed by the Director of Environment whose recommendations are then reviewed by the EIA committee (ROM, 2002). In comparison the South African system presents a better opportunity for enhancing the quality of the report by including all stakeholders (Weaver, 2003), whilst that of Mauritius is likely to result in redundancy, subjectivity and a poor report (Beedassy & Ramjeawon, 2004).

The regulations of Mauritius and Egypt are not specific regarding public participation in the EIA process. Though not mandatory in Egypt, sectoral guidelines specify public participation for full EIA (EEAA, 2009). However, public consultations are often ignored or undertaken only for certain donor-funded projects (Ahmad & Wood, 2002). Egypt's public consultation is ineffective in practice as environmental impact statements are considered confidential and not fully disclosed to the public (Badr, 2009). Public participation is required by legislation in Mauritius but it is not specific where it should occur. Also, the EIA process lacks transparency; the reports are inaccessible to the public and unintelligible to non-specialists (South African Institute for Environmental Assessment [SAIEA], 2003). In Ghana, public participation is conducted during the EIA report review stage. However, Ghana's regulation requires that where there is a strong concern for an undertaking, a public forum be organised by the agency at the expense of the developer (EPA, 1999). In South Africa, national legislation requires that public participation occur as early as possible i.e. from the scoping stage. In addition, consultations with relevant state departments and parliamentary scrutiny are required prior to publication of EIA report (section 240 of EIA Act, 2010) (DEA, 2010a). Both Ghana's and South Africa's legislations provide unambiguous provisions regarding public participation but South Africa's provides for more extensive consultation (Duthie, 2001). It is important to state that, although public participation has been specified in national regulations, it does not necessarily imply adequate implementation.

The effectiveness and quality of the review process, however, depends on professional expertise and experience in the respective countries. There are weaknesses of the human and professional capacity of almost all the review agencies in Africa (Bekhechi & Mercier, 2002; ECA, 2005). In none of the countries reviewed are EIA consultants certified by a regulatory agency, as is the case in other countries such as the UK and Canada. New EIA regulations in Egypt (Law No. 9 of 2009) and South Africa (DEA, 2010a) require certification/accreditation of environmental practitioners, but they are yet to be implemented. In recognition of these deficiencies, the high level meeting of the African Ministers Conference on Environment (AMCEN) held in Durban, South Africa in June 1995 identified priorities for immediate action in capacity building for EIA in Africa adapted to the local needs and capacity. To meet this target, the Capacity Development and Linkages for Environmental Assessment in Africa (CLEAA) was formed in 2000. CLEAA initiated the development of an Environmental Assessment and Management Capacity Building Strategy for Africa. Since then CLEAA, working alongside sub-regional nodes such as SAIEA and international partners, has initiated several capacity building activities on the continent (IUCN, CLEAA & ECA, 2007). It was envisaged that, by 2015 African countries would have the capacity for employing environmental assessment and management tools to promote sustainable development (ECA, 2005).



In evaluating the quality of EIA reports, all four jurisdictions provide for specified EIA report content and review process. In general, Egypt, Ghana and South Africa can be regarded as being at par regarding EIA report, with Mauritius having a less advanced process. There are, however, significant differences, strengths and weaknesses in all jurisdictions regarding the EIA report as has been analysed.

#### 3.3.4 Environmental Management Plans (EMPs), Impact Monitoring and Mitigation Measures

EMPs are mandatory in all jurisdictions studied. A plan detailing all likely environmental and other effects of the development and mitigation measures is required in all four countries. In Egypt EMPs are required for all categories of projects. Regular compliance monitoring of environmental impacts is a mandatory requirement of Egyptian environmental legislation for projects in operation. In Mauritius, new projects may be required to prepare an EMP at the construction and operational phases of the development. In Ghana, all existing developments preceding the EPA Act of 1994 are required to apply for Environmental Permits. In the process some industries would be requested to prepare EMPs for review by the Agency. New undertakings requiring EIA are to prepare EMPs as part of the requirements for obtaining an Environmental Certificate. An Environmental Certificate is a proof of compliance with all commitments made in the EMP. EMPs are compulsory for all applications in South Africa. In addition, activities in particular geographical areas such as coastal zones may be required by the minister of environment to prepare an environmental management framework as part of the EIA process (DEA, 2010a,c).

In all the countries reviewed, and on the continent, the phenomenon of EMPs not being adequately funded and/or not integrated into project work plans is not uncommon (ECA, 2005). The African Experts Workshop on effectiveness of EIA systems held in Ethiopia in April 2007 recommended that governments, donors and partners make adequate financing of mitigation plans and implementation of EMPs a condition for environmental approvals (IUCN et al., 2007).

Follow-up monitoring of impacts once the project is in operation is mandatory in all jurisdictions. Proponents are required to keep written records of the environmental impact of their activities. In Egypt, Environmental Management Units (EMUs) and regional offices of the EEAA undertake periodic follow-up inspections checking compliance with environmental standards (EEAA, 1996). In Ghana, the EPA undertakes follow-up monitoring. Coordination networks - for example, mining and natural resources network - have been established for effective environmental management in Ghana (IUCN et al., 2007). Also industries are required to submit annual environmental reports to the Agency detailing the performance of their establishments. In Mauritius, a post-EIA monitoring unit exists which follows up on compliance with the conditions under which the EIA certificate is issued. The DEA and relevant national and provincial authorities monitor compliance with management plans in South Africa.

There is a general lack of post-decision monitoring once the proposed development is approved. However, in practice monitoring usually takes place in response to environmental complaints or major disasters that arise. Moreover, monitoring is costly and requires well-trained personnel to conduct it effectively (El-Fadl & El-Fadel, 2004). The information management system of many developing countries, including the ones reviewed, makes it difficult to access accurate information to establish environmental baselines. This increases subjectivity of environmental impact decisions since they are not based on rigorous scientific analysis (ECA, 2005).

With the exception of South Africa, none of the countries reviewed have any provision in law or an administrative measure aimed at incorporating experiences and lessons learned during the EIA process into existing processes. Generally, there is an absence of an independent regulatory body, outside the competent authority, to assess the overall effectiveness of the EIA system. This deficiency assumes the prevailing systems are sufficient, creating a closed-loop situation. Since EIA is a human-managed process it is crucial that feedback is obtained by monitoring the whole EIA system. An internal evaluation of the EIA system in Ghana (IUCN et al., 2007) and Egypt (Badr, 2009) resulted in improving the EIA process. It is, therefore, important to consider developing sets of sound environmental quality norms and standards to support EIA implementation where the EIA process reveals a weakness or lack of definition of an environmental quality standard.

#### 3.4 Trends in Strategic Environmental Assessment (SEA)

With regards to strategic EIA only Mauritius has explicit legal requirements for certain plans and programmes (No. 19, EPA Act 2002). In South Africa, the Environmental Management Framework procedure of 2010, and the SEA guidelines document of 2000 and other national regulations, all recommend the use of SEA as part of the tools for promoting integrated decision-making, and thus sustainable development. Although both Egypt and Ghana have no explicit legal requirements or guidelines for SEA, the definition of EIA in framework regulations embodies integration of sustainability principles or an integrated environmental management approach. The

Organisation for Economic Co-operation and Development [OECD] (2012) presents an interesting case study of SEA in progress in nine developing countries, including Ghana and Mauritius. It highlights SEA integration and application in different contexts for safeguarding environmental assets for sustainable poverty reduction and development, among other strategic benefits. Thus, though SEA may not be explicitly legislated in national law, increasingly it is implied in framework EIA regulations (ECA, 2005; OECD, 2012; Mauree, 2011).

#### **4. EIA, Sustainable Development and Poverty**

It is unfortunate but not uncommon to find some of the poorest communities living close to large and profitable projects. Whilst the EIA systems of various developing countries may seem to consider mitigating social effects of projects, no direct mechanism is put in EIA regulations to bring development and reduce poverty. The emphasis in EIAs is on mitigation rather than enhancement of existing conditions. However, the declarations of the UNCED (principle 5) recognised the inextricability of sustainable development and poverty. By implication, there would be no sustainable development without reduction of poverty (Rahman, 2002), employment creation and economic development (Weaver, 2003). Sustainable development, as embedded in the Rio Declaration (Principle 3) seeks to equitably meet developmental and environmental needs of present and future generations (United Nations, 1992). According to George (1999) the notion of intra- and inter-generational equity implicit in this definition can be incorporated into EIA to achieve sustainable development at the project level. Therefore, to become an effective tool for sustainable development in Africa, EIAs must seek to shape, design and locate projects such that social value to communities and broader economic value to investors can be met, without eroding natural capital and pushing the boundaries of the environment.

Poverty alleviation has been the cornerstone of international development strategies over the last five decades. Across Africa, reducing extreme poverty is an overarching priority of governments. Wahaab (2003) noted that the major environmental problems [of Egypt] were alleviation of poverty and meeting basic human needs. This view is equally applicable to many African countries. Poverty in Africa has historical undertones and institutional complexities. Many have argued that poverty in the South has its roots in colonial domination and resource exploitation by industrialised countries for economic progress in the North (Rahman, 2002; Wolf, 2010), creating enormous environmental problems. Other causes of poverty are corruption, bad governance and weak institutions in many independent developing countries (Wood, 2003; Kakonge, 1998; Rahman, 2002). These factors have probably made the largest contribution to continued poverty, natural resources and environmental degradation in post-independent Africa. However, these endemic issues of corruption, bad governance, weak institutions and elitism have not been factored into the EIA processes. The bureaucratic nature of the EIA processes in most African countries only undermines the achievement of better social, economic and environmental outcomes.

None of the countries have any legislation or guidelines within its EIA system for directly addressing the problem of poverty. When the enabling environmental legislation is lacking or limited, the proponent's fulfillment of the existing requirements for development consent does not necessarily promote good practice. Although relying solely on EIA as a decision-making tool cannot achieve sustainable development, it can undoubtedly help meet some of the goals of sustainable development (Bruhn-Tysk & Eklund, 2002). At the local project level, developmental needs, for example health, education, water needs of people, can be captured through a more comprehensive assessment of the effects of a project on the environment and communities. In post-colonial Africa's context of weak institutions, EIA could therefore, be part of a matrix of policy tools that can help shape institutions in Africa to respond more sensitively and effectively to issues of local, national and international concern.

#### **5. Discussion and Conclusions**

##### *5.1 Effectiveness of EIA Systems*

All the countries reviewed have an enabling legislative framework for conducting EIA. The analyses indicate that the EIA systems of the different countries studied are comparable in terms of legal and procedural basis for EIA. However, some systems are more advanced than others in certain areas. They all have general and sectoral EIA guidelines, but Egypt and South Africa have more detailed, specific sector guidelines compared to the others. According to El-Fadl and El-Fadel (2004) sectoral guidelines enhance effective identification of major impacts and methods of analysis for specific sectors. It also creates a more uniform standard for the EIA report review process, decreasing the subjectivity of the review stage. By asking the developer to identify the scope of full EIA studies, the approach to scoping employed in Egypt and South Africa lessens the burden on the EIA authority. In Ghana and Mauritius the EIA authority issues a terms of reference defining the scope of EIA studies. The Egyptian and South African systems are advanced in comparison to the others with regards to the screening

stage.

One of the major issues evident in the analysis of environmental laws in these countries is the absence of national capacity at all levels of government and society to bring about comprehensive and sound environmental management. Where the national capacity to implement the EIA requirement is lacking, legislation is just a useless tool. National capacity refers to capacity at all the levels where EIA is to be performed, reviewed, discussed, implemented, and monitored. This includes central and local governments, decentralized agencies, the private sector, NGOs and local communities. However, for EIA to bring about better environmental protection in Africa, more specific measures in monitoring, capacity building, decentralisation and participation must be evolved. Some specific suggestions to improve the existing regulations and practices are provided in Table 3.

The weaknesses in the EIA system in the selected countries can be summarized as follows:

- lack of enforcement and inconsistencies between legal requirements and actual implementation;
- highly centralised, understaffed, inexperienced and poorly funded authorities;
- shortage of qualified and certified EIA professionals and consultancies;
- limited scope of EIA coverage and poor integration of environmental concerns into planning and decision-making; and
- incorrect costing and inadequate financing of mitigation plans and EMPs

Thus, most of the deficiencies in EIA systems are linked to those measures that promote good practice and underpin effective application of laws, regulations and procedures. Hence, this will negatively influence the effectiveness of EIA implementation in these countries

Table 3. Suggested amendments to the EIA systems of Egypt, Ghana, Mauritius and South Africa

Requirements	Suggested Action	Comments
1. <i>Public Participation</i>	Regulations/guidelines should specify consultation with affected and interested people and NGOs during both the scoping and review stages of EIA process	Applies to Egypt and Mauritius; Ghana's law tends to make public consultation reactive
2. <i>Access to EIA reports</i>	Mandatory requirements should be introduced for open and free access to EIA reports by affected groups	Applies to Egypt; Ghana and Mauritius should clarify regulations
3. <i>Environmental management plans</i>	Integration of EMPs into work plans should be made mandatory for authorisation	Applies to all countries studied
4. <i>Financing mitigation plans and EMPs</i>	Proper costing and adequate financing of mitigation plans, corporate social responsibility (CSR) fund and EMPs must be made mandatory for granting environmental permits	Applies to all countries studied
5. <i>Impact monitoring</i>	a) Regulations for monitoring during construction phase; b) regulations for regular reporting by developers and monitoring by EIA authority should be fully implemented than at present, and EIA authority should be adequately funded	a) Applies to all countries; b) applies more to Egypt, Ghana and Mauritius
6. <i>Content of EIA report</i>	Incorporate CSR as a component of report	Applies to all countries studied
7. <i>Guidelines</i>	a) Detailed guidelines for sensitive areas such as conservation zones, etc. should be developed; b) detailed guidance on review stages for local environmental authority staff and consultants; and c) guideline on incorporating CSR into national and local development plans whilst ensuring corporate viability	a) Applies to more to Ghana b) Applies to more to Ghana and Mauritius c) Applies to all countries studied

8. <i>Cumulative and global impacts</i>	Where applicable, regulations should specify the study of cumulative and global impacts	Applies to all countries studies
9. <i>Social considerations</i>	Requirements for social issues especially poverty and its impacts on environment; project specific poverty reduction strategies in affected communities	All countries require regulations and/or guidelines
10. <i>Capacity building</i>	Requirements for certifying consultants; institutional capacity building, decentralization of EIA process and private sector involvement (i.e. outsourcing of certain functions)	All countries require regulations and/or guidelines

## 5.2 Conclusions

From the foregoing analyses, EIA may not directly reduce poverty, bring development or mitigate poor environmental management and performance on the continent. Some of the factors militating against sound environmental management including high population growth, illiteracy and low level of environmental awareness need to be addressed. Generally, local pressure on decision-makers to protect the environment is vital to bringing about accountability to the sector. An informed population is more likely to demand for the negative impacts of development activities to be addressed. Without this, the huge potential for using EIA as a decision-making tool to promote sound environmental management and sustainability would remain a mirage to the African continent.

EIA report review and public participation are critical stages that need the involvement and inputs from well-informed and interested stakeholders. Unfortunately, most EIA reports are big documents written in technical language unintelligible to most affected and interested stakeholders. Also, communities tend not to benefit from projects located in their area because of ignorance on their part, and corruption and lack of accountability of officials and local elites. These handicaps could be redressed through community empowerment to enable them to understand and assess information. Communities should be empowered to ensure a more collective and meaningful participation in the impact assessment process (International Association of Impact Assessment [IAIA], 2002). In addition, public participation and consideration of alternative project designs could better promote sustainable development if conducted earlier at the project planning phase. It also requires the elaboration of a comprehensive legal framework and guidelines at a more strategic level that is consistent with both local and national development priorities as well as investors' goals.

Whilst these countries have made strides in establishing EIA systems, more needs to be done to promote integrated environmental management for sustainable development at the community level. Some countries in Africa may not be able to meet these requirements because of tradition. This is because traditions and the benign roles of traditional authorities and traditional practices in governance are deeply rooted in the fabric of society and cannot be questioned or easily changed. However, cultural change is a slow process. According to North (2005) it is the informal norms that give legitimacy to a set of formal rules and they cannot be altered overnight. Also, the hierarchical and dictatorial tendencies of many traditional leaders in Africa suggest that their actions are fundamentally contradictory to the values of democratic leadership, social mobilisation and encouragement of public participation for development. Traditional authorities in Ghana, for example, are beyond reproach. In this regard, the authority of the chief embodies in a single person all levers of power (judicial, legislative, executive and administrative) which has, most frequently, been mismanaged. Chiefs are not transparent and in most places have short-changed the people for their personal gain. Any approach that integrates local concerns and systemically reduces the negative influence of traditional institutions in EIAs will likely be more successful.

Furthermore, to make EIA contribute to sustainable development through harnessing its full potential at the local levels, corporate social responsibility (CSR) should be integrated into or linked to the EIA process. This is imperative since resource conflicts are still raging in many African countries. The CSR would ideally be a percentage of annual profit devoted to projects in the community. A CSR fund dedicated to community development must be a mandatory EIA requirement. By integrating CSR into EIA, it would allow for a comprehensive assessment of not only the impacts of a project but also its benefits. The improvement of social wellbeing of the wider community, i.e. through the internalisation of CSR by corporate entities, could minimise conflicts, enhance reputation and long-term viability of a company. However, the gains of CSR should be made independent of the traditional authorities (chiefs in countries like Ghana) who are likely to add the benefits to their already bloated portfolio of entitlements. Given the immense influence of multinational corporations and

the increasing importance of foreign direct investments in Africa, genuine interest of powerful corporations to engage in maximising social utility could become a catalyst for building viable governance institutions in these countries. The myriad of institutional impediments and complexities inherent in most African societies should be streamlined with the tools of social and environmental accountability and good governance offered by EIA. These will create a platform for the achievement of sustainability for projects, programmes, and policies.

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