Journal of Environmental Protection, 2017, 8, 603-636
http://www.scirp.org/journal/jep
ISSN Online: 2152-2219
ISSN Print: 2152-2197

Comparative Evaluation of the EIA Systems in Kenya, Tanzania, Mozambique, South Africa, Angola, and the European Union

Cristina Rebelo, José Guerreiro*

Faculdade de Ciências de Lisboa, Edifício TECLABS, Lisboa, Portugal
Email: cmrebelo@fc.ul.pt, *jasilva@fc.ul.pt, *joseguerreiro2958@gmail.com

How to cite this paper: Rebelo, C. and Guerreiro, J. (2017) Comparative Evaluation of the EIA Systems in Kenya, Tanzania, Mozambique, South Africa, Angola, and the European Union. *Journal of Environmental Protection*, **8**, 603-636.
https://doi.org/10.4236/jep.2017.85040

Received: March 13, 2017
Accepted: May 24, 2017
Published: May 27, 2017

Abstract

This article provides a comparative overview of environmental impact assessment (EIA) in Mozambique, Tanzania, Kenya, South Africa, Angola, and the European Union (EU). EIA "systemic measure" and "foundation measure" criteria are used to evaluate and compare the performance of each system. In contrast to the EU, EIA must be carried out by registered experts in the African countries. In Tanzania, Mozambique and South Africa public consultation is mandatory during scoping. In Kenya and Tanzania the EIA study should contain measures to prevent health hazards, to ensure employee safety, and for emergency management. EIA system monitoring is required in Kenya, Tanzania, Mozambique, and in the EU, but not in South Africa and Angola. Financial issues, insufficient qualified personnel, and an increasing number of EIA applications undermine the capacity of competent authorities to adequately monitor these EIA systems. Consequently, training programmes increase effectiveness of EIA implementation is a common request. The African countries reviewed here have adopted EIA and integrated EIA systems into public policy despite the constraints they face. As they continue to gain experience in EIA and to revise their EIA systems, they are moving towards a more flexible system with greater public involvement and robust arrangements and practices.

Keywords

Environmental Impact Assessment (EIA), EIA Procedures, EIA Contents, EIA Evaluation Criteria

1. Introduction[1]

The United Nations Conference on the Human Environment (Stockholm, 1972), the United Nations Conference on Environment and Development (Rio de Janeiro, 1992), and the World Summit on Sustainable Development (Johannesburg, 2002) laid a solid foundation and high-level commitment for integrating environment protection and economic development to achieve sustainable development [1]. These instruments introduced to integrate principles such as rational and integrated planning, and participatory economic and social analysis into public policy. Further they underscored the importance of capacity building in evaluation of environmental impacts of development projects. Together, they endorse the institutionalization of environmental impact assessment (EIA) at the national level in the decision-making process for proposed activities likely to have significant adverse environmental impacts.

At the national level, EIA was first formally introduced in the United States with the 1969 National Environmental Policy Act. Subsequently, other industrialized countries rapidly adopted EIA regulations. Today, more than 100 countries and all development banks and most international agencies require EIAs for major activities and projects.

EIA is a key instrument of European Union (EU) environmental policy. The Directive on the Assessment of the Effects of Certain Public and Private Projects on the Environment (EU EIA Directive), enacted in 1985 (85/337/EEC) [2], was amended through Directive 97/11/EC [3]. EIA practice and laws have been significantly improved since Directive 85/337/EEC came into effect.

In Africa, legal requirements or general procedures for EIA have evolved substantially over the past decade. Kenya, Tanzania, Mozambique, South Africa, and Angola each have adopted an EIA regulatory regime. The current challenge is to upgrade the EIA process and practice to tackle environmental decline that is grounded in poverty, underdevelopment, and lack of basic infrastructures. In an increasingly globalized world, democratization, deregulation, privatization, and decentralization also need to be incorporated into the public policy process. As a result, EIA arrangements need to become more flexible, less reliant on "command and control" measures, and open to greater public and stakeholder involvement [4]. At the same time, these countries, like many other developing

[1]EAP: Environmental Assessment Practitioner
EIA: Environmental Impact Assessment
EIM: Integrated Environmental Management
EIR: Environmental Impact Report
EMCA: Environmental Management and Coordination Act (Kenya)
EMP: Environmental Management Plan
EPDA: Environmental Pre-viability and Definition of Scope
EU: European Union
MICOA: Ministry for Environment Coordination (Mozambique)
NEMA: National Environmental Management Authority
NEMC: National Environmental Management Council (Tanzania)
SEA: Strategic Environmental Assessment
SER: Simplified Environmental Impact Report
ToR: Terms of Reference

countries, face financial, structural, and resource constraints in introducing and instituting EIA arrangements.

This paper provides a comparative overview of EIA systems and practices in Kenya, Tanzania, Mozambique, South Africa, Angola, and the EU in order to assess their effectiveness[2]. The following issues will be addressed: What institutional frameworks exist? Which EIA procedures are followed? What are the details of EIA requirements? Is there a pattern of procedural arrangements for an EIA and its contents? Are the implemented EIA systems effective? What are the main constraints and gaps for genuine effectiveness of EIA systems? What are the next steps to improve the effectiveness of EIA systems and practice in these countries? An overview of the research methodology is provided, as well as a detailed comparative review of different "systemic measures" and "foundation measures" of these EIA systems.

2. Methodology

A two-step methodology was used in this research. First, a preliminary assessment of the EIA systems was carried out in the selected countries (Kenya, Tanzania, Mozambique, South Africa and Angola)[3] through evaluation of their legal, institutional and procedural frameworks. Second, specific analytic criteria were used to compare the EIA systems in the five African countries and in the EU. The criteria applied in this study are based on those proposed by Ahmad Balsam and Christopher Wood [5], Wood [6] and Leu *et al.* [7], which are classified under two categories: systemic measures and foundation measures. The systemic measures are divided into three major categories: legal framework, administration framework and EIA procedures. The foundation measures accesses the existence of: 1) general guidelines issued by the national EIA authority, 2) regulation regarding which entities are able to carry out EIA studies; 3) training programs on EIA assessment and procedures.

This study is primarily based on descriptive criteria, formal EIA requirements and practical application methods. It considers the legal, institutional and procedures contexts of each EIA system and proceeds to a detailed comparison of the following EIA system attributes:

- legislative and administrative procedures for EIA
- aspects of EIA such as screening, scoping, EIA report review, mitigation, etc.
- measures undertaken to improve the effectiveness of EIA systems

The first two of these attributes broadly correspond to "systemic measures"

[2]This study was carried out within the EU-funded project PUMPSEA: Peri-urban mangrove forests as filters and potential phytoremediators of domestic sewage in East Africa. EU Contract no. 510863. This project's overall goal was to demonstrate that peri-urban mangroves are an ecological and economic means of mitigating coastal pollution through sewage filtration and offer an innovative set-up and management solution. The project developed technology for using constructed mangrove wetlands for the secondary treatment of domestic sewage water. One of the project's objectives was to develop an Environmental Impact Study on the use of mangrove wetlands for sewage filtration through procedures similar to those of the EU EIA Directive and in accordance with the national laws of Tanzania, Kenya, and Mozambique.

[3]A preliminary assessment was accomplished in 2008, revised in 2011 and updated in 2015.

and the third attribute corresponds to "foundation measures".

3. EIA Systems

3.1. Legal Provisions

All five countries reviewed here have legal provisions concerning EIA. In Kenya, EIA legal requirements first appeared in the Environmental Management and Coordination Act (EMCA) of 1999 [8] and subsequently in the Environmental (Impact Assessment and Audit) Regulations of 2002 [9].

The first "formal" EIA process in Tanzania was undertaken for the Stiegeler's Gorge Power and Flood Control project in 1980. Since then, EIA practice has evolved comparatively slowly [10]. During a 1995 meeting of African environment ministries and government representatives in Durban to discuss EIA, the Tanzanian delegation signed the communiqué pledging affirmative action to promote EIA as a planning tool. This suggested a growing commitment to the process. However, a lack of resources, expertise and institutional capacity continue to present formidable barriers to implementation of this pledge [10]. In 2002, the National Environmental Management Council (NEMC) adopted several guidelines concerning EIA. National EIA policy and legislation was adopted with the promulgation of the Environmental Management Act in 2004 [11] and Environmental (Registration of Environmental Experts) Regulations, 2005 [12].

In Mozambique, EIA legal requirements first appeared in Decree 76/98 of 29 December 1998 [13]. Subsequent EIA experience led to its replacement with Decree 45/2004 of 29 September 2004 [14]. The Decree 42/2008, of 4 November [15], has introduced changes to the Decree 45/2004.

Prior to promulgation of EIA regulations in September 1997 (R1182, R1183, and R1184 of the Environment Conservation Act 73 of 1989), EIA was voluntary in South Africa. No procedures, methods, triggers, or products were codified in law, and no formal administrative systems were in place to process EIAs at any level of government, despite enabling clauses in the Environment Conservation Act [16]. During this period, voluntary EIAs were conducted according to the Integrated Environmental Management (IEM) procedure published by the Council for the Environment in 1989 and a set of six IEM guideline documents published by the National Department of Environmental Affairs and Tourism [17].

In post-Apartheid South Africa, environmental provisions were enshrined in the Bill of Rights, and EIA was given new impetus in the Environmental Management Policy published in 1997. EIA regulations were promulgated under the National Environmental Management Act No. 107 of 1998 (Republic of South Africa, 1998) [18], locating the administrative function at the provincial or second-tier government level [16]. Subsequent experience revealed problems with the regulations, including lack of clarity leading to inconsistent application of laws across provinces, as well as a process that was not as streamlined or flexible as it could be, lack of proper guidance and abuse of the public participation processes, and problems with the contents, quality and independence of EIA re-

ports [19]. A new set of EIA regulations was drawn up and promulgated on 21 April 2006.

Angolan environmental legislation was updated in the early 1990s with the establishment of the State Secretariat for the Environment and subsequent adoption of the Environment Framework Act, Decree no. 5/98 of 19 June 1998 [13]. Article 16 of the Act requires mandatory EIAs for all undertakings that may have an impact on the balance and well-being of the environment and society. As provided for under Article 16(2), the government established more specific rules on EIA under the Decree on Environmental Impact Assessment (Decree no. 51/04) of 23 July 2004 [20]. In addition, the Decree on Environmental Licensing (Decree no. 59/07) [21] of 14 October 2007 provides additional guidance on the conduct of EIAs. Recently several guidelines on the terms of reference for the elaboration of EIA were published by the Ministry of Environment.

EIA was introduced into European Community law by the Directive (85/337/EEC) [2], which was adopted in July 1985 and amended in March 1997 (97/11/EC) [3]. The purpose of the EU EIA Directive is to insure that the consequences of environmentally sensitive projects are properly considered before they are carried out or authorized. EU Member States are required to comply with the EU EIA Directive.

3.2. EIA Procedural Framework

The EIA process comprises six main elements: screening, scoping, report preparation, public consultation, review, and decision making. The criteria and requirements for each element will vary between jurisdictions, as will the timeline for each element.

Screening determines whether or not a project proposal requires an EIA and what level of EIA is required. All the systems reviewed here use a fairly comprehensive list of projects to identify whether an EIA is required.

An important step in EIA systems, scoping identifies key issues (and non-issues) and concerns and evaluates, organizes, and presents them to assist in analysis and decision-making. Some form of scoping exists in the EIA systems of Kenya, Tanzania, Mozambique, and South Africa. However, there is no formal requirement for scoping in the EU Directive or in Angolan law.

All the EIA systems studied here require public participation, an EIA review stage, and mitigation and monitoring of impacts. All five of the African systems include a legal requirement for preparation of an Environmental Management Plan (EMP).

In all the countries examined here, the EIA is initiated by the proponent. In Kenya, Tanzania, Mozambique, and Angola the proponent is responsible for conducting an EIA. In South Africa, a pre-qualified Environmental Assessment Practitioner appointed by the proponent conducts an EIA.

3.3. Institutional Framework

Figures 1-5 set out the EIA institutional framework in the five African coun-

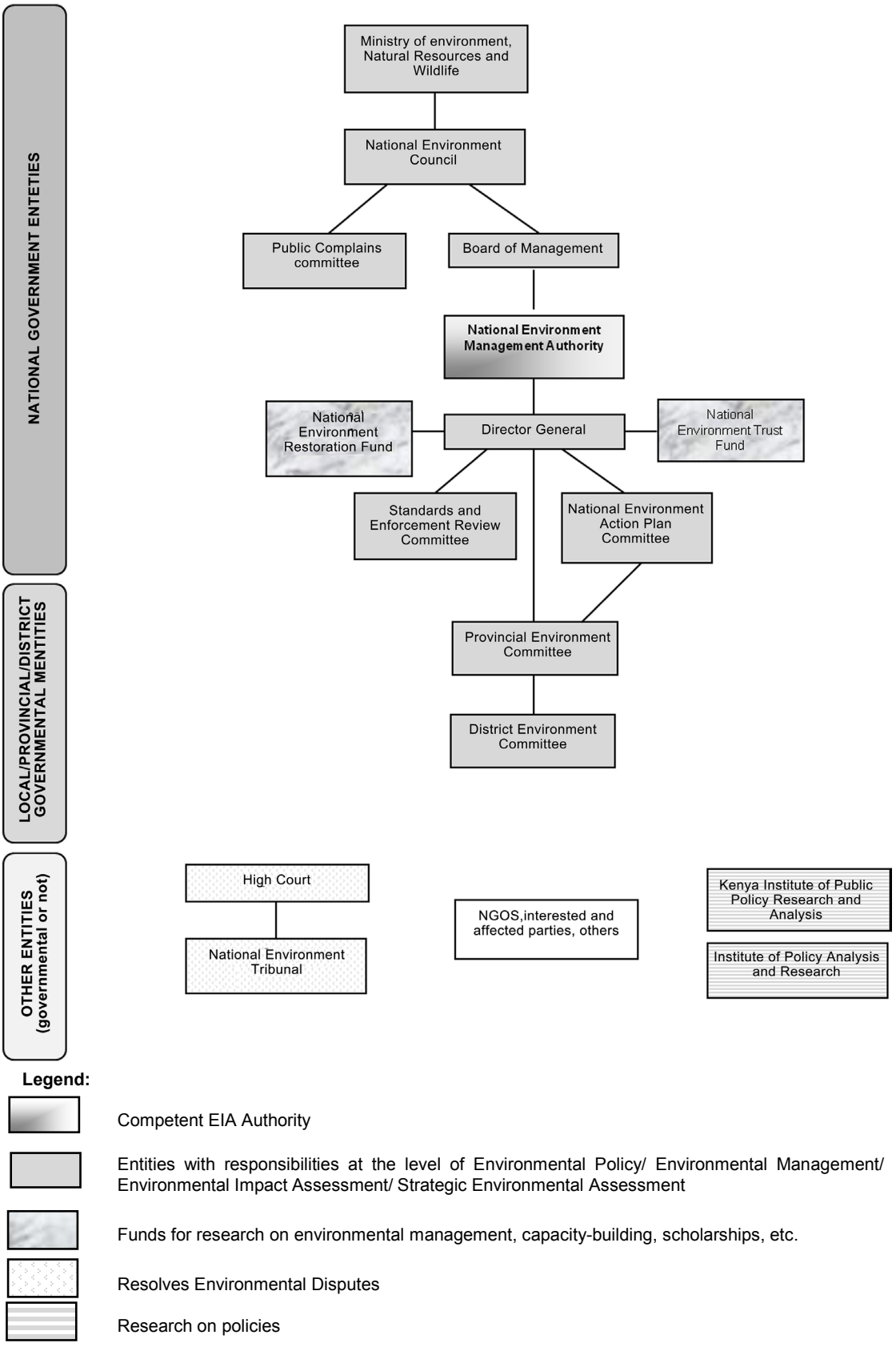

Figure 1. Institutional framework of the EIA process in Kenya. Description: This figure shows all Kenyan institutions (governmental or not) involved in the EIA decision-making process, as well as the road map for procedural arrangements.

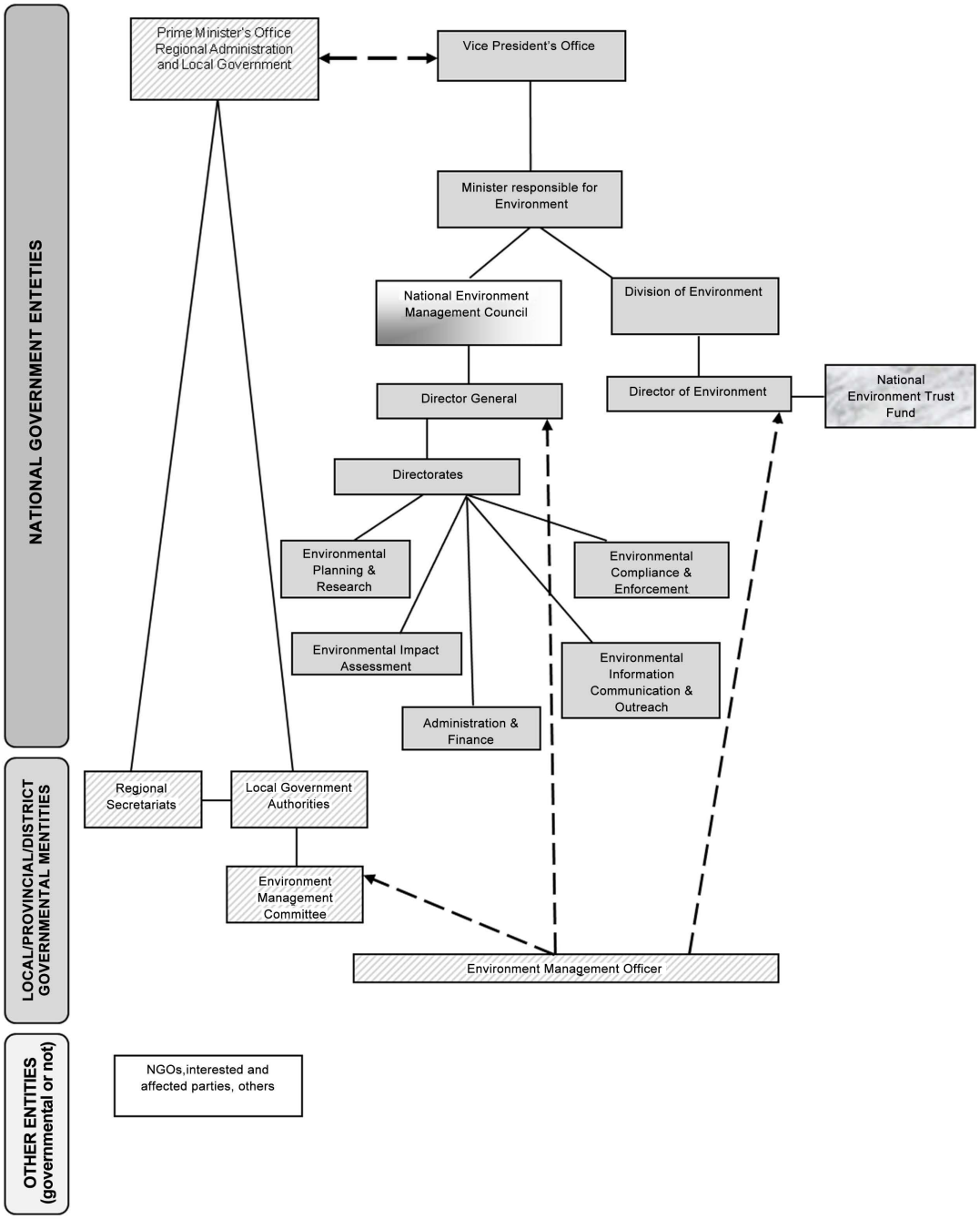

Figure 2. Institutional framework of the EIA process in Tanzania. Description: This figure shows all Tanzanian institutions (governmental or not) involved in the EIA decision-making process, as well as the road map for procedural arrangements.

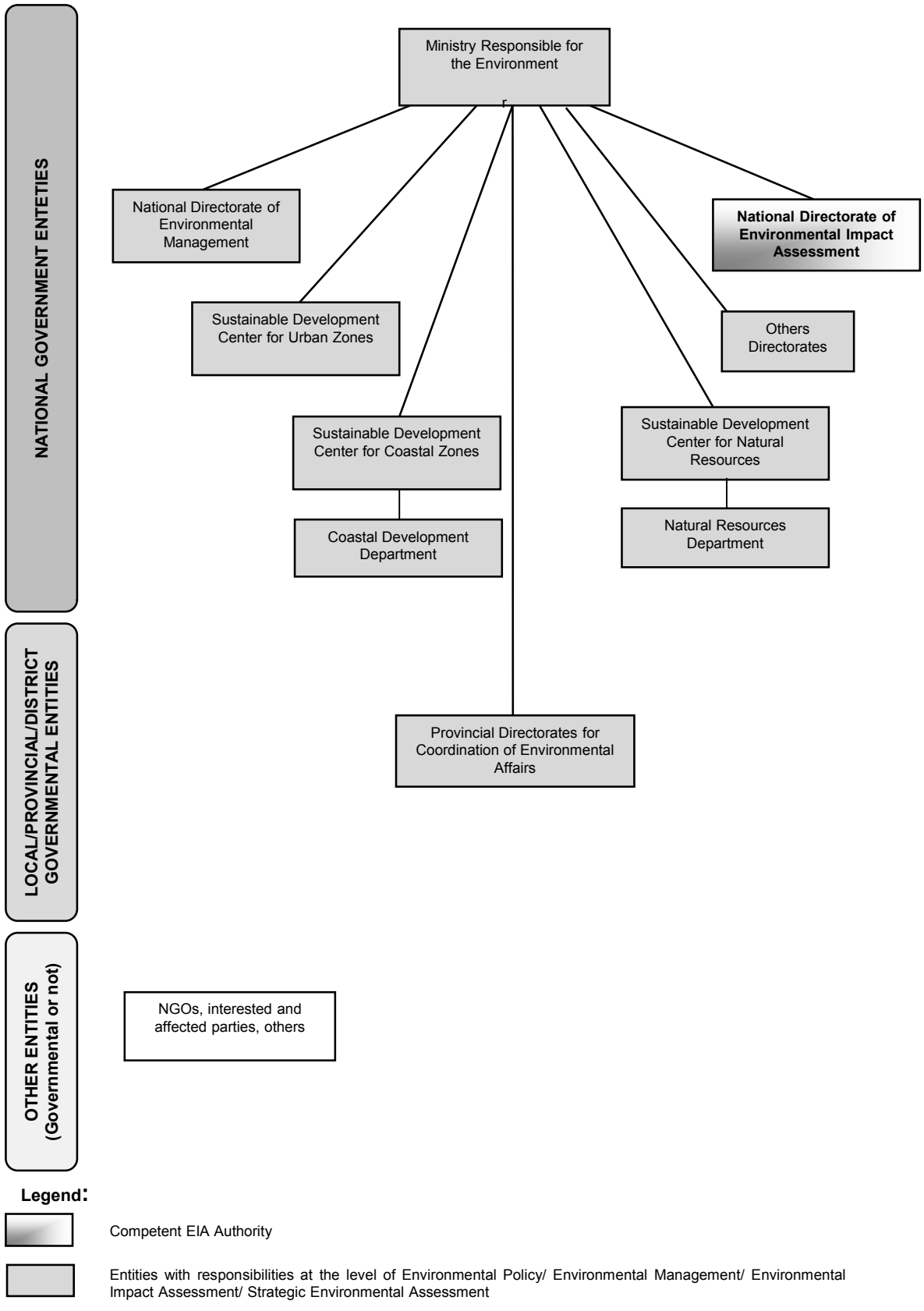

Figure 3. Institutional framework of the EIA process in Mozambique. Description: This figure shows all Mozambican institutions (governmental or not) involved in the EIA decision-making process, as well as the road map for procedural arrangements.

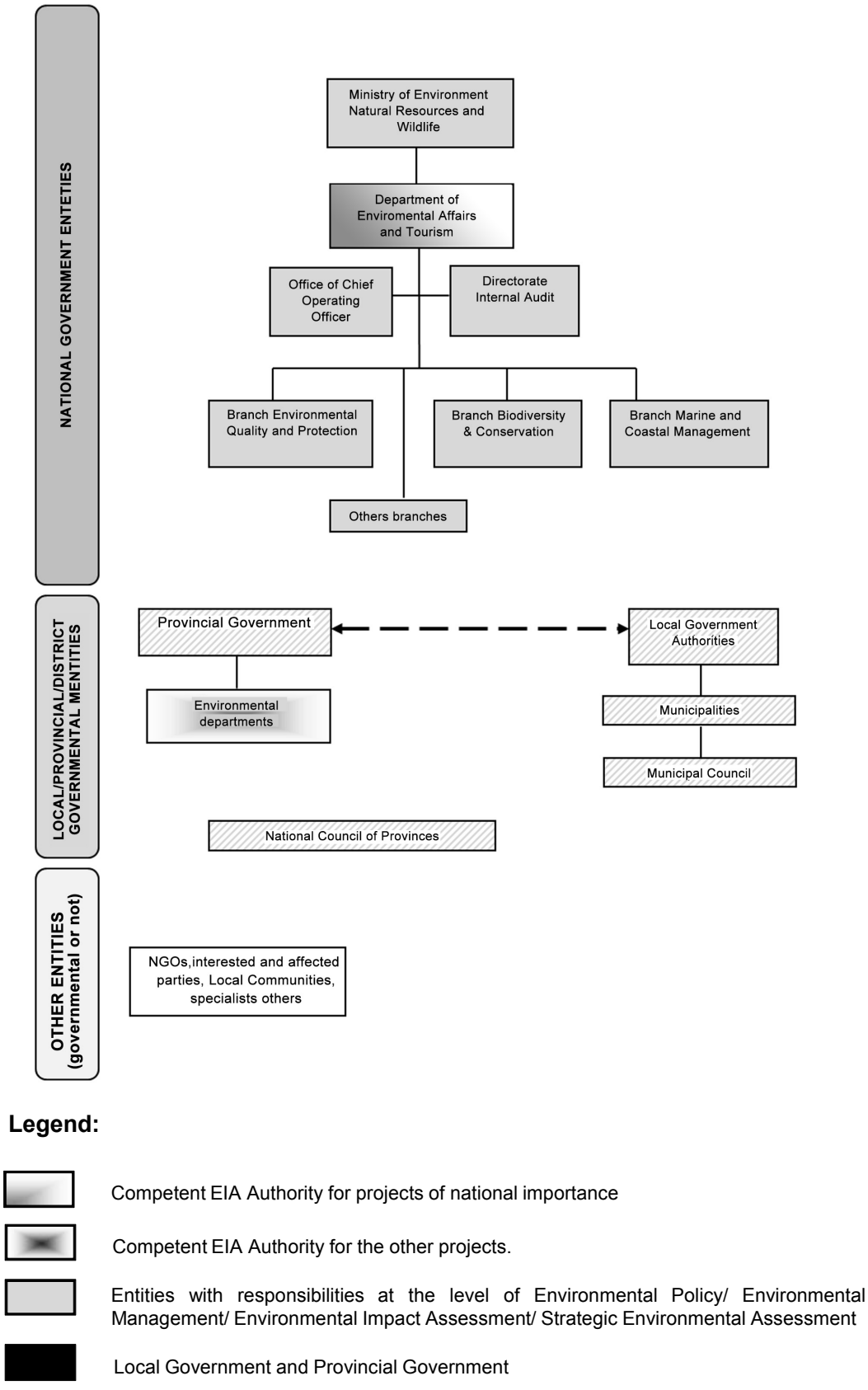

Figure 4. Institutional framework of the EIA process in South Africa. Description: This figure shows all South African institutions (governmental or not) involved in the EIA decision-making process, as well as the road map for procedural arrangements.

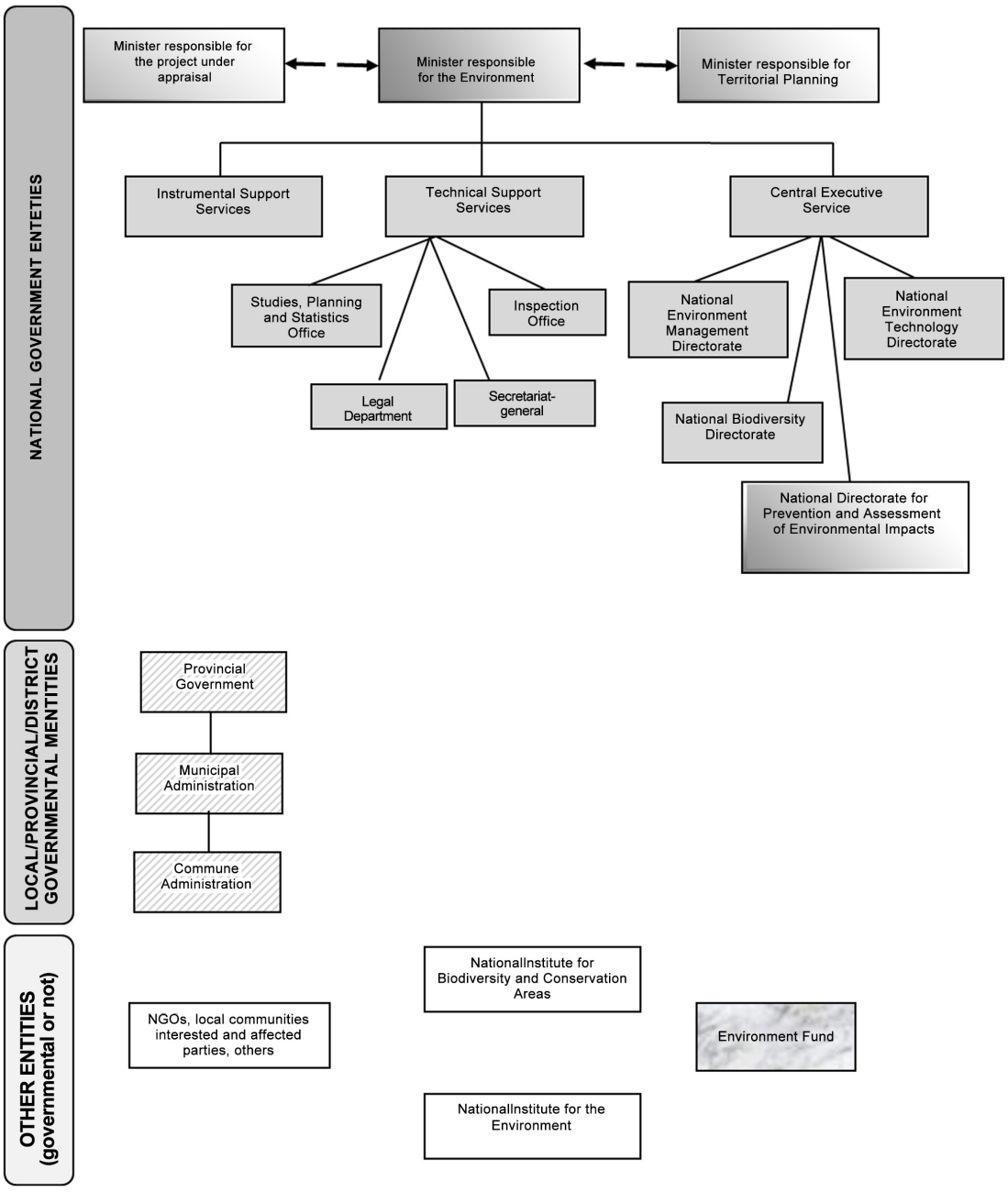

Figure 5. Institutional framework of the EIA process in Angola. Description: This figure shows all Angolan institutions (governmental or not) involved in the EIA decision-making process, as well as the road map for procedural arrangements.

tries. In the EU, the institutional framework will vary from Member State to Member State. In general, the three levels of institutions participate in the EIA process: national government departments and entities, provincial or local government entities, and other governmental and non-state entities (e.g., local communities, research institutes, or non-governmental organizations). The institutional framework will pre-determine the leverage points for EIA inputs in the planning and decision-making processes, the focus of the EIA, the margin for consultation, facilitate participation by the general public and stakeholders, and provide the road map for procedural arrangements. Thus it is vital that the leading institution has a clear mandate and that the institutional framework is well defined. It is readily apparent from the literature review and field experience which institutions are involved in the EIA procedure, however, the process of interaction between them are not always clear in the African countries.

4. Performance of EIA Systems

4.1. Systemic Measurement of Performance

Table 1 summarises the overall comparison and evaluation of the six EIA systems against the systemic standards. The key features of each system are highlighted.

4.1.1. EIA Legislation and Administration

As noted above, the five African countries and the EU have each established a legal regime for EIA. EIA legislation in all of these jurisdictions applies to new projects and expansion and renovation of existing projects. Among the five African jurisdictions, only Mozambique prohibits the proponent from appealing a ruling.

These EIA systems also include legal or procedural specifications for deadlines (see Table 2). The deadlines apply at various points in the EIA process, *i.e.*, pre-assessment, scoping review, terms of reference, and the final assessment itself.

Specific provisions are made for Strategic Environmental Assessments (SEAs). However, Angola doesn't include formal provisions for SEAs in their national legislation. In South Africa, SEAs have been implemented on a voluntary basis since the mid-1990s on the basis of specific guidelines for SEAs.

The regulations and procedures of the respective jurisdictions define the administrative arrangements and roles of the competent authorities involved in the EIA process. Each jurisdiction has identified a specific competent authority for overseeing the EIA process. Informal methods of coordination between competent authorities responsible for managing the EIA process and other entities responsible for pollution control or planning exist in Kenya, Mozambique, Tanzania, South Africa, and Angola. In the EU, coordination mechanisms vary from country to country.

4.1.2. EIA Process

Screening

Table 1. Performance of the EIA systems measured by systemic evaluation criteria. Description: This table summarises the overall comparison and evaluation of the six EIA systems using the systemic evaluation criteria. The most distinctive features of each system are highlighted.

Is the EIA System based on specific and clear legal provisions?	Yes. In: • Environmental Management and Coordination Act, 1999 • Environmental (Impact Assessment and Audit) Regulations, 2003	Yes. In: • The Environmental Management Act, 2004; • The Environmental (Registration of Environmental Experts) regulations, 2005.	Yes. In Decree 76/98, of December 29, revoked by Decree 45/2004, of September 29. Decree 42/2008, of 4 November, change the Decree 45/2004.	Yes. In: Promulgation of EIA Regulations in September 1997 (R1182, R1183 and R1184 on the Environment Conservation Act 73 of 1989). These Regulations were revoked by the EIA Regulations of 21 April 2006.	Yes. In Decree no. 51/2004, of July 23.	Yes. Directive 97/11/EC that alters Directive 85/337/EEC, on evaluation of the effects of specific public and private projects on the environment.[a, b]
Are there mechanisms via which the promoter or members of the general public may file appeals against the decision taken?	When a project is not included in the list that specifies the projects which are obligatorily subject to an EIA, and the project may affect the environment, the NEMA (National Environmental Management Authority) will determine whether or not it is necessary to carry out an EIA. If the promoter does not agree with NEMA's decision concerning the obligation to carry out an EIA it may appeal against the decision in Court within a maximum of 14 days. Any person who disagrees with, or whose interests are damaged as a result of NEMA's decision, approving or rejecting the EIA, may present an appeal in Court within 60 days (after the date of the decision).	Any person who disagrees with, or whose interests are harmed as a result of the Minister's decision, approving or rejecting the EIA, may appeal against the decision in the Environmental Appeal Court.	None.	Any person affected by the decision may present a notice of his intention to file an appeal to any of the following bodies: Minister, MEC or delegated body of the State. If the notice of the appeal is addressed to the Minister, the appeal should be submitted to the DEAT (Department of Environmental Affairs and Tourism). If it is addressed to the MEC, the appeal should be submitted to the Provincial Department responsible for environmental affairs. If it is addressed to the delegated body of the State, the appeal should be presented to the respective body.	An appeal against the decision of the Minister responsible for the Environment may be made under the general terms of administrative litigation and procedures.	Specific legal provisions for each Member State.

Continued

	Yes.	Yes.	Yes.	Yes.	Yes.	
Are there legal provisions or specifications on the deadline available to the EIA Authority in order to issue professional opinions over the course of the various stages of the EIA process?	The EIA Authority after reception of the Project Report shall submit a copy of the report, up to 7 days afterwards, to any Ministry, department, state company or relevant local authority or to the District Environment Committee in order to receive comments. The entities to which the copies of the report have been sent must make a statement within a maximum of 21 days. The EIA Authority. The EIA Authority will issue its final opinion (regarding whether or not the project is subject to an EIA) within a maximum of 45 days after reception of the Project Report. The EIA Authority, after reception of the EIA Report, shall submit a copy of the report, up to 14 days afterwards, to any Ministry, department, state company or relevant local authority in order to receive comments. The entities to which the copies of the report have been sent must make a statement within a maximum of 30 days. The EIA Authority may extend these deadlines.	The NEMC (National Environment Management Council), after reception of the Project Report shall submit a copy of the report, within a maximum of 7 days, to the relevant ministries or public institutes, to the Local Government Environmental Management Officer, and, if more than one district is involved, to the Regional Secretariat in order to receive their comments. The NEMC will issue its final opinion (as to whether or not the project is subject to an EIA) within 45 days after reception of the Project Report. The NEMC after reception of the EIA will submit, up to 14 days later, a copy to any ministry or institute in order to receive comments, and to notify and invite the general public to take part. The entities to which the copies of the report have been sent must make a statement within a maximum of 30 days The Minister will provide his final opinion up to 30 days after reception of the recommendations from the NEMC.	The EIA Authority must observe the following deadlines: • Pre-assessment up to 5 working days; • EPDA and ToR up to 30 working days; • EIA-up to 45 working days. The Provincial Environmental Coordination Departments must observe the following deadlines:	The Competent Authority must observe the following deadlines: • Basic Assessment -acknowledge receipt (if application is in order) or reject application (if not in order); • Basic Assessment decision of accept or refuse 30 days; • Scoping report review-30 days; • Impact Assessment Report review-60 days;	Within a maximum of 30 days counted from the date of reception of the documentation, the Ministry responsible for the environment will send the respective opinion to the competent authority in order to licence or authorise the project, accompanied by the public consultation report that it has organised and analysis thereof.	Varies for each Member State.

Continued

	The EIA Authority will issue its final opinion concerning the EIA up to 3 months after reception of the EIA Report.		• Pre-assessment -up to 8 working days; • Terms of Reference-up to 15 working days; • SES-up to 30 working days. The deadlines are counted from the date of registration of the entry of documentation to the competent authority, and are interrupted whenever complementary information is requested and resumed after such information has been duly resented by the proponent. In exceptional circumstances, the Minister for Coordination of Environmental Affairs, on the basis of a duly well-grounded proposal presented by DNEIA or DPCA, may extend the established deadlines in accordance with the specific characteristics of each case.	• decision to grant or refuse Environmental Authorization 45 days; • must in writing grant or refuse authorization in respect of all or part of the activity-10 days.	
	Yes.	Yes.	Yes.	Yes.	
Are there provisions on public consultation deadlines?	The EIA Authority, up to 14 days after reception of the EIA Report, shall invite the general public to make oral or written comments in relation to the report.	The Council shall within thirty days of receipt of an Environmental Impact Statement decide whether or not to convene a public hearing for purposes of collecting submissiona comments on the proposed project or undertaking.	The convocation for a public audience or consultation shall be made public at least 15 days prior to the meeting, using the appropriate means for the respective publication.	No.	The public consultation shall be carried out during a period of at least five days and no more than 10 days. At the end of the period set for the public consultation, a succinct report will be drawn up, within the following 8 days, specifying the diligent proceedings taken, the participation recorded and the conclusions to be drawn.	Varies for each Member State.

Continued

	Publication of a notice concerning the project, during two consecutive weeks in a national circulation newspaper. Produce an advertisement in the official and local language in a national coverage radio station at least once per week during two consecutive weeks. At least three public meetings shall be held. The notices shall be sent out with at least one week prior notice before the meetings.	The date and venue of the public hearing shall be publicitized at least one week prior to the meeting. On the conclusion of the public hearing, the presiding officer shall comply a report of the views presented at the public hearing and submit the report to the Director General within fourteen days from the date of completion of the public hearing.	All oral or written presentations or manifestations produced within the framework of the public participation process, presented to local bodies and/or to the proponent, up to 10 days before the revision period of the Simplified Environmental Study (SES) or of the EIA will be registered and will be considered in the decision of the Technical Evaluation Committee, provided that they are related to the environmental impacts of the activities.		
Are there provisions on the deadlines for presenting appeals against a decision?	Yes. The deadlines are as follows: • 14 days-For the promoter to appeal against NEMA's decision concerning the obligation to carry out an EIA; • 60 days (After the date of the decision)-for any person who disagrees or whose interests are affected by the decision of NEMA, as to whether or not approve an EIA, may appeal in the Court.	No.	No.	Yes. The appeal must be presented within a maximum of 30 days counted from the date of presentation of the notice of the intention to file an appeal. The Minister, MEC or delegated body of the State, as appropriate, may, in writing, extend the deadline for filing an appeal.	No.	Varies for each Member State.

Continued

Are there provisions on Strategic Environmental Assessments (SEA)?	In accordance with Article 42, paragraph 1, of the Environmental (Impact Assessment and Audit) Regulations of 2003, the agencies, in conjunction with NEMA, shall submit all proposals for policies, programmes and plans for a SEA, in order to determine which are the most ecologically and economically efficient when applied individually or in combination with others.	In accordance with Article 104, paragraph 1, of the 2004 Environmental Management Act, the SEA of Regulations, Policies, Strategies, Programmes and Plans shall be drawn up.	Yes.	No. In South Africa, SEAs have been widely implemented on a voluntary basis since the mid-1990s (over 50 SEAs were identified). There are specific guidelines for the SEA.	No.	Yes, Directive 2001/42/EC of the European Parliament and Council, of June 27, 2001, on evaluation of the effects of specific plans and programmes on the environment.
Administration						
Which is the competent EIA authority?	NEMA (National Environment Management Authority)	NEMC (National Environment Management Council) Minister Responsible for the Environment Issues-has the final decision as to whether an EIA will be approved, conditionally approved or rejected.	Ministry for Coordination of Environmental Affairs (MCEA), through the National Environmental Impact Assessment Department (DNEIA) and the Provincial Environmental Action Coordination Department (DPCA).	DEAT is responsible for evaluating projects of national importance (*i.e.* projects that cross provincial or national boundaries). The environmental departments of the various provincial governments are responsible for evaluating applications that have been submitted in terms of the EIA regulations.	In accordance with Decree no. 51/04,of July 23, the competency for the AIA procedure pertains to the Minister responsible for the Environment, who will designate the entity responsible for drawing up the procedure. Since publication of Decree-Law no. 4/09, of May 18, the National Directorate for Prevention and Assessment of Environmental Impacts is the service within the Ministry of the Environment responsible for AIA procedures. Since then, it has no longer be necessary for the Minister responsible for the Environment to designate the entity responsible for drawing up this procedure. This competency is exercised jointly with the Minister responsible for the project under appraisal and the Minister responsible for Territorial Planning, in the case of projects located within urban perimeters or which cut across settlements.	Each Member State has at least one competent authority for EIAs.

Continued

Who is responsible for Revision of the Environmental Impact Study (EIA)?	NEMA	The NEMC (National Environment Management Council) in collaboration with inter-sectorial consultative committees	Technical Evaluation Committee (TEC)	DEAT or an expert in the area	The Ministries responsible for the Environment or the expert in the area.	Each Member State has a Structure/ commission responsible for revision of the EIA.
What are the sectorial responsibilities of the authorities in the EIA process?	NEMA can submit a copy of the EIA report to any Ministry, department, state company or relevant local authority for comment.	Environmental Experts Advisor Community	Relevant sectorial authorities will be represented in the TEC.	Relevant sectorial authorities are consulted.	Any relevant Ministry, department, state company or local authority is consulted.	A different situation in each Member State.
What is the level of coordination with any other pollution control and planning organisation?	Any Ministry, department, state company or relevant local authority.	Environmental Experts Advisor Community	TEC	Any relevant sectorial authorities	Any relevant Ministry, department, state company or local authority.	A different situation in each Member State.
EIA Process						
What is the process for identifying which projects are subject to EIAs?	Through the list identifying the projects that are obligatorily subject to an EIA.	Through the list identifying the projects that are obligatorily subject to an EIA.	Category A. Activities contained in Annex I to Decree 45/2004, will be subject to carrying out an EIA. The activities included in Annex II and evaluated as pertaining to category B, are subject to carrying out an SES. Category C. Activities contained in Annex III, must observe the norms specified within the specific directives of correct environmental management	Through the list identifying the projects that are obligatorily subject to an EIA.	Through the list identifying the projects that are obligatorily subject to an EIA.	Through the list identifying the projects that are obligatorily subject to an EIA. (Annex I of the Directive). [c, d]
	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.
Is the methodology used in order to identify projects systematic?	When a project is not included in the list that specifies the projects which are obligatorily subject to an EIA, and the project may affect the environment, NEMA will determine whether or not it is necessary to carry out an EIA.	The EIA is not obligatory for those activities whose probability of causing serious effects to the environment is reduced or which are not located in environmentally sensitive areas	All activities that may cause an impact on the environment, that are not included in Annexes I, II and III, will be subject to pre-assessment by the MCEA.	All activities that may cause an impact on the environment, that are not included in the list identifying the projects that are obligatorily subject to an EIA, will be subject to pre-assessment by the EIA Authority.	Decree no. 51/2004 states that the EIA is obligatory for projects identified in the Annex to the Decree. Real estate developments that are considered by the government to be of interest for defence and National Security may be exempted from carrying out an EIA.	Annex II of the Directive covers the projects for which each Member State shall determine whether or not it is subject to an EIA, via analysis on a case-by-case basis, or application of selection criteria.

Continued

		For the list of activities identified in Annex II of the Screening and Scoping Guidelines, the NEMC will evaluate whether or not an EIA is necessary.				Annex III specifies these criteria, indicating the probability of negative effects on the environment.
Are there legal requirements for carrying out scoping (Scoping Definition Proposals)? If so, what are the respective details?	Yes. Drawing up the scoping and Terms of Reference (ToR) for all projects subject to an EIA (by the proponent).	Yes. Preparation of the scoping and Terms of Reference (ToR) for projects included in the obligatory list (by the proponent).	Yes. Study of Environmental Pre-viability and definition of Scope (EPDA) is obligatory for all activities classified as pertaining to category A.	Yes. A Scoping shall be drawn up for all activities subject to an EIA.	No.	There are no requirements in the legal Directives for drawing up a Scoping Definition Proposal. [e]
Are there public consultations during the scoping process?	No.	Yes. The proponent/ certified and registered experts or a registered company shall draw up a list of interested or affected parties and will consult them. Minutes should be drawn up following these consultations referring to the topics addressed and which questions/ constraints were raised. These minutes should be duly signed by all intervening parties.	No.	Yes. The pre-qualified expert shall carry out a public consultation.	Not applicable	No.[f, g]
Does the scoping need to be revised? If so, who is responsible for the revision.	No.	No.	Yes. The Technical Evaluation Committee (inter-sectorial committee responsible for analysing the technical documents drawn up within the framework of the EIA) shall carry out the revision.	Yes. The scoping needs to be revised. Revision may be carried out by the Competent Authority.	Not applicable	Specific legal provisions for each Member State.
Are there requirements which oblige the promoter to demonstrate that alternatives to the project were taken into consideration?	Yes. Analysis of the alternatives must include identification of alternative locations, design and technology.	Yes. Analysis of the alternatives must include identification of alternative locations, design and technology.	Yes. Viable alternatives shall be identified for the planning, construction and operation stages and, in the case of temporary activities, for their respective deactivation.	Yes. Analysis of the alternatives must include identification of alternative locations, type of activity to be developed, design, technology and operational aspects of the activity	Yes. Analysis of the alternatives must include identification of all the technological alternatives and alternative locations, confronting them with the possibility that the project will not be executed.	Yes. The alternatives studied by the proponent must be described, indicating the reasons for the final choice (taking into consideration the effects on the environment).[h, i]

Continued

	Choice of the location, design and technology proposed in the project should be duly well-grounded.	Due grounds should be provided, justifying the choice of the location proposed in the project together with the proposed process and technology .		Due grounds shall be presented for the choices made.		
Are the details of the EIA Report defined in the legislation?	The contents of the EIA Report are described in detail in the EIA legislation.	The contents of the EIA Report are described in detail in the EIA legislation and in the Guide	The contents of the EIA Report are described in detail in the EIA legislation and in the Guide	The contents of the EIA Report are described in detail in the EIA legislation and in the Guide	The contents of the EIA Report are described in detail in the EIA legislation.	The contents of the EIA Report are described in detail in the Directive. [j, k]
	Yes.	Yes.	Yes.	Yes.	Yes.	
Are there requirements for drawing up environmental management plans? If so what are the respective details	The Environmental Management Plan (EMP) will propose measures in order to eliminate, minimise and mitigate adverse impacts on the environment, including the associated cost, scheduling and the entity responsible for implementation, including monitoring and implementation of environmental audits during the operation and deactivation stages.	The Environmental Management Plan (EMP) will propose measures in order to eliminate, minimise and mitigate adverse impacts on the environment, including the associated cost, scheduling and the entity responsible for implementation.	The Environmental Management Plan of the activity will include monitoring impacts, an environmental educational programme and accident contingency plans.	The Environmental Management Plan (EMP) will contain information on: • the person responsible for drawing up the plan and evidence of his technical capacities for this task; • measures designed to manage or mitigate the environmental impacts foreseen in the planning and design, pre-constructio n, construction, operation stages, rehabilitation of the environment and de-activation (when suitable);	According to Decree no. 51/2004, a supervision and monitoring programme of the positive and negative impacts must be drawn up, indicating the factors and parameters to be taken into consideration.	Specific legal provisions for each Member State.

Continued

				• aspects of the activity covered by the EMP (detailed description); • The person who will be responsible for implementing the measures; • Scheduling of implementation of the measures specified within the EMP, when appropriate; • Proposal of a mechanism to monitor compliance with the terms established in the EMP and the respective reports.		
	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.
Are there requirements for proposing measures to minimise environmental impacts? If so, are such measures presented for each of the project stages?	The mitigation measures shall include the means and forms of management, use all the best available technologies and good practices existing in engineering structures in order to minimise the negative aspects deriving from the project (environmental, socioeconomic and cultural), and also foster the positive aspects. Although legislation does not specify that these measures must be presented for each of the project's development stages, this practice exists.	Recommendations or a plan aimed at mitigating the likely impacts should be presented. Although legislation does not specify that these measures must be presented for each of the project's development stages, this practice exists.	A set of measures shall be proposed aimed at minimising or avoiding negative effects and fostering positive effects of the activity on the biophysical and socioeconomic environment. Although legislation does not specify that these measures must be presented for each of the project's development stages, this practice exists.	A set of measures shall be proposed and aimed at minimising or avoiding the negative effects and fostering the positive effects of an activity. The legislation states that these measures must be presented for each of the project's development stages.	Measures designed to mitigate the negative impacts will be defined. Although legislation does not specify that these measures must be presented for each of the project's development stages, some of the Environmental Impact Studies to which we had access revealed that this practice exists.	Varies for each Member State. l, m

Continued

Are there requirements for drawing up a monitoring plan? If so, what should be included within this plan.	Monitoring during the operation and deactivation stages are included in the EMP. The elements that should be contemplated are not established.	Monitoring is foreseen. There is no specification of the terms that should be contemplated.	The Environmental Management Plan of the activity includes monitoring of the impacts. There is no specification of the terms that should be contemplated.	Contemplated within the scope of the EMP. There is no specification of the terms that should be contemplated.	According to Decree no. 51/2004, a supervision and monitoring programme of the positive and negative impacts must be drawn up, indicating the factors and parameters to be taken into consideration.	Varies for each Member State.
Are there requirements for revision of the EIA Report? If so, how does this take place?	The Ministry, departments, state companies or local authorities with management and control functions of the environment and natural resources may revise the EIA report in order to guarantee that it complies with the developed reference terms.	The revision process should be based on the following criteria: • Balance between the short and long-term socioeconomic benefits as contrasted to the damages caused to the physical and human environment; • The nature of the project and whether or not it complies with environmental quality standards; • possible mitigation measures or other corrective measures; • Comments retrieved during the public consultations and other consultation processes; • amongst others. The NEMC may, during the revision process, make a visit in order to inspect or verify any location associated to the project under analysis. The respective travel expenses will be borne by the proponent.	The MCEA will designate the Technical Evaluation Committee (TEC) and revise the EPDA and the EIA report. The TEC will draw up the technical report of the revision and respective well-grounded technical opinion, and will issue a final assessment statement. This statement will be sent to the EIA Authority for the final decision.	Yes. Revision is carried out by the EIA Authority (DEAT) or by an expert in the respective area.	According to prevailing legislation, EIA reviews are carried out by technicians from the Ministry of the Environment/ National Directorate for Prevention and Assessment of Environmental Impacts. Nonetheless, no EIA review criteria have been established.	Specific legal provisions for each Member State. n

Continued

Which body or bodies are responsible for revision of the EIA Report?	The Ministry, departments, state companies or local authority with management and control functions of the environment or natural resources, in collaboration with NEMA.	The NEMC may create inter-sectorial consultative committees, at the national level and, when suitable, at the level of the Local Government Authority in order to provide advice during revision of the EIA report. The committees must be constituted by at least 12 specialists, in order to guarantee multidisciplinarity. The inter-sectorial consultative committees may, subject to approval from NEMC's Director-General, incorporate other persons necessary for their correct functioning. The minimum quorum necessary for holding a meeting of the committee is 2/3. On the basis of the NEMC's recommendations, the Minister will issue his decision.	MCEA and TEC. The TEC is constituted by (always an uneven number of members): • a representative of the DNEIA, who will chair the Committee; • a representative of the Ministry responsible for the area of the proposed activity; • a representative of FUNAB; • a representative of the local authority for the area where the activity is located, if the proposed location for implementation of the activity has been authorised in this territory; • Other representatives of environmental government bodies, teaching institutions or research centres;	DEAT or an expert in the area.	In practice, EIA reviews have been carried out by technicians from the Ministry of the Environment/ National Directorate for Prevention and Assessment of Environmental Impacts and/or experts in the field.	Varies for each Member State. n

Continued

			• A specialised technician in the area of the respective activity requested or contracted by the EIA Authority, whenever this proves to be necessary.			
May the proponent take part in the revision process or respond to questions raised during revision of the EIA Report?	The proponent may respond to questions raised during revision of the EIA Report.	The proponent may respond to questions raised during revision of the EIA Report. The practice exists, in several projects, of the proponent and certified and registered expert(s) (or registered company) to attend the inter-sectorial consultative committees .	Additional information and amendments may be requested.	The proponent may respond to questions raised during revision of the EIA Report.	Not applicable.	Varies for each Member State. n
	Yes.	Yes.	Yes.	Yes.	No.	Yes.
Is the EIA Report made available for a Public Consultation? If so, how does this take place.	The Presiding Officer in collaboration with NEMA will determine the procedural rules of the Public Consultation. The Public Consultation must be held in a convenient and accessible site for persons who may be affected by the project. The proponent should be given the opportunity to make a presentation and respond to the questions raised during the Public Consultation.	Any constraints raised during the consultation of interested parties during the scoping stage, shall be duly addressed when drawing up the EIA. Whenever part of the general public expresses a strong concern in relation to the project and its impact is likely to be extensive and significant, the NEMC will organise a Public Consultation. The Public Consultation will be chaired by a qualified person, indicated by the NEMC.	The Terms of Reference (ToR) governing the process of drawing up the EIA or SES must describe the Public Consultation procedure to be followed. The proponent is responsible for public participation, during the conception stage of the activity, up to submission of the EIA and SES reports. MCEA is responsible for public participation, during the revision stage of the ToR up to Environmental Licensing.	Chapter 6 of the EIA Regulations of April 21, 2006 presents details of the Public Consultation process.	The public consolidation process begins with prior disclosure of a non-technical summary of the Environmental Impact Study, specifying the key effects that the project may generate in the environment, in particular use of natural resources, emission of polluting agents, creation of disturbances (ranging from intensity of lighting/heat to noise and smells) or elimination of residues, identifying the preventive methods used in order to evaluate and diminish the effects on the environment, together with the project's impact on the socioeconomic environment. Disclosure of these elements must respect industrial confidentiality and observe legal norms protecting non-patented technical knowledge. In the framework of the public consultation, statements and complaints that have been presented, related to the project, will be considered and appraised.	The methodology used in order to carry out Public Consultations varies in each Member State.

Continued

	The Presiding Officer will draw up a report including the viewpoints presented during the Public Consultation and present it to the Director General.	The Public Consultation must be held in a convenient and accessible site for persons who may be affected by the project.	Public participation is obligatory for category A activities, and is optional for category B. However it should always take place whenever the activities imply: permanent or temporary displacement of populations or communities; displacement of goods or restriction on the use of natural resources.			
		An opportunity must be given to the proponent to make a presentation and respond to questions raised during the Public Consultation. The person chairing the Public Consultation, in collaboration with the NEMC, will determine the procedural rules of the Public Consultation. This person will also be responsible for drawing up a report including the viewpoints presented during the Public Consultation and then present it to the Director General.	The public participation process should result in a Final Report.			
Is the EIA Report altered in function of the comments received during the Public Consultation?	No legal provisions exist for this purpose.	Feedback from the consultations made shall be incorporated in the EIA.	No legal provisions exist for this purpose.		No legal provisions exist for this purpose.	Varies from Member State to Member State.
Is there a systematic decision-making process?	NEMA will decide upon the project's environmental acceptability on the basis of the considerations taken from the revision process.	The NEMC may create inter-sectorial consultative committees, at the national level and, when suitable at the level of the Local Government Authority, in order to provide advice during revision of the EIA report.	The Technical Evaluation Committee (TEC) will revise the EPDA and the EIA report, or revise the SES.	DEAT decides on the environmental acceptability of the project on the basis of conclusions withdrawn during the revision process.	On the basis of existing practice, the Minister responsible for the Environment will decide upon the project's environmental acceptability on the basis of conclusions reached during the revision process.	Varies for each Member State. o, p

Continued

		The Minister will issue his decision on the basis of the NEMC's recommendations	The TEC will draw up the duly well-grounded technical revision report and the respective technical opinion and will issue a final assessment statement. In the case of an EIA, this declaration will be sent to the EIA Authority for the final decision. In the case of an SES, the PDCA will take a decision on the environmental viability of the proposed activity.		
Is there experience in Strategic Environmental Assessment?	Yes. Limited.	Yes. Limited.	No.	In South Africa, SEAs have been widely implemented on a voluntary basis since the mid-1990s (over 50 SEAs were identified).	No. Various SEAs implemented in each Member State.

All systems reviewed here use fairly comprehensive lists of projects in order to identify whether an EIA is required.

As specified in the First Schedule of the Tanzanian EIA regulations, screening procedures are based on two lists of projects: those requiring a mandatory EIA, and small-scale activities and enterprises that required registration (but may or may not require EIA). The Second Schedule lists the screening criteria to be used.

The screening procedures in Mozambique relate to three lists of activities (Categories A, B and C). All Category A activities identified in Appendix I must draw up an Environmental Impact Report (EIR). The activities included in Appendix II, and those classified as category B, are subject to a Simplified Environmental Impact Report (SER). Activities that might have an environmental impact and are not listed in Appendices I and III are subject to pre-assessment by the Ministry for Environmental Coordination (MCEA).

In South Africa, the Environmental Assessment Practitioner (EAP) manages the Application for an Environmental Authorisation on behalf of the proponent and determines which process to follow: Basic Assessment, Scoping and EIA, or request an Exemption. In general, activities identified in Listing Note 1 no. R386 are subject to a Basic Assessment and those in Listing Note 2 no. R387 are subject to Scoping and an EIA. If the competent authority cannot reach a decision based on a Basic Assessment, it can order the proponent to subject the activity to

Table 2. Performance of the EIA system measured by foundation evaluation criteria. Description: This table summarises the performance of the six EIA systems using the relevant foundation criteria. The most distinctive features of each system are highlighted.

EVALUATION CRITERIA	KENYA	Tanzania	MOZAMBIQUE	SOUTH AFRICA	Angola	European Union (EU)
	Yes.	Yes.	Yes.	Yes.	No.	Yes.
Are there General and/or Specific Guides, including any sectorial procedures, drawn up by the competent authority?	General Guidelines on Environmental Impact Assessments and Administrative Procedures.	Guidelines for: General guidelines on Environmental Impact Assessment and Procedures; Screening and Proposal of Definition of the Framework; Requirements and content of the Report; Revision and Monitoring. There is also a checklist with environmental characteristics.	General Guidelines on Environmental Impact Assessments and Public Participation.	Guidelines for: drawing up Environmental Impact Reports; Criteria for determining alternatives in EIA; drawing up Environmental Management Plans; for determine cumulative effects; drawing up Revisions of the EIA.		Guidelines for drawing up Revision of EIAs, *Screening* and the Proposal of the Definition of the Framework. There are also *checklists* for *Screening* processes and the Proposal of the Definition of the Framework.
Does the EIA System need to be monitored, and if so, is it altered in function of feedback from previous experience?	Monitoring of the EIA System is required in national legislation. There is virtually no monitoring of the EIA system.	Monitoring of the EIA System is required in national legislation. There is virtually no monitoring of the EIA system	Monitoring of the EIA System is required in national legislation. There is virtually no monitoring of the EIA system	Monitoring of the EIA System is not required in national legislation. Nonetheless, such monitoring does exist[a]. Feedback from previous experience (around 9 years) was taken into consideration when drawing up the new EIA regulations	There is virtually no monitoring of the EIA system.	Monitoring of the EIA System is required by the Directive. Monitoring of the EIA System is implemented and, if necessary, is altered in order to contemplate feedback from past experience.
What is the source of skills for coordinating EIA?	Skills for coordinating EIAs exists in Universities, Research Institutes and private consultancy firms.	Skills for coordinating EIAs exists in Universities, Research Institutes and private consultancy firms.	Skills for coordinating EIAs exists in Universities, Research Institutes and private consultancy firms.	Skills for coordinating EIAs exists in Universities, Research Institutes and private consultancy firms.	Skills for coordinating EIAs exists in Universities, Research Institutes and private consultancy firms.	Skills for coordinating EIAs exists in Universities, Research Institutes and private consultancy firms.

Scoping and EIA. A proponent can also obtain written authorisation from the competent authority to subject an activity listed in Listing Note 1 n.˚ R386 to Scoping and EIA.

In Angola, the EIA is obligatory for projects identified in the Annex to Decree no. 51/04. Real estate developments considered by the government to be of in-

terest for defence and national security may be exempted from an EIA.

The screening procedure in the EU EIA Directive is based on two lists of activities: Annex 1 projects requiring a mandatory EIA, and Annex 2 projects for which Member States must determine whether or not an EIA is required on a case-by-case basis or by applying criteria thresholds. Annex 3 stipulates environmental effects criteria to be applied to projects for Annex 2 screening decisions.

Scoping

Some form of scoping exists in the EIA systems of Kenya, Tanzania, Mozambique and South Africa. In Angola there is no formal requirement for scoping. There is also no formal requirement for scoping in the EU Directive. However, a number of Member States (e.g., Germany) have made provisions for scoping in their national legislation. Other Member States (e.g., Ireland) either have certain non-mandatory arrangements for scoping or have encouraged developers to use this practice.

In Kenya, for those projects on the mandatory EIA list, the proponent is required to perform a scoping procedure and draw up terms of reference (ToR) that provide specific guidelines for undertaking the EIA study. The scoping results will include, but will not be limited to, the following aspects: the purpose of the ToR, description of the project and identification of the project's proponent, specific background objectives for the project, existing environmental conditions, proposed project activities, social analysis of the project's alternatives, identification of environmental impacts, proposed mitigation measures, social analysis, possible information gaps, and conclusions and recommendations. The scoping review should also clearly identify how the affected community will be involved in the project formulation, e.g., via public meetings ("barazas"), questionnaires and direct interviews.

In Tanzania, if screening shows that the proposed project will have significant adverse environmental impacts, the proponent will be required to perform a scoping procedure, draw up ToR, and prepare a written report on the results of the scoping exercise. This report will serve as a record for interested and affected parties and as guidelines for the EIA. At a minimum the report should indicate how scoping was undertaken; how the public was involved; how the authorities, and interested and affected parties were consulted, including dates and summaries of issues raised; alternatives to be examined in the impact assessment; the main issues of concern; and the specific guidelines for undertaking and preparing the EIA.

Following identification of key environmental issues of concern and how various stakeholders will be involved, the proponent will draw up the ToR for the EIA. The ToR must indicate that the Environmental Impact Statement will include: a description of the proposed undertaking and analysis of the need/ reason for the undertaking; objective of the undertaking; other options for carrying out the undertaking; alternatives to the undertaking; description of the existing environment that will be directly or indirectly affected; description of the future

environment, predicting its probable status were the undertaking not to take place; environmental impacts that the undertaking may cause; proposed measures to prevent or mitigate all adverse environmental impacts; evaluation of opportunities and constraints to the environment as a result of the undertaking; a proposal for an environmental management programme to cover the construction, operation and decommissioning stages of the undertaking; a proposal for environmental monitoring; a proposal for a public information programme. At the end of the scoping procedure, the ToR and the scoping report must be submitted to NEMC for approval. When necessary, an inspection visit to the site(s) will be made.

In Mozambique, a Study of Environmental Pre-viability and Definition of Scope (EPDA) is obligatory for all Category A activities. The EPDA report should contain the following information:

1) Non-technical summary identifying the main issues, conclusions and proposals;

2) Identification and address of the proponent, as well as the details of the multi-subject team responsible for drawing up the EIR;

3) Limits of the area of indirect influence of the activity and patterns of land use in the area of direct and indirect influence;

4) Description of the activity and different actions foreseen therein, as well as the options to mitigate environmental impacts during the planning, construction, and operation stages and, for a temporary activity, decommissioning;

5) Bio-physical and socio-economic description of the site;

6) Identification and assessment of critical issues of the activity;

7) Indication of the potential environmental impacts of the activity;

8) Identification and description of aspects to be investigated in detail during the EIR.

In South Africa, a scoping will be drawn up for all activities identified under Listing Note 2 n.° R387. The Scoping Report (including the Plan of Study for the EIA) must include a description of the proposed activity and feasible and reasonable alternatives; a description of the property and the environment that may be affected and the manner in which the biological, social, economic and cultural aspects of the environment may be impacted by the proposed activity; and a description of environmental issues and potential impacts, including cumulative impacts that have been identified, and details of the public participation process undertaken. In addition, the Scoping Report must contain a roadmap for the EIA, referred to as the Plan of Study for the EIA, specifying the methodology to be used to assess the potential impacts, and the specialists or specialist reports that are required.

Review

The most important quality control feature within an EIA is the review stage as it helps to ensure that information concerning the environmental impacts of an action or project is adequate prior to its use in decision-making. Therefore, it is particularly important that this stage is carried out as effectively and efficiently

as possible. Various methods to ensure objectivity of the review phase can be used. These include "use of review criteria, accreditation of EIA report review consultants, setting up of an independent review body, publication of the results of the review and involvement of consultees and the public" [5]. An independent institutional location for the EIA review function enhances EIA effectiveness. Each of the five African EIA systems reviewed here requires use of one or more of these methods to ensure objectivity in its review process.

In Kenya, the National Environmental Management Authority (NEMA) reviews EIAs. The ToR includes a checklist for lead agencies for review of an EIA Study report.

In Tanzania, a multi-disciplinary Technical Review Committee assists NEMC in the review process. The EIA regulations include review criteria (Article 24). NEMC has also issued Review and Monitoring Guidelines. The Council reviews an EIS in accordance with the following broad criteria areas: 1) description of the development and local economic baseline conditions; 2) identification and evaluation of key impacts (including residual and cumulative impacts) and their magnitude and significance; 3) alternatives, mitigating factors, environmental management plans, and commitment; and 4) stakeholders' participation and communication of results (including the non-technical summary).

In Mozambique, the Technical Assessment Commission uses the EPDA and ToR to review the EPDA report, EIR, and SER, respectively. The MCEA designates the Technical Assessment Commission. The same Commission that assesses the EPDA will review the EIR. The Provincial Directorate for the Environmental Coordination Affairs will nominate the Commission to review the SER. The EIA legislation includes provisions on the constitution of the Commission, which always comprises an uneven number of members.

In South Africa, several steps in the EIA procedure require reviews (Plan of Study for Scoping, Scoping Report, Plan of Study for EIA, EIR). The competent authority is responsible for review of the Plan of Study for Scoping and also the Plan of Study for EIA. In other cases, reviews may be carried out by the competent authority and specialists.

In Angola, there is no EIA review criteria established under legislation. However, technicians from the Ministry of the Environment/National Directorate for Prevention and Assessment of Environmental Impacts and/or external experts have carried out EIA reviews.

Public participation

Public consultation must be a two-way process, whereby information about the proposal is disseminated, and useful local information and opinions received. The consultation process should record the community's fears, interests and aspirations in order for these to be addressed in the EIA study. All the EIA systems reviewed here require public participation before or during the review stage. However, only in Tanzania, South Africa and Mozambique is public consultation mandatory during the scoping process. The proponent, in Tanzania and in Mozambique or the EAP in South Africa, must establish a list of interest-

ed and affected parties and develop methods for notifying them about the proposal.

EMPs, mitigation and monitoring of impacts

In addition to predictions about the environmental impacts of a project, an EIA report generally includes proposals and recommendations for their mitigation and management. An EMP, which is generally prepared as part of the EIR, includes mitigation and monitoring measures to be undertaken by the proponent. All five African jurisdictions require that an EMP to be drawn up.

In Kenya and Tanzania, the EIA study report and Environmental Impact Statement, respectively, must incorporate an EMP proposing measures to eliminate, minimize, or mitigate adverse environmental impacts, including the respective cost, time frame, and responsibility for implementing the recommended measures. In Mozambique, the EIR and SER must incorporate an EMP, including monitoring of impacts, an environmental education programme, and contingency plans for accidents. In Angola, Decree no. 51/2004 [20] requires that a supervision and monitoring programme of the positive and negative impacts be drawn up.

In South Africa, the EMP must include:

1) details, including relevant qualifications, of the person who drew up the EMP;

2) proposed environmental management or mitigation measures identified in the EIA report, including those in respect of planning and design, pre-construction and construction activities, operation or undertaking of the activity and rehabilitation;

3) a detailed description of the aspects of the activity covered by the draft EMP;

4) identification of whom will be responsible for implementation of the measures;

5) where appropriate, deadlines for implementation of the measures; and

6) proposed mechanisms for monitoring compliance with the Environmental Management System and reporting thereof.

All the EIA systems reviewed here include a general requirement for mitigating impacts and for impact monitoring. Additionally, under the EU EIA Directive, monitoring should determine the accuracy of the original predictions, possible reasons for any deviations, the degree of deviation from predictions, and the extent to which mitigation measures have achieved their objectives.

4.2. Foundation Measure of Performance

Table 2 summarizes the performance of the six EIA systems against foundation evaluation criteria. Three foundation performance criteria are particularly noteworthy for this review: the existence of EIA guidelines, monitoring, and training.

The use of EIA guidelines is widely advocated and many international examples exist. Of the five African systems reviewed here, only the Angolan lacks developed guidelines. In Kenya, the general and specific EIA guidelines are set out

in the Third Schedule of the Environmental (Impact Assessment and Audit) Regulations of 2003. In Mozambique, the MCEA has issued general guidelines for drawing up environmental impact studies and public participation. Tanzanian EIA legislation includes several guidelines. In addition to a General Checklist of Environmental Characteristics, NEMC has issued guidelines on general environmental impact assessment and procedure; screening and scoping; report writing and requirements; and review and monitoring.

In South Africa, six national guidelines (Overview of Integrated Environmental Management, Criteria for Determining Alternatives in EIA, Cumulative Effects Assessment, Environmental Impact Reporting, Environmental Management Plan, Review in EIA), as well as provincial guidelines and manuals, establish parameters for EIA. In the EU, there are guidelines on EIS review, scoping and screening, as well as checklists for the scoping and screening processes.

Only in Angola and South Africa the monitoring of EIA system is not required in legislation. Nonetheless, such monitoring exist in the South Africa case, feedback from previous experience (around nine years) was taken into consideration when drawing up the new EIA regulation.

In Tanzania, Kenya and Mozambique although monitoring of EIA is a legal provision, there is no effectiveness of that procedure.

Expertise in universities, research institutes and private consultancy firms in EIA is widespread in the countries reviewed here. The training of EIA project managers, technical specialists and others involved in the EIA process is critical for improving the effectiveness of EIA and enhancing standard practices, even in mature EIA systems. NEMC, NEMA, MCEA, and the National Directorate for Prevention and Assessment of Environmental Impacts (Angola) have indicated that only a small number of training programmes are provided. There is a general consensus on the need for more training programmes to improve capacity in EIA practice and standards in these African countries.

5. Discussion, Conclusion and Recommendations

The evaluation of the performance of the EIA systems discussed above and presented in Table 1 and Table 2 indicates that no one system is superior to the others in terms of overall performance. The five African countries considered here are at a similar stage of development in their EIA systems. Although Angola, as a consequence of civil war, lacks practical experience, its framework is nevertheless similar to the others.

Several general conclusions can be drawn from this review, although the study suffered from some constrains and limitations: 1) difficulties assessing original EIA studies and their formal evaluation; 2) difficulties assessing some higher levels of the EIA administration; 3) constant changes in the institutional framework, particularly at the government level and the ministry responsible for the

[4]Actually, during the three moments of assessment of the institutional and legal framework, we can consider generally a "Ministry responsible for the Environment". The agencies responsible for EIA did not suffer significant changes nor did EIA systems.

environment[4].

These five African countries and the EU share a common EIA framework: screening, EIA study preparation, EIS preparation/review, public consultation, and monitoring. They all have formal provisions for EIA and specific legislation concerning its practice. These EIA laws and regulations define the administrative arrangements and roles of competent authorities in the EIA process. Each jurisdiction has identified a competent authority for overseeing the EIA process. In all countries, the EIA is initiated by the proponent. The EIA is carried out by registered experts in Kenya, Tanzania, Mozambique, and Angola (however, registration requirements are different in each country). In South Africa, the EIA study is conducted by a pre-qualified Environmental Assessment Practitioner, registered in accordance with specific procedures. The EU EIA Directive does not require that an EIA study be carried out by registered experts.

Informal methods of coordination between competent authorities responsible for managing the EIA process and other entities responsible for pollution control or planning exist in Kenya, Mozambique, Tanzania, South Africa, and Angola. In the case of the EU, this varies from country to country. However, in some cases, mandates and the relationships between several institutions are unclear. To improve the effectiveness of EIA, it is necessary to clarify the institutional framework and their roles and responsibilities in the EIA process.

Despite the robustness of these EIA regimes, there are measures that would enhance the effectiveness of the EIA framework and practice. For example, in Kenya, legal provisions for submitting the scoping report for public consultation would enhance integration of community concerns and interests in the EIA final study. This is also an issue in Angola where new EIA legislation is being prepared. According to information received by the authors, public consultation during the scoping phase will be a formal requirement. In general, enhanced public consultation in these EIA systems faces several challenges, including, financial issues; education; cultural, gender, and political differences; and the decision-making culture. Similarly, public access to EIA reports and documentation is critical to ensuring objectivity during the review process. This information is not generally accessible to the public in these countries. South Africa and Tanzania are, however, taking the first steps to making this information available to the public. A further component that requires these governments' attention is EIA system monitoring. Financial issues, insufficient qualified personnel, and an increasing number of EIA applications undermine the capacity of competent authorities to adequately monitor these EIA systems.

It is clear that the procedures in the five African countries are complex and may, in fact, be more difficult to implement than those in the EU. For example, the EIA study report in Kenya and Tanzania must include measures to prevent health hazards, ensure employee safety in the work environment, and for emergency management. Training of EIA project managers, technical specialists and others involved in the EIA process is thus an essential element of these African countries EIA systems. Enhancing capacity in EIA will ensure these EIA systems

to operate effectively and improve standard practices by incorporating experience and lessons learned.

Considering these findings, main recommendations to improve the EIA systems would be mainly to: 1) clarify and simplify the mandates of the several institutions involved in EIA process and system; 2) reinforce the capacity building action regarding the qualification of personnel involved in EIA systems; 3) improve and enlarge public access to EIA reports, including electronic means, also as a facilitator of the process of public consultation—this would constitute a balance facing the tendency to "political approval.

EIA is both a planning and a decision-making tool and helps ensure that development projects do not have costly impacts on the environment and communities. However, EIAs can have little impact on decision making if the process is primarily focused on outputs. In general, an EIA acts as a mitigation exercise because the option of halting projects is rarely considered. This is especially the case when projects are considered to have national, political, or strategic importance. In these African countries, economic development and its accompanying activities and projects make this a particularly urgent issue to consider. As Katima (2003) [22] noted, an effective and sustainable EIA regime is dependent, amongst other factors, on political will.

The African countries reviewed here have adopted EIA and integrated EIA systems into public policy despite the constraints they face. They have put in place significant EIA legal frameworks and procedures. As they continue to gain experience in EIA and to revise their EIA systems, they are moving towards a more flexible system with greater public involvement and robust arrangements and practices. It can be expected that ultimately EIA will help these countries meet their development priorities and socio-economic needs.

Disclosure Statement

The authors do not have any disclosure statement to proceed. All the authors have approved the final article.

Fundings

This study was carried out under the EU Project "PUMPSEA: Periurban mangrove forests as filters and potential phytoremediators of domestic sewages in East Africa", EU Contract no. 510863, funded by the Sixth Framework Programme of the European Commission. European Commission was not involved in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the paper for publication.

The publication was supported by the Portuguese Fundação para a Ciência e Tecnologia (FCT) through the UID/MAR/04292/2013.

References

[1] Economic Commission for Africa (ECA) (2005) Review of the Application of Environmental Impact Assessment in Selected Africa Countries. Addis Ababa, Ethiopia.

[2] Directive 85/337/EEC on the Assessment of the Effects of Certain Public and Private Projects on the Environment. O.J. No 175 L, 14/03/97, p. 40.

[3] Directive 97/11/EC Amending Directive 85/337/EEC on the Assessment of the Effects of Certain Public and Private Projects on the Environment. O.J. No 73 L, 14/03/97, p. 5.

[4] UNEP (2004) Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach.

[5] Balsam, A. and Wood, C. (2002) A Comparative Evaluation of the EIA Systems in Egypt, Turkey and Tunisia. *Environmental Impact Assessment Review*, **22**, 213-234. https://doi.org/10.1016/S0195-9255(02)00004-5

[6] Wood, C. (2003) Environmental Impact Assessment: A Comparative Review. 2nd Edition, Longman, Harlow.

[7] Leu, W.S., Williams, W.P. and Bark, A.W. (1997) Evaluation of Environmental Impact Assessment in Three Southeast Asian Nations. *Project Appraisal*, **12**, 89-100. https://doi.org/10.1080/02688867.1997.9727045

[8] The Environmental Management and Co-Ordination Act, Kenya, 1999.

[9] The Environmental (Impact Assessment and Audit) Regulations, Kenya, 2002.

[10] Institute of Resource Assessment (IRA) (1998) The Performance of EIA in Tanzania: An Assessment. IRA Research Paper no. 41, University of Dar es Salaam, Tanzania.

[11] The Environmental Management Act (2004) Gazette of the United Republic of Tanzania, No. 6, Vol. 86, Dated 11 February 2005.

[12] The Environmental (Registration of Environmental Experts) Regulations, 2005. Government Notice No. 348 Published on 4 November 2005, United Republic of Tanzania.

[13] Decreto-Lei No. 5/98, Diário da República, I Série, No. 27, Angola, 1998.

[14] Decreto-Lei No. 45/2004, Boletim da República, I Série, Número 39, Mozambique, 2004.

[15] Decreto-Lei No. 42/2008, Boletim da Republica, I Série, Mozambique, 2008.

[16] Duthie, A. (2001) A Review of Provincial Environmental Impact Assessment Administrative Capacity in South Africa. *Impact Assessment and Project Appraisal*, **19**, 215-222. https://doi.org/10.3152/147154601781767032

[17] DEAT. Overview of Integrated Environmental Management, Integrated Environmental Management, Information Series 0, Department of Environmental Affairs and Tourism (DEAT), Pretoria, 2004e.

[18] DEAT. National Environmental Management Act No. 107 of 1998; 1998c.

[19] DEAT. Review in Environmental Impact Assessment, Integrated Environmental Management, Information Series 13, Department of Environmental Affairs and Tourism (DEAT), Pretoria, 2004f.

[20] Decreto-Lei No. 51/04, Diário da República, I Série, No. 59, Angola, 2004.

[21] Decreto-Lei No. 59/07, Diário da República, I Série, No. 84, Angola, 2007.

[22] Katima, J. (2003) Environmental Impact Assessment: For Whose Needs? In UNEP EIA Training Resource Manual: Case Studies from Developing Countries.