

**THE UNITED REPUBLIC OF TANZANIA**



**VICE PRESIDENT'S OFFICE**

**DRAFT**

**ENVIRONMENTAL IMPACT ASSESSMENT**

**Guidelines and Procedure**

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**LIST OF ABBREVIATIONS**

ADB	African Development Bank
DANIDA	Danish International Development Agency
DR	Decommissioning Report
EAR	Environmental Audit Report
EIA	Environmental Impact Assessment
EIC	Environmental Information Centre
EP	Environmental Permit
EPA	Environmental Protection Agency
EDM	Environmental Decision Making
ER	Environmental Report
ERP	Economic Reform Programmes
ESA	Environmentally Sensitive Areas
ESAP	Economic and Social Adjustment Programme
EU	Environmental Unit
IPC	Investment Promotion Centre
IPM	Integrated Pest Management
NA	Not Applicable
NCSSD	National Conservation Strategy for Sustainable Development
NEAP	National Environmental Action Plan
NEMC	National Environment Management Council
NEP	National Environmental Policy
NORAD	Norwegian Development Agency
ODA	Overseas Development Administration
PA	Preliminary Assessment
PEP	Provisional Environmental Permit
PER	Preliminary Environmental Report
SAP	Structural Adjustment Programme
Sida	Swedish International Development Agency
SR	Screening Report

TOR	Terms of Reference
TRC	Technical Review Committee
UNEP	United Nations Environment Programme

## DEFINITIONS

### **Environment**

In the context of this document, “Environment” is understood as the whole set of natural or biophysical and man-made or socio-cultural systems in which man and other organisms live, work and interact.

### **Environmental Impact Assessment (EIA)**

This is a process for orderly and systematic valuation of a proposal including its alternatives and objectives and its effect on the environment including the mitigation and management of those effects. The process extends from the initial concept of the proposal through implementation to completion and, where appropriate, decommissioning.

### **Environmental Impact Statement (EIS)**

This is a report or document prepared by the proponent after the conduction of EIA study to present the case for the assessment of their proposal as part of the environmental impact assessment process.

### **EIS Review Report**

This is a document prepared by the assessing authority to review the contents of an EIS to provide environmental advice on the proposal to decision-makers to facilitate decision-making.

### **Environmental Significance**

In the EIA context Environmental significance is a judgment on the importance and consequence of anticipated change imposed on the environment by a proposal.

### **Monitoring**

Monitoring is a term used in EIA to describe both the checking of the predicted impacts of proposal in order to improve environmental management practices, check the efficiency and effectiveness of the EIA process, and the reporting of the results.

### **Audit**

Audit is a term used in EIA principally to describe or to check for compliance with conditions of environmental approval, but also as an internal review of environmental management practices by proponents. Additionally, it is a form of site evaluation for environmental liability before purchase or development of a property.

**Public**

The public includes any individual or group of individuals. Stakeholder (Affected or Interested Parties) and interest groups. These are people who are impacted by the proposed development or undertaking either directly or indirectly. Interest group may include local and/or international environmental organisations, professional societies, labour unions local associations, individual persons, etc.

**Undertaking or Development**

An undertaking or development is any enterprise, activity, project, structure, building, work, policy, proposal, investment, legislation, plan or programme whose implementation may have a significant environmental impact. Also such others as modification, extension, abandonment, demolition or rehabilitation of undertakings and developments fall within this definition.

**Proponent/Developer**

Any private person or group of persons or government department or parastatal who carry out an undertaking or proposes to carry them out, whether they be corporations, companies, agencies, groups, or individuals, are described as proponent/developer. A proponent may be either the person or organisation that owns, manages, controls or finances an undertaking.

**Preliminary Environmental Report (PER)**

A Preliminary Environmental Report is a document that provides detailed information that is contained in the Registration Form, especially concerning the effects that the undertaking would have on the environment as defined in the screening report.



## PREFACE

Economic development of any nation crucially relies on the exploitation of both her renewable and non-renewable natural resources. In other words, natural resources are a resource base on which the government as a state and her people rely for their survival and prosperity. Thus the sustainability of the economic and social development depends ultimately on proper and responsible management of the natural resource base and the environment in general.

For many years, economic development activities in Tanzania have not shown sufficient concerns for integrating environmental considerations. The need to accelerate economic development and alleviate poverty as exemplified by various programmes such as the implementation of Economic Reform programmes (ERP I & II), Economic and Social structural Adjustment Programmes (ESAP), and Structural Adjustment Programmes (SAPs) have emphasized the maximization of profit and economic welfare but did not take adequate account of the environmental concerns. This has resulted in a range of environmental problems as identified in the national Environmental Policy, namely: land degradation, inadequate supply of clean water for urban and rural areas, environmental pollution, loss of wildlife and biodiversity, destruction of marine ecosystems and destruction of forests.

Tanzania is inspired by a remarkable and refreshing interest in environmental issue in the World, with a major impetus provided by the 1987 report on the World Commission on the Environment and development (the Brandt report) and accelerated the Rio Summit in 1992. All this time and there after, much of the discussion on environment issues and on sustainable development is about the better management of the current activities in harmony with the environment. There always be pressure for new development, however, the challenge is how much better it would be to avoid or mitigate the potential harmful effects of future development on the environment at the project design stage of activities.

A number of important reforms and measures have been initiated in recent years in Tanzania, in order to comprehensively combat poverty and ensure sustainable development. These include the vision 2025, National Poverty Eradication Strategy (NPES), Tanzania Assistance Strategy (TAS), Poverty Reduction Strategy Paper (PRSP), review of sectoral policies, formulation of policy tools and implementation of environmental programmes and projects.

Paramount to these interventions is the institutionalization of Environmental Impact Assessment (EIA) in the project planning and implementation in order to ensure that the likely effects of new developments are fully understood taken into account before the development is allowed to go ahead.

The Government has come up with guidelines, which are intended primarily for various stakeholders. The guidelines explain how requirements for EIA of major projects

should be incorporated into project approval process in Tanzania. The guidelines will be interpreted into regulations and will be part and parcel to the Environmental Law for Environmental Management in the country. These requirements have been compiled in form of this guide-book arranged as follows;

**Part I** explains the procedures which apply to projects which fall within the scope of schedule I projects (projects requiring EIA), and schedule 2 projects (projects which may or may not require EIA). It also provides details for obligations and responsibilities in the EIA process.

**Part II** accounts for various stages necessary in the EIA procedure and gives detailed guidelines for these stages. These are: Registration guidelines, Screening guidelines, Scoping guidelines, EIA report writing guidelines and requirements, Review guidelines and Monitoring guidelines.

**Part III** contains annexure pre-requisite for the EIA process and procedures.

Throughout this guide-book, **Environmental impact Assessment (EIA)** refers to the whole process where-by information about the Environment effects of a project is collected, assessed and taken into account in reaching a decision on the whether the project should go ahead or not.

**A. D. Ntagazwa**  
**Minister of State, Environment**

## **ACKNOWLEDGEMENTS**

Production of this guide-book would not have been possible without full participation of sector ministries, Government departments, local government, the private sector Non-Governmental Organizations, various institutions and the civil society at large.

Their full participation in one way or the other in the establishment of baseline data, private consultations, national and zonal consultative workshops, and formal and informal discussions and finally in building a national consensus in coming up with a final version of this guide-book is highly appreciated.

Wide-ranging general information of a complex subject of environmental impact assessment for Environmental management must inevitably draw from special works of others who are experts and experienced in the field. In putting up this guide-book, references were made to other similar EIA guidelines especially from international institutions and from other countries and EIA literature in order to draw information relevant to Tanzania. Special recognition is due to the World Bank, European Union and several countries whose work could be accessed for reference.

R. O. S. Mollel  
**Senior Permanent Secretary**

## Part one:

### 1.0 ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS IN TANZANIA

#### 1.1 What is Environmental Impact Assessment?

Definition of Environmental Impact Assessment abounds, ranging from:

- (i) ***A broad definition***; which refers to; The need to identify and predict the impact on the Environment and on man's health and well-being by legislative proposal, policies, programmes, projects and operational procedures, and to interpret and communicate information about their mitigation;
- (ii) ***Operational definition***; Which describes; A technique and process by which information about the environmental effects of a project is collected, both by the proponent and from other sources, and taken into account by the approving authority in forming their judgment on whether or not the development should go ahead;
- (iii) ***Definition describing***: EIA "as" A systematic process that examine the environmental consequences of development action, in advance.

**EAI therefore emphasizes on a systematic analysis, using the best practicable techniques and best available sources of information; and on the presentation of information in a form which provides a focus for public scrutiny of the project and enables the importance of the predicted effects, and the scope of modifying or mitigating them, to be properly evaluated by the approving authority before a decision is given.**

#### 1.2 Purpose of EIA:

A properly carried out EIA will help **all** those involved in the approving process. ***It is an aid to:***

- (i) ***Decision making***;  
For the **decision makers**, an environmental Impact Assessment provides the basis for better decision-making, to the extent that the implications of a new project is more thoroughly, analyzed, and more comprehensive information is provided with the application, swifter decisions may be possible. While the responsibility for compiling the environmental statement rests with the developer (proponent) he/she is expected to consult those with relevant information. The Environmental Impact Assessment will be considered by the decision maker, along with other

documentation related to the planned activities. Although EIA is normally wider in scope and less quantitative than the other techniques, such as cost-benefit analysis, it is not a substitute for decision-making, but it does help to clarify some of the trade-off associated with a proposed development action, which should lead to more rational and structured decision-making. **It can therefore be taken up to be a basis for negotiation between the developer, public, interest groups and the approving authority**, and leads to an outcome that balances the interests of the development action and the environment.

(ii) *The formulation of development actions;*

From the **developer's point of view**, the preparation of an environmental statement in parallel with project design provides a useful framework within which environmental considerations and design development can interact. It is thus an aid to the formulation of development actions, indicating areas where the project can be modified to minimize or eliminate altogether the likely adverse impact on the environment.

The consideration of environment impacts early in the planning life of a development, will not only lead to an environmentally sensitive development, but also improved relations between the developer, the approving authority and the local communities; as well as to smoother approval process.

**In other words, EIA can therefore be a signal to the developer of a potential conflict, and the process may wisely be used to negotiate "green gain" solutions that may eliminate or offset negative environmental impacts, reduce local opposition and avoid costly public inquiries.**

(iii) *Information articulation;*

The **general public's** interest, in a major project is often expressed as concern about the possibility of unknown or unforeseen effects. By providing a full analysis of a project's effects, **an Environmental Impact Statement can help to allay fears created by lack of information.** At the same time, **it can help to inform the public on substantive issues which** the approving authorities will have to consider in reaching a decision, and

(iv) *An instrument for sustainable development:*

A central role is for EIA to be one of the instruments to be used to achieve sustainable development, **"development that does not cost the earth"**. Existing environmentally harmful development have to be managed as best as they can. In extreme cases they may be closed down, but they can still leave residual environmental problems for decades to come. Environmental Impact Assessment **shows how much better it would be to mitigate the harmful effects in advance, at the planning stage, or in some cases avoid the particular development altogether.**

**Prevention is better than cure. EIA is a "precautionary principle" that preventive action should be taken, that environmental damage should be ratified at source, and that the polluter should pay. EIA is a positive process that seeks a harmonious relationship between development and the environment.**

### **1.3 When is EIA needed**

EIA is to be undertaken for a project or an undertaking that may have an impact on the environment is likely to have a significant impact on the environment and that will have a significant impact on the environment.

- (i) EIA is mandatory for projects proposed to be developed within or in proximity to environmentally sensitive/critical areas (ESA), which are areas that are known from experience to be fragile or valuable environment that can be easily harmed or destroyed by effects of the intended development.
- (ii) EIA is also mandatory for Appendix 1 projects. Definitions of appendix I projects incorporate an indication of scale, in a form of quantified threshold, which clearly identifies the projects requiring EIA.
- (ii) For projects in appendix 2, a preliminary EIA is to be carried out to determine whether a full EIA is needed or not. EIA is required if the particular project in question is judged likely to give rise to significant environmental effects after that preliminary assessment.

### **1.4 Determination of the significance of impacts to be assessed**

There can be no general definition of what constitutes significance in this context. However, three criteria of significance can be adopted.

- (i) Whether the project is of more than local importance, principally, in terms of physical scale,
- (ii) Whether the project is intended to be located in a particularly sensitive site, such as national parks, or a site of special scientific or Biodiversity interest (hot-spots), and for that reason may have significant effects, on the area's environment even though the project is not on a major scale;
- (iii) Whether the project is thought likely to give rise to particularly complex or adverse effects, for example in terms of the discharge of pollutants.
- (iv) Whether it is a climate change related project such as CDM.

It is obvious that non-of these guidelines can be applied as hard and fast rules. Circumstances are bound to vary greatly from case to case. Some large scale projects may not be significant enough to require EIA. While some smaller projects, particularly in sensitive locations, may be candidates for EIA. Nevertheless, the guideline should provide a starting point for consideration by the developer, NEMC, Sector Ministries, Regional and District authorities, practitioners and the general public of the need for EIA.

## **1.5 Obtaining a ruling on the need for EIA**

A developer can decide for himself that his project falls within the scope of these guidelines so that an environmental statement is needed. These guidelines also provide a procedure which enables a developer to apply for an opinion on whether EIA is needed in a particular case as soon as the necessary information about the project, including the project brief is provided. This must include a plan on which the site of the proposed development is identified, and a brief description of its nature and purpose and of its possible effects on the environment. The developer can of course supplement this with other necessary information.

Where such information can be provided, the developer may approach NEMC and or District Environmental Offices for an opinion on the need for EIA. Where such an approach is made, NEMC and or the District Environmental Offices will give their opinion within 30 days. NEMC may request further information from the developer. This in itself does not extend the 30-days time limit.

Once NEMC and District Environmental Offices express the opinion that a particular proposal requires EIA, they must provide a written statement giving clear and precise reasons for their opinion. Both that statement and the developer's application for an opinion shall be made available for the public inspection at NEMC and District Environmental Offices (DEO) where it is registered and at the local authority where the project is located. A developer, who is dissatisfied with NEMC's opinion, that EIA is required, may refer the matter to the Minister responsible for Environment. The Minister responsible for Environment will give his direction within 21 days of the developer's application and if his direction is to the effect that EIA is required a statement of reasons will accompany it. If the Developer is dissatisfied he may still go to the Environmental Tribunal as stipulated in the Environmental Management Act.

## **1.6 Carrying out and Environmental Impact Assessment**

### **1.6.1 Identifying key issues of Concern (Scoping)**

Where the Minister responsible for Environment or NEMC rule that the EIA is required, those bodies which are to be consulted for the particular project in question will be notified and the developer will be informed accordingly. The effect of this notification is to put those bodies under an obligation to provide the developer (on request) with information in their possession, which is likely to be relevant to the preparation of the environmental impact statement.

It is however up to the developer to approach the relevant authorities to be consulted (see appendix 8) and indicate what sort of information would be helpful to him/her in preparing the environmental impact statement. The obligation of the statutory consultees relates only to information already in their possession: they are not required to undertake research on behalf of the

developer. Nor at this stage would the relevant authorities be expected to express a view about the merits of the proposal. Their views on merits are invited at the later stage during public reviewing of the project proposals or during evaluation if nominated to be among a review team of experts.

Developers should also consider consulting other bodies concerned with environmental issues, the general public, local communities and environmental groups, during preparation of the environmental impact statement, for such bodies may have particular knowledge and expertise to offer. May be useful in identifying key environmental issues and may put the developer in a better position to modify the project in ways which would mitigate adverse effects and recognize local environmental concerns. This will normally give the developer an early indication of the issues, which are likely to be important issues if the proposal goes for public hearing.

One of the vital steps of the process of the statement is on the need for full and early consultation by the developer with bodies, which have interest in the likely environmental effects of the development proposal. If important issues are not considered at a very early stage, they may well emerge when project's design is well advanced and necessitate re-thinking and delay. EIA should thus ideally start at the stage of site selection, so that the environmental merits of practicable alternatives can be properly considered.

The developer is obliged to consult the authorities shown in appendix 8 for obtaining useful local and specialized information relevant to project design.

### **1.6.2 Preparing Terms of Reference**

Following the identification of key environmental issues of concern and how various stakeholders will be involved, the Proponent prepares the TOR on the EIA study. See Section 2.3.4 for details.

### **1.6.3 Conducting Environmental Impact Assessment study**

Following the approval of the TOR the Proponent undertakes environmental assessment study as detailed in Section 2.3

### **1.6.4 Preparing Environmental Impact Statement**

The developer (may choose to engage consultants for some or all of the work) is responsible for preparing the Environmental Impact Statement. Main items in the Environment Impact Statement are: Baseline Survey and inventory, proposal options, potential impact identification and prediction, mitigation consideration and commitments, environmental management plans and other issues specified in the TOR. See Section 2.4.2 for details.

### **1.6.5 Techniques of Impact Assessment**

The assessment techniques used and the degree of detail in which any particular subject is treated in an environmental impact statement, will depend on the



character of the proposal, the environment which it is likely to affect and the information available. While careful environmental study of the proposed location will be necessary; the Director of Environment, NEMC, District authorities where the project is located as well as other relevant stakeholders may be able to advise the developer on sources of specialized information.

Environmental statements will often need to recognize that there is some uncertainty attached to the prediction of environmental effects. Where there is uncertainty, it needs to be explicitly recognized, without undermining the importance of particular environmental effects.

### **1.7 Determining the adequacy of EIS**

The completed environmental statement will be submitted to NEMC, and in the case of districts to the District Environmental Coordinator, who will judge the quality of information received. Where the statement does not provide enough information, NEMC and or the District Environmental Coordinator will still need to have sufficient information on the projects likely effects to enable them to give appropriate advice

After submitting the statements to NEMC and or the District Environmental Coordinator the developer is required to publish a notice in the local newspaper and to post notices on the site indicating where and when the environmental impact statement may be inspected. The statement should be available for inspection at reasonable hours, at the locality of the project.

The developer is required to provide NEMC with sufficient copies of the environmental statement to enable proper distribution to the relevant sectors, stakeholders and places of project location for public reviewing.

Where the NEMC considers that they do not have the necessary expertise to evaluate the information contained in the environmental impact statement, they may decide to co-opt experts to advise them, or nominate qualified persons to form a team of experts for the evaluation process. In the course of the review process, a physical visit for site verification is necessary. When NEMC considers that the information provided in the developers environmental impact statement together with that available from other sources is not sufficient to permit a proper evaluation of the project's likely environmental effects, they have the power to require the provision of further information, or of evidence to verify the information that has already been provided. In this case, further consultation between the NEMC and the *developer* may be necessary; in

particular to consider comments made by the team of experts, and possible amendments to the project proposal to satisfy the objections that have been raised.

### **1.8 Approval of the EIS**

Upon completion of the review, the Council may recommend to the Minister to approve or disapproval the EIS. The Minister may, within thirty days, approve or disapproval the EIS subject to any condition as He or She may deem necessary.

### **1.9 Record of decision**

Whether or not a proposal is approved, there should be a record of decisions.

Where appropriate an explanation for how environmental considerations were taken into account and weighed against other considerations must be documented. This record of decisions should be made available to NEMC and upon request to any interested party. Any conditions of approval must be reflected in the record of decision. NEMC shall maintain records of decisions on approvals or disapprovals of EIS.

### **1.10 Appeals**

The developer or any third party including the public have the right of appeal to the Minister responsible for Environment, Environmental Appeals Tribunal or High court in against any decision or failure in the EIA process (See 2.5).

### **1.11 Project Implementation**

Upon receiving a provisional environmental permit with approved terms and conditions, the developer may apply for an operational license or any other relevant permit from the Authorizing Agency. This is the project approval stage for implementation of undertaking.

### **1.12 Monitoring**

As an outcome of the EIA process, the environmental management plan including an appropriate monitoring programme is prepared. This programme forms the basis for overall monitoring of the project (See 2.6).

### **1.13 Environmental Auditing**

During the project execution, Environmental auditing shall be undertaken for periodic re-assessment of the overall project implementation (See 2.6.5).

### **1.14 Decommissioning**

There shall be a decommissioning plan for rehabilitation or restoration of the affected environment during the closure of the project (See 2.6.6).

## PART TWO

### 2.0 ENVIRONMENTAL IMPACT ASSESSMENT PROCEDURAL GUIDELINES

Environmental Impact Assessment procedure involves the following stages: Registration, screening, scoping, impact assessment, reviewing, permitting decision, monitoring, auditing and decommissioning. Appendix 9 is the chart showing the procedure of EIA in Tanzania.

#### 2.1 Registration Guidelines:

The proponent is required to register a project proposal or concept with NEMC through special application forms known as “Environmental Impact Assessment Registration Forms”. The forms are available at NEMC offices, Environmental Units of sector ministries, Local Authorities and at Tanzania Investment Centre (TIC).

To ensure that the proponent understands the EIA procedure which needs to be followed, NEMC may advise or supply the proponent with other necessary documentation.

##### 2.1.1 Completing the EIA Registration Form

The Environmental Impact Assessment Registration form is designed to provide enough relevant information to enable NEMC, Environmental Units of sector ministries and Local Authorities to set an appropriate level of assessment for a proposal referred to it. Failure to provide detailed information in a comprehensive manner may delay the assessment process. It is not expected that this form will be appropriate for all purposes and, depending on the nature of the proposal, a detailed document may be necessary in addition to this form.

##### (i) The Proposal

A simple, brief description of the proposal or proposed undertaking is required and must include: Quantities of raw materials required, input processes, end results, output quantities, timing and flow diagrams.

**(ii) Location**

A map/site plan is essential. It should indicate the geographic coordinates of the site elevation and slope, any nearby area of environmental significance such as proposed or declared reserves, water courses, wetlands (etc.) and adjacent land uses, including the nearest homes or areas zoned residential.

**(iii) Services**

Details of water supply, storm water drainage, power corridors, access to and impact on roads and transport can all be of significance and should be noted where relevant.

**(iv) Environmental Impact**

Criteria for assessing a project and setting a level of assessment are:

1. The character of the receiving environment
2. The potential impact of the proposal and confidence of predicting impacts
3. Resilience of the environment to cope with change
4. The technology to be used
5. Plans, policies or procedure which influence land use changes
6. Degree of public interest (i.e. concerns of the general public)
7. Any other relevant factors to the particular undertaking

The following potential environmental impacts may be relevant;

- effects on geomorphology, land stability and landscape
- effects on drainage and water quality (surface and ground)
- effects on biota
- effects on access and transport systems
- effects on existing services including power, water, and communication
- effects on existing community facilities
- effects on existing contingency plans for safety and emergency services
- effects of emissions (gas, dust, light, noise and heat)
- management of solid and liquid wastes and storm water
- impact on adjacent land uses including any conservation and recreation aspects
- impact of construction and operational activities
- visual impact
- social impact
- cultural impact
- economic impact

## **2.2 Screening guidelines**

Screening is the process of classifying a proposal to determine the level at which environmental assessment will be carried out. It is the first stage conducted in the impact assessment process after registration of a project proposal.

Screening is undertaken using information on the registration form and or additional information provided from the submitted proposal. The project proposals might come in different forms. Some might be detailed and well presented while others could be still fairly general or poorly prepared. Detailed designs of development projects are unlikely to be available in all projects at the time of submission but the basic nature of the project together with some basic

facts about the project and site(s) should be presented in the registration form. This is important to help in determining whether a proposed development should be subjected to impact assessment and the level of assessment that will be necessary.

NEMC is responsible for screening projects. Projects of national interest or highly risky and contentious projects with potentially serious and multidimensional environmental concerns shall be screened by the NEMC, while the more localized projects shall be screened at a local authority where the project is situated, under the guidance of the NEMC. No projects shall be screened or sub-sequentially reviewed by sector ministries. The sectors ministries shall have representation in the cross-sector Technical Review Committee.

### **2.2.1 The screening procedure:**

The Screening procedure (Figure 1) shall lead to one of the following decisions:

- Environment Impact Assessment is required where the project is known to have significant adverse environmental impacts.
- Preliminary environmental assessment is required where the project may have environmental impacts.
- Environmental Impact Assessment is not necessary where the project is unlikely to cause significant environmental impacts.
- No further consideration at all for projects contravening government policies or other legal obligations.

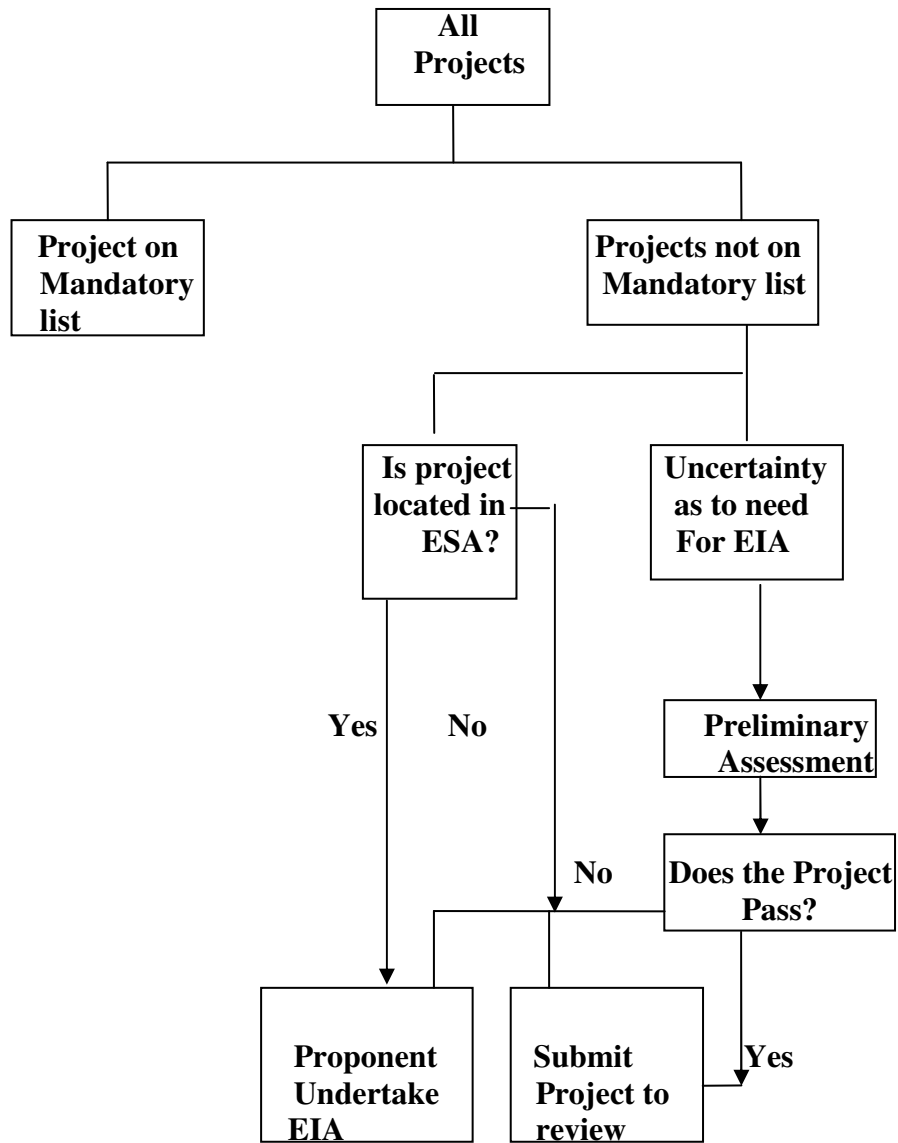


Fig. 1. Screening procedure.

EIA is mandatory for projects that are known from previous experience to have the potential of causing significant impacts on the environment. They are listed in Appendix 1. EIA is also mandatory for projects to be developed within or near Environmentally Sensitive and or Critical Areas (ESA). These are areas that are known from experience to be fragile or valuable environments that can easily be harmed by the effects of the development. A list of ESA is given below.

**Table 1: Environmentally Sensitive Areas ((ESA) and ecosystems:**



## **Areas prone to natural disasters**

(Geological hazards, floods rain storms, Earthquakes, landslides, volcanic activity, etc.).

## **Wetlands**

Water bodies (Flood plains, swamps, lakes, rivers etc.) characterized by one or any combination of the following conditions;

- Tapped for domestic purposes, brick making
- Within the controlled and or protected areas
- Which support wildlife and fishery activities
- Used for irrigation agriculture, livestock grazing

### **3. Mangrove swamps characterized by one or any combination of the following conditions**

- With primary pristine and dense growth
- Adjoining mouth of major river systems
- Near or adjacent to traditional fishing grounds
- Which act as natural buffers against shore erosion strong winds and storm floods

### **4. Areas susceptible to erosion such as**

- Hilly areas with critical slopes
- Unprotected or bare lands

### **5. Areas of importance to threatened cultural groups**

### **6. Areas with rare/endangered/or threatened plants and animals**

### **7. Areas of unique socio-cultural history archaeological, or scientific importance and areas with potential tourist value**

### **8. Polluted area**

### **9. Areas subject to desertification and bush fires**

### **10. Coastal areas and Marine ecosystems**

- Coral reef
- Islands
- Lagoons and estuaries
- Continental shelves
- Beach fronts, etc.
- Inter-tidal zones
- Marine reserves

### **11. Protected Areas**

National parks, Watershed reserves, forest reserves, wildlife reserves and sanctuaries, sacred areas, wildlife corridors, hot - spring areas

12. **Mountainous areas, water catchments areas and recharge areas of aquifers**
13. **Areas classified as prime agricultural lands or range lands**
14. **Green belts or public open spaces in urban areas**
15. **Burial sites and graves**

The above list shall be reviewed periodically.

### **2.2.2 Criteria for Screening Projects not on the Mandatory List:**

The following criteria need to be taken into account while conducting screening to determine whether EIA is required or not.

- Key project parameters
- Affected areas
- Importance and scale of impacts on the environment and the likely degree of public opposition

#### **(i) Key project parameters**

These include project type, size, location and siting of project, resource demand, technical processes waste production, labour requirements, infrastructure needs, regulations, guidelines and code of practice. Using information on issues such as the method of development, the expected effluents or emissions, infrastructure requirements, etc, the potential environment consequences of the proposed type of project will be appraised.

#### **(ii) Affected Area**

This includes the ecological importance, people; use, value, fragility and dynamics of the development. Site and surrounding area will be assessed in order to appraise the potential sensitivity of the area to development actions.

#### **(iii) Importance and scale of potential environmental impacts of the project (negative and positive)**

Levels of environmental assessment will be determined by the project components whereas, project type and location will give a preliminary indication of the impacts that might be expected. Below is an indicative list of the possible impacts.

**Table two**

- **Scale of Impacts**

In so far as it will be possible at this stage, the likely scale of these impacts will be considered to determine their significance. Issues such as area of influence, duration of disturbance, effluent/emission quality, resettlement requirements, etc will be reviewed to give an understanding of the likely magnitude of the potential impacts. A more complete list of issues of scale is provided in Table 3.

- **Importance of Impacts**

Having established the possible scale of impacts, the NEMC shall appraise their importance, by relating them to their potential impacts; human health, ecosystem function, biodiversity, etc. Where possible, this shall be based on published information or previous experience of the impacts under consideration.

In case of inclusion of mitigation measures, a comparison of the impacts with project objectives, activities, outputs and measures shall be made. No EIA will be required for projects with limited impacts, and or which have included appropriate mitigation measures in the project design. However, preliminary assessment will be required for projects that have limited environmental impacts and have not included mitigation measures in the project design. Projects with significant impacts with or without mitigation measures will require a full EIA.

### 2.2.3 Public Opposition

Controversial issues which raise public concern as a result of type and scale of the undertaking, sensitivity of site location, technology used conflict of interest in land uses and any other factor related to a particular project may render the undertaking to detailed scrutiny and assessment.

### 2.2.4 Screening Report

Following screening exercise, screening report will be prepared. The outcome of screening could be one of the following:

- **No EIA required:** The screening report is submitted to **TRC** for review.
- **Full EIA:** Having decided that a particular undertaking be subjected to full EIA, it is then the responsibility of the *proponent* to undertake a scoping exercise in order to determine the full scope of the terms of reference for the EIA (for details see scoping guidelines 2.3).

- **Preliminary Assessment**

This is applied to;

- Projects with limited impacts, which are not included in the project design
- Projects in which the need of EIA is unclear
- Proposals with inadequate information

At this level of assessment, it is decided if the project will be submitted to further investigation of an EIA or if the project can be accomplished depending on specific mitigation measures.

The investigation is undertaken by the proponent to obtain enough information to determine whether or not there will be significant impacts. Preliminary assessment may be based on existing information and may require extra information to be gathered from the field.

A systematic identification, description and assessment of environmental and socio-economic impacts of the project are made along the following steps;

- Description of the project characteristics
- Boundaries of the affected area

- Identification of impacts on local environment socio-economic and cultural impacts
- Evaluation of the significance of impacts
- Consideration of possibilities of modification of the project design (mitigation measures) or the need for a full EIA.

Following the screening procedure a screening report will be prepared and presented to the proponent **within 30 days** from the date of registration. Description for a requirement for a full EIA or not should be reflected in a screening report.

Screening can therefore be seen to be a logical and balanced review of all the factors that influence the need to or not to undertake a detailed EIA. The ultimate decision of possible impacts is critical as it takes into account the uncertainty in relation to the nature, scale or importance of the impacts. Whilst consideration of the four criteria mentioned above will be balanced, any one of them could have an overriding influence on the decision to undertake an EIA. For instance, an area of outstanding ecological importance, which does not have formal protected status.

At screening stage, there will be a possibility of taking into consideration the possible cumulative effects of several relatively small projects in close proximity and or which may have synergistic effects.

### **Potential Environmental Impacts**

The potential adverse impacts of concern during the screening process are as follows:

- **Socio-economic impacts**

Falling living standards, particularly of the poor, could risk the start of a vicious circle that could produce further environmental degradation. Living and working conditions may deteriorate as a result of such processes as resettlement, cultural shock, risk to health and safety, the intrusion on sight, sound and smell, etc.

Impacts on men and women may be very different; impacts will also vary between social groups, especially where rights to land and other natural resources are differentiated. In-migration related to project development could cause important social changes.

- **Degradation of land and aquatic environments**

Major changes in land-use, deforestation, watershed degradation, loss of biodiversity, soil erosion, dry land degradation and overgrazing, salinization, water logging and land-based pollution are all impacts of concern.

- **Water Pollution**

Pollution of water courses, aquifers, water bodies and coasts can result from uncontrolled wastewater/sewage discharge from human settlements, industrial effluent, agricultural chemicals, etc.

- **Air pollution**

Pollution of the air may be caused by urban traffic, pollutants may be odour, smell, dust, sulphurdioxide, oxides of nitrogen, ammonia or even storage of volatile liquids, routine industrial emission, upset industrial conditions, etc.

- **Noise and or vibration**

Noise and vibration will be caused by any rotating or reciprocating machinery, but will also be associated with blasting, excavating equipment, road traffic, entertainment, etc.

- **Light intensity**

Light intensity such as excessive emission of light rays

- **Damage to wildlife and habitats**

Impacts that affect biodiversity, ecosystems, rare or endangered species or flora and or fauna having economic or scientific importance.

- **Alterations to ecological processes**

These include Energy transfer bio-accumulation, etc.

- **Effects on cultural, religious, historic, archaeological and scientific resources** including the effects of in-migrants or tourists

- **Impact on Climate**

Especially the hydrological cycle and micro climate

- **Impacts on human health.**

### **The Scale of Impacts**

The scale of potential impacts and their importance are issues which will be addressed within the EIA study. However, at the screening stage in the EIA process, some estimate of the scale of likely impacts should be made in order to be able to make an informed Environmental Permitting Decision (EPD). The main issues to be considered are indicated on Table 1.



**Table 1: The Scale of Impacts**

◆ Whether the environmental effects are adverse or beneficial?
◆ The extent of the impact, in terms of area affected (off - site and on - site ) numbers of people or animals, etc.
◆ The expected intensity of the impact.
◆ The likelihood of any indirect impacts such as downstream and upstream impacts, due to consequent economic development, etc.
◆ The duration of the impact including delayed effects.
◆ The potential for cumulative effects.
◆ The likely reversibility of effects.
◆ The level of confidence involved in forecasting the effects.
◆ The political or cultural sensitivity of the effects.
◆ Possible infringement of any Laws, Conventions, Treaties, Protocols, Regulations, or Directives.
◆ Quantification, if any, of the main economic, ecological and social costs
◆ Investments, policy changes or management initiatives which could reduce environmental damage
◆ Whether the project will affect particular gender or social groups.
◆ The likely international impact of the project e.g. waterborne/airborne impacts with distant effects.

Having decided that a particular undertaking should be subject to a full EIA, it is then the responsibility of the proponent to undertake a scoping exercise in order to determine the full scope or terms of Reference for the EIA.

## 2.3 IMPACT ASSESSMENT (SCOPING) GUIDELINES

Scoping is defined as a consultative procedure that culminates in the determination of the extent and approach to an Impact Assessment study. It is a procedure, which follows once the screening report, indicates that the undertaking will result in significant adverse impacts and will thus require an Impact Assessment to be undertaken. It is an early and open process for determining the scope of issues related to the proposed action.

### 2.3.1 Objectives of scoping

As communities are comprised of many interest groups with conflicting objectives e.g. men and women because of their different rights and responsibilities, educated young people versus elder traditional people; economic groups etc., the role of the public consultation in EIA should not be to suppress these differing views but to provide a mechanism for identifying and trying to solve the implementation in a constructive way.

Public consultation can be undertaken during;

- The preparation of EIA terms of reference
- The preparation of EIA report
- Review of EIA report
- The preparation of terms and conditions for EIA acceptance or approval

The objectives of scoping are;

(i) To provide an opportunity for the proponent, his or her consultants, the relevant authorities, interested and affected parties in a project area to exchange information and express their views and concerns regarding the proposal before an Impact Assessment are undertaken.

(ii) To focus the study on reasonable alternatives and relevant issues to ensure that the resulting Impact Assessment is useful to the decision-maker and address the concerns of interested and affected parties.

- (iii) To facilitate an efficient assessment process that saves time and resources and reduces costly delays, which could arise where consultation had not taken place.
- (iv) To determine the Terms of Reference (TOR) and boundaries of the EIA study.

### **2.3.2 Responsibility for scoping**

The proponent and his or her consultants will have final responsibility for scoping. The proponent may consult NEMC for advice regarding identification of competent consultancy.

A scoping program prepared by those responsible should indicate the following:

- (i) the authorities and public that are likely to be concerned (i.e. stakeholders)
- (ii) how will the stakeholders be notified
- (iii) what methods will be used to inform them of the proposal and solicit comments
- (iv) at what stage of the assessment process opportunities will be provided for public input.

Public consultation is mandatory when undertaking an EIA. At minimum, the proponent must meet with the principal stakeholders to inform them about the proposed activity and to solicit their views about it. More problematic activities should involve more extensive consultation. The results of these consultations must **be documented in the EIA report.**

### **2.3.3 Tasks involved in scoping**

#### **(i) Background Information on Proposal;**

Information on the nature of proposal (including the purpose and need for the project, proposed actions, location, timing, method of operation of likely impacts etc.), as well as a brief description of the affected environment, is required in order to assist interested and affected parties to comment constructively and form an informed position during the scoping process.

The information should be clear and concise, so that the general public can easily understand it.

#### **(ii) Involvement of Authorities, Interested and Affected Parties;**

The proponents first task is to establish who is the responsible decision making authority or authority with delegated responsibilities. The responsible decision making authority, as well as

other relevant authorities with responsibilities, interests or special expertise relevant to the proposal should be directly contacted, for information and comments.

This form of scoping will enable the proponent to identify policies, legal or administrative constraints that may exist, as well as determining the major concerns of these various authorities whose interests may be affected by the proposal.

**(iii) Methodology for Public Participation;**

The proponent should establish a list of interested and affected parties as well as developing methods of notifying them on the proposal. Consultation with the public should be a two - way process, in which information about the proposal is disseminated, and useful local or information and opinions received. The consultation process should record the fears, interests and aspirations of the community so that these can be addressed in the subsequent EIA study.

Public participation or involvement methodologies may include;

- Public meetings
- Newspaper advertisements, and notices
- Surveys, interviews and questionnaires
- Workshops
- Advisory groups

Whatever methodology of public involvement is selected should be designed to suit the circumstances. It should provide the means of obtaining the views of the interested or affected parties.

- **Public Meetings;**

A public meeting is a gathering of interested and affected parties to present and exchange information and views on a proposal. Public meetings serve several functions, including the following:

- provide background information on the proposal
- identify other interested and affected parties

- respond to any question or concerns regarding proposals
- actively seek information which could include perceptions of needs, attitudes to specific aspects of the proposals and issues of concern,
- identify reasonable alternatives and/or significant issues associated with the proposals
- provide feedback to the public such as progress of investigations, or completion of the Impact Assessment and
- seek consensus on opposing views and conflict areas.

In designing a meeting it is important to be clear about what is to be accomplished by holding the meeting. The meeting should begin with a description of the proposal and its anticipated effects by the proponent. Displays of posters and other illustrative materials may also be made available to give the public a good understanding of all aspects of the proposal. Concerned people should then be invited to identify the issues and or alternatives that they believe should be addressed in the EIA study. A written account or record of the proceedings of the meeting should be made.

While public meetings appear to be the simplest and most direct way of gaining contact with the public, they are one of the most complex, unpredictable and demanding methods of public involvement and have several limitations.

The consultant should device ways of minimizing or avoiding these limitations by:

- Organizing small to medium sized meetings because large public meetings may create an intimidating atmosphere and prohibit people from raising questions or concerns.
- Being on the watch out for interested groups or assertive local individuals who have a particular agenda and may take over the meeting.
- Making sure that people do not use public meetings to raise and discuss other issues beyond the scope of the proposal
- Having contingency plans because on practical level it is difficult to know how many people will participate and therefore what facilities and services will be required.

- Combining a public meeting with other methods because a meeting does not ensure that all views are heard as only those with time available can participate.

- **News advertisement;**

Advertisement in a newspaper can be used to provide information to the general public on a proposal and at the same time solicit comments from them. They can also be used for announcing public meetings or other public involvement activities. An advertisement could also include a response form on which readers can express their opinions or indicate willingness to participate in other public involvement activities. The way in which an advertisement is placed will obviously affect the number of people who are reached. It is important to place the advertisement or article in a prominent place in the newspaper. The information provided should be accurate, clear and concise and the language should be simple.

A major limitation of this method is that the information will only reach those interested and affected parties that regularly purchase and read the newspapers. This would obviously exclude members of the community who are poor, illiterate and have no interest with newspapers. It is important to devise other ways to reach such groups.

- **Surveys;**

Surveys can be used to determine public attitudes, values and perceptions on the various issues surrounding a proposal.

A rigorous methodology must be employed to ensure that the findings of the surveys represent the sentiments of the communities being sampled. Surveys must therefore, be designed by an experienced person.

The purpose of survey must be clear and an indication of how the information will be used must be given. Surveys can provide an expression of the feelings from the public, not just those individuals who are most directly affected. They also gather opinions from people who might be unwilling to speak out at public meetings or participate in other public involvement activities. Surveys also give a snapshot picture of public opinion at a given time.

The limitation in surveys is that they are time consuming; they only convey public views at a given time.

- **Workshops;**

The term ‘workshop’ is used for a wide variety of small meetings in which a limited number of participants can be briefed on a proposal, or be engaged in the review of plans. Workshops are expected to produce results as well as to be forums for exchanging information. They are also useful for dealing with complex topics where the public needs briefing on technical matters as well as time for detailed consideration.

Workshops can be used at a number of different stages of the public involvement process. They allow for in-depth involvement and participants have an opportunity to work out value priorities and evaluate alternatives.

Workshop participants have to be properly informed of the proposal, as well as the issues under consideration.

In designing a workshop it is important to identify activities which will lead to desired results.

- **Advisory Groups;**

Advisory groups usually consist of a relatively small group of people who represent various interests, points of view or fields of expertise to advise the proponent or consultant with the proposed actions or a specific proposal; these may include NGOs, CBOs, grass-root organizations and village committees.

The advisory groups can play the following roles;

- They provide a cross sampling of public views and concerns and members of the group have a chance to be informed about the issues before coming to conclusions and have a better understanding of the consequences of decisions.

- Enhance personal relationships that result in members of the group developing deeper understanding of the concerns of other stakeholders and establish relationships that serve as a moderating influence on more extreme ideas.
- They can serve as communication link back to the communities they represent
- They can assist in determining the terms of reference for the Impact study.

An advisory group must be representative of the public, which may have an interest in or be affected by a proposal, thus extensive consultation with interested and affected parties prior to the establishment of an advisory group is important

### **2.3.3 Scoping Report;**

The proponent will prepare a written report on the results of the scoping exercise. This will serve as a record for interested and affected parties and as guidelines for the impact assessment evaluation.

The report should at least indicate;

- how scoping was undertaken
- how the public was involved
- how the authorities, interested and affected parties were consulted, including dates and summaries of issues raised
- alternatives which should be examined in the Impact Assessment
- the issues of concern
- the specific guidelines for undertaking and preparing the Impact Assessment.

### **2.3.4 Terms of Reference (ToR)**

Following an identification of key environmental issues of concern and how various stakeholders will be involved the proponent prepares the Terms of Reference for the EIA. First the proponent will prepare a draft Terms of Reference and submit fifteen (15) copies to NEMC. The ToR should be accompanied by the scoping report.

The ToR should be able to provide formal guidance for practitioners on the range of issues that must be addressed in the EIA process. They should also form a basis for subsequent review process.



The ToR must indicate that the Environmental Impact Statement should include;

- a description of the proposed undertaking and an analysis of the need or reason for the undertaking
- the objective of the undertaking
- other options for carrying out the undertaking
- alternatives of the undertaking
- a description of the present environment that would be affected directly or indirectly
- a description of the future environment predicting its condition if the undertaking did not take place.
- the impacts that may be caused to the environment by the undertaking
- proposed measures to prevent or mitigate all adverse impacts
- an evaluation of opportunities and constraints to the environment of the undertaking
- a proposal for an environmental management programme to cover constructional, operational and decommissioning stage of the undertaking.
- a proposal for environmental monitoring
- a proposals of a programme for public information.

The ToR should be submitted to NEMC for approval. Where necessary a visit to the site(s) will be made. The outcome of the review of the ToR should be communicated to the proponent within a period not exceeding **thirty (30) days**. A model EIA ToR is provided in details in appendix 3.

Upon approval of ToR, the environmental investigation and preparation of EIS can follow immediately.

## **2.4 REPORT WRITING GUIDELINES AND REQUIREMENTS**

The objective of these guidelines is to provide a report format as well as the aspects, which should be covered in the preliminary and full or comprehensive impact assessment reports prepared by developers or proponents.

The basic aim of this report format can be summarized as to:

- Produce easily administered reports.
- Create a uniform and flexible set of requirements for Environmental Impact Statements.
- Accommodate the variability of proposals and creativity of consultants.

### **2.4.1 Report Requirements For Preliminary Assessment**

The objective of preliminary assessment is to show whether the development will have significant impact or not.

The report must therefore show whether it is necessary to conduct a full impact Assessment or if the identified impacts can be mitigated to the extent that their impacts are reduced to insignificant levels.

In the preliminary assessment report, it is important to provide summary statements of 'no impact' based on the identified 'environmental characteristics'.

Where the preliminary assessment indicates that the development will have no impacts on the environment, it is essential for the proponent to indicate his or her own commitment to such statements, in such a way, they take responsibility for the finding of no significant impacts.

If the preliminary assessment reveals obvious impacts, then these may be usefully presented in a table to assist reviewers and other decision-makers. Where, it is found necessary to provide additional (specialist) information to justify further the presence or absence of impacts, this can be done in an attachment(s).

The elements necessary for inclusion in the Preliminary Assessment report would therefore be:

- Name or title of proposal
- Proponent
- Location
- Main findings
- Conclusion, backed with reasons for the particular finding
- Consultant(s) name including, qualification or relevant experience, contact address or phone or fax or E-mail

#### **2.4.2 Report Writing Requirements for Impact Assessment**

The impact assessment report (EIS) is intended to be used by all the interested and affected parties which include:

- the developer or proponent
- the proponent's consultants
- the affected public
- the authority that determines the adequacy of the report (i.e. Review Authority)
- the approving authority

Typical elements of an EIA report include the following;

- A non-technical executive summary
- A description of the proposed activity, its purposes and rationale including raw materials
- A description of the local environment (site description) and baseline conditions including socio-economic, biophysical and cultural aspects
- Identifications, prediction and assessment of potential impacts from environmental, social, economic and cultural perspective for different phases of developments
- Analysis of those impacts as they relate to human health
- Consideration of alternatives and mitigation measures including commitment to mitigation
- Environmental management plan, monitoring and auditing program

- How public consultation in respect to the undertaking was implemented
- Any other necessary information to assess the proposed activity
- Decommissioning or closure plan
- Conclusions and recommendations

**The following details emphasize the general structure of EIA report;**

**(i) Cover Page**

Must display important information prominently and facilitate referencing. It would therefore contain information such as;

- Title of proposed project (development)
- Location of proposed development
- Proponents
- Lead Consultant(s) (EIA Coordinators)
- Contact Address and phone number
- Report designation (main or draft)
- Reviewing Authority
- Approving Authority
- Date of Submission

**(ii) Contents Page:**

The contents page assists the reader to locate specific sections of interest in the report.

The contents page should contain the following;

- List of major sections of the report
- List of Tables
- List of figures (including maps)
- List of appendices
- Page numbers of the report

It is worth noting that, for complex reports, it is advisable to have separate contents list for each chapter. But, for easy reading, it might be necessary to number the pages consecutively.

**(iii) List of abbreviations**

**(iv) Definitions**

**(v) A non-technical Executive Summary;**

The executive summary is extremely important as it provides a brief and concise overview of the report, highlighting the major findings and recommendations. Since the summary may be the only document to be read by higher authorities, it can be produced as a stand alone document. The executive summary will have a Swahili version, if the report is written in English.

**(vi) Introduction Section;**

The objective of the introduction section should be to provide background to the study to introduce the proposal and show how the report is generally structured.

In this section it will also be stated whether the assessment is preliminary or full EIA.

The following elements shall therefore be among those considered to appear in the introduction section;

- Background information
- Justification for the EIA
- An outline of the proposal showing objectives, location, proposed activities, duration of construction, and life span of development
- An outline of the structure of the report

The outline of the structure of the report should show how it is organized in terms and location of different chapters, ToR, Summary, Conclusions and Recommendations.

**(vii) Terms of Reference (ToR);**

The ToR are important as they provide guidelines for undertaking the EIA according to agreements made during the scoping stage.

ToR, will vary from one development proposal to another. As such, it is quite difficult to stipulate standard requirements for them.

Where additional information not required by ToR is found to be necessary for inclusion, then consultants have to take legal responsibility for such information. Typical ToR must indicate *inter-alia* the following;

- A description of the proposed undertaking and an analysis of the need/reason for the undertaking
- the objective of the undertaking
- other options for carrying out the undertaking
- alternatives to the undertaking
- a description of the present environment that would be affected, directly, or indirectly
- a description of the future environment, predicting its condition if the undertaking did not take place
- the impacts that may be caused the environment by the undertaking
- proposed measures to prevent or mitigate all adverse impacts
- an evaluation of opportunities and constraints to the environment of the undertaking
- a proposal for environmental monitoring and auditing
- a proposal for an environmental management programme to cover constructional, operational and decommissioning stages of the undertaking
- proposals for a programme of public information

**(viii) Approach to the Study;**

This section is intended to provide a description of the approach that is adopted in the study for instance the methodology used in the scoping exercise, in the EIA study, in the involvement of stakeholders, etc.

**(ix) Assumptions and Limitations;**

In this section, the objective is to indicate the circumstances, and limitations under which the study was carried out and their possible implications to the overall assessment.

Nevertheless the presentation of limitations and assumptions should not be allowed to be reason for producing generalized or tentative reports.

Normally, a good scoping process would avert the possibility of these limitations, since they would be incorporated in the planning stage.

The items that have to be included in this section, would be;

- At what stage the planning and decision making process the report was produced (and any decisions that may already have been taken)
- Availability of baseline information
- Financial Constraints
- Time Constraints
- Confidentiality Constraints
- The implications for the study, of the limitations and constraints identified

**(x) Administrative, Legal and Policy Requirements;**

The objective of this section is to show compliance with existing policies, laws and administrative conditions. Details, which may include the relevant actions of the legislation, may be included as Annexure.

Specifically, the section should include;

- Indication of the planning and administrative procedures followed and the relevant legislation.
- Indication of how compliance has been achieved with respect to other legislative provisions.

**(xi) The Project Proposal Section;**

The objective is to show an outline of the project proposal i.e. the details that give a general idea of what the project will entail.

Since the details can be lengthy for some types of projects, it is advisable to focus on project details that are linked to anticipated impacts.

The use of diagrams, maps or photographs of the project or of similar projects elsewhere, may assist to clarify processes or actions.

Many elements can be considered under this section. A few of them would include;

- Nature of development
- Surface area to be covered
- Area of land to be influenced by the project e.g., by noise, emissions or visual impacts
- Density and layout
- Architectural character
- Phasing of development (Construction, Operation, maintenance and decommissioning)
- Volumes and concentrations of effluent
- Removal and disposal of waste
- Support Services
- Personnel
- Location maps and lay-out plans
- Overall project costs
- Overall environmental management costs

**(xii) The Affected Environment;**

Under this section, a brief description of the environment that will be affected by the development is given.

The environment to be affected must be based on the broad definition of the term that would include biophysical, socio-economic, cultural, historical and even political factors.



According to reviewed EIS, the intention is to include everything on the environment, including those factors, which have minimal chance of being affected by the development. The advice here is that only those environmental factors necessary to understand the impact of the development, should be considered. The inclusion of encyclopedic details can make the report un-readable.

In order to facilitate an analysis of potential impacts, it is important to show the linkages between various environmental elements and their relationship. This would assist the determination of secondary and indirect impacts.

Other current and proposed projects in the area have to be taken into account in order to predict cumulative or synergistic impacts.

An example of elements to be included in this section, would therefore be of the following type;

- Location for example regional context, physical constraints, land tenure, surrounding land uses, direction and distance to neighboring towns, local infra-structure etc
- Boundaries like of the development and of the environmental effects
- Biophysical environment such as climate, soil, geology, hydrology, topography, flora and fauna
- Socio-economic environment like demography and socio-economic activities
- Cultural and historic environment such as sites of architectural ad cultural interest, visual impact
- Interested and affected parties
- Other aspects of particular significance or value
- Reference to relevant reports

**(xiii) Assessment Section;**

The objective is to make a synthesis and analysis of information relevant to the environmental impacts of a proposal.

Two important elements are considered under this section, namely: an outline of methodology used and the systematic assessment of impacts.

**(xiv) Methodology;**

- This should include an outline of the methods used to identify, assess and evaluate impacts
- Public participation

This section should include public participation methods employed in the process including such issues as a synopsis of who were contacted, when, where and what was actually said. Information regarding dissemination points (such as public libraries, notice boards and other information centres) for information relating to the project has to be given under this section.

**(xiv) Assessment of Impacts;**

The following considerations should be included for each identified impact.

- Statement of impact or effect
- Brief description of the impact or effect
- Group(s) affected, including land owner(s)
- Statement of criteria for determining significance (could include magnitude, geographic extent, duration, frequency, risk or uncertainty, size of group affected).
- Significance of or effect without mitigation
- Suggested measures for mitigation or optimization
- Significance of impact with mitigation or optimization measures

On describing impacts, it is important to refer to specialist reports, if information has been derived from there.

Additionally, the description of impacts should be able to state whether the impacts are;

- Positive or negative
- Direct, indirect or secondary
- Short term or long term

- Reversible or irreversible
- Remain Static or vary with time
- Will be felt locally, regionally or nationally
- Controversial
- Transboundary

Where mitigation of impacts is not feasible or cost effective this should be indicated.

Compensatory measures, including trade-offs or measures to enhance the positive effects of the project, should be explored.

As the most important part of the EIS, Assessment must be presented in a form which allows quick reference and comparison. Use of tables, also to appear in the executive summary, to present major impacts for each alternative, is recommended.

It is also important, in this section to include information on residual effects in terms of quantities and types of materials, after identification of suitable mitigation measures.

Together with residual impacts, a consideration of cumulative and synergistic impacts where there are other development projects, has to be included.

**(xvi) Mitigation;**

This section will show how the proponent is committed to implementing the mitigation measures proposed against the identified impacts. Responsibility for carrying out monitoring by other independent institutions or firms has to be shown under this section as well.

**(xvii) Evaluation of alternatives;**

In order to weigh the available information and to determine which alternative is in the best interest of the community at large, an evaluation has to be carried out.

Under this section, the following elements should be considered and included;

- Method of evaluation. This could be based on expert opinion or other techniques such as panel evaluation cost - benefit analysis
- Comparison of alternatives
- Recommendations

**(xviii) Incomplete or unavailable information;**

This section is essential. It should provide an insight of the adequacy or scarcity of information which could have been essential for the assessment such as uncertainty and lack of information about the effect of new technology.

Specific issues to be included under this are;

- Identification of gaps in knowledge or unavailable information
- Reasons for inadequacy or incompleteness of information
- Implications for the decision making process
- Provision of evidence on the application of the technology elsewhere

**(xix) Conclusions and Recommendations;**

The objective is to highlight key conclusions and present recommendations arising from the whole study. Some of the elements that should be included in this section are:

- A brief discussion of the key issues
- Indication of the major positive and negative impacts; and the mitigation measures
- Statement of any serious risk associated with the project in general
- Identification of any management and monitoring needs
- Additional recommendations

**(xx) Definitions of Technical Terms;**

The objective is to assist interested but non-specialist readers. A glossary of terms, with their explanations in simple language should be provided.

**(xxi) List of Consultants;**

The objective is to keep records and traceability of the consultant. The following details should be provided for each consultant.

- Name and qualifications
- Current Position and the contribution to the study

**(xxii) References;**

The objective of this section is to indicate source of information used in the report.

This section is extremely important because some of the material used as background information may be in unpublished form; and yet it may be necessary that these are available during the review process.

**(xxiii) Personal communications;**

Information obtained through personal communications should also be recorded under this section or separately. This type of information could come from both interested parties and specialists.

**(xxiv) Appendices;**

Appendices are essential as they provide support to the recommendations made in the main report and they contribute towards its overall quality.

Examples of documents that may be provided as appendices are;

- Detailed planning proposal
- Policy guidelines
- Outline of scoping and public involvement process
- Technical reports prepared in conjunction with the proposed development
- Records of the meetings with various stakeholders and the list of organizations and persons consulted

It should be noted that the objectives of these appendices are among others, is to provide additional information necessary for decision making process. It is therefore not advised

to include irrelevant information that would only delay the process of decision-making. Only essential information has to be included.

## **2.5 REVIEW GUIDELINES**

The main aim of review is to provide an evaluation of the strengths and weakness of environmental impact reports submitted. Reviewers assess the content, comprehensiveness and adequacy of reports, as well as the organizational and presentation qualities. The review also identifies the issues not covered, inaccuracies of information, problems with logic or any conflicts apparent in the assessment process. On the basis of the review, a decision is taken as to whether the proposal should be accepted or not.

### **2.5.1 The review process;**

NEMC shall be responsible for the review. Five types of the environmental impact assessment reports shall be reviewed by NEMC. Three of these reports before the project starts, and these are the Screening Reports (SR), Preliminary Environmental Report (PER) and Environmental Impact Statement (EIS).

The other two reports, that is the monitoring and auditing reports shall be reviewed after the project is operational. The proponent shall submit 15 copies of EIS, PER and monitoring reports to NEMC, two copies to Division of Environment and to two copies to appropriate districts.

In addition to the review guidelines, other relevant tools that aid the review process to arrive at a proper decision include;

- site verification visits and discussion with local officials and residents
- use of scoping report and approved terms of reference
- report writing guidelines and environmental check list of characteristics for a particular project.

### **(i) Review approach;**

NEMC and the TRC will review several environmental impact reports at any one sitting, at different levels i.e. can be several environmental impact statements, screening, scoping, review, monitoring and auditing reports and the decommissioning plans.

The TRC will to arrive at the consensus by comparing notes discussing each project, and finally giving recommendation as to the fate of each proposal, together with recommended terms and conditions under which the proponent is to carry out the project.

**(ii) Additional Information Required;**

While reviewing the EIA, NEMC may require a detailed analysis of certain significant environmental impacts or any other information that may be required to adequately assess the proposal. The request for additional information will generally focus on those issues of primary concern. It may require additional fieldwork, public consultation and detailed analysis of potential impacts, their severity and significance of the residual impacts both negative and positive, especially those directly affecting individuals and communities.

The additional information is subject to further review by the TRC, or depending on the complexity and scope of the activity by an independent review panel.

**(iii) Public Review;**

There will be a review for all EIS and approved PER and SR. This will involve putting up notices in newspapers, radio and public places on the intended project. The reports will be available for review by the general public. The public will be *given 21 days* to react. Their reactions will be collated by NEMC and will assist in making the final decision.

**(iv) Public Hearing;**

Public hearing will be conducted for projects, which have strong public concern, and impacts are extensive and far-reaching. Is a formal meeting usually held during the



review process to provide an opportunity for stakeholders to challenge a proposal with constructive exchange of information and ideas. NEMC will co-ordinate the public hearing by appointing a five-man panel of which at least one third of the members must be drawn from the affected party including village leaders or elders of the local area. The findings of the public hearing will be an important input in making the final decision.

### 2.5.2 **Review criteria for evaluating adequacy of EIA reports;**

For the EIA to be useful, it has to disclose all relevant environmental considerations associated with a project and also provide information needed by decision makers to assess the acceptability of the environmental consequences.

EIA should assist;

- (i) **Project proponents;** to plan, design and implement their projects in a way that minimizes negative effects on the biophysical and socio-economic environments.
- (ii) **Government and responsible authorities;** to decide whether or not a project should be approved, and if so, under what terms and conditions
- (iii) **The public;** to understand a project and its environmental, socio-economic, and cultural impacts, and to make informal and substantive comments in the process of report review and approval.

Thus, the reviewer should ask a number of basic questions before concluding on the adequacy of an EIA report. The following outline of questions may also be useful to project proponents and/or their consultants when pre-evaluating their EIA reports before submission;

- Has the report adequately addressed all the important issues in the (ToR)?; i.e. does the report disclose all the relevant environmental considerations associated with the project?
- Has it focused on key issues, which need to be answered?
- Is the methodology used to gather and analyze information scientifically and technically sound?

- Is the report clearly and coherently organized and presented so that it can be understood especially by the lay public and decision makers?
- Does the report provide information needed by decision-makers to assess whether or not the environmental consequences are acceptable.

In a formal project environmental and socio-economic evaluation procedure, the following review criteria have been adopted for use. These are;

- Description of the development, the local environment and the baseline conditions
- Identification, analysis and assessment of the impacts
- Consideration of alternatives and impact mitigation and
- Communications of the results

A more detailed explanation is given in Appendix 4

#### **2.5.2.1 Review area 1 (Description of the development, local environment and baseline conditions);**

##### **(i) Description of the Development;**

The purpose and objectives of the development should be explained. The description of the development should include the physical characteristics, scale and design as well as quantities of material needed during pre-construction, construction and operational phases. The types and quantities of waste matter, energy and residual materials and the rate at which these will be produced should be estimated. The methods used to make these estimations should be clearly described, and the proposed methods of treatment for the waste arising and residual materials should be identified. Waste should be quantified wherever possible.

##### **(ii) Site Description;**

The area of land affected by the development should be clearly shown on a map and the current land uses of this area clearly demarcated. The affected site should be defined broadly enough to include any potential effects occurring away from the construction site such as dispersal of pollutants, traffic, changes in channel capacity of water courses as a result of increased surface run of etc.).

**(iii) Baseline Conditions;**

A description of the environment as it is currently and, as it could be expected to develop if the project were not to proceed. Some baseline data can be adhered from existing data sources, but some will need gathering and the methods used to obtain the information should be clearly identified. Baseline data should be gathered in such a way that the importance of the particular area to be affected can be planned into the context of the region or surrounding and that the effect of the proposed change be predicted.

**2.5.2.2 Review area II (Identification and evaluation of key impacts);**

**(i) Identification of Impacts;**

The methodology used to define the project specification should be clearly outlined, including details of consultation with expert bodies (e.g. Planning Authorities, Institutions, Local Authorities, Ministries, Departments, Regulatory Agencies etc.) and the public, and reference to panel of experts, guidelines, checklists, matrices, previous best practice examples of Environmental Impact Assessments on similar projects (whichever are appropriate). Consideration should be given to impacts which may be positive or negative, cumulative, short or term, permanent or temporary, direct or indirect. The logic used to identify the key impacts of the development on human beings, flora and fauna, soil, water, air, climate, landscape, material assists, cultural heritage, or their interaction, should be considered.

**(ii) Prediction of Impact Magnitude;**

The magnitude of each impact should be determined as the predicted deviation from the baseline conditions, during the pre-construction and construction phases and during normal operating conditions and in the event of an accident when the proposed development involves materials that could be harmful to the environment (including people). The data used to estimate the magnitude of the main impacts should be clearly described.

The methods used to predict impact magnitude should be described and should be appropriate to the size and importance of the projected disturbance. Where possible, estimates of impacts should be recorded in measurable quantities with ranges and or confidence limits as appropriate. Qualitative descriptions where necessary should be as fully defined as possible such as insignificant means not perceptible from more than 100m distance.

**(iii) Assessment of Impact Importance;**

The importance of all those impacts which remain after mitigation should be assessed using the appropriate national and international quality standards where available. Where no such standards exist, the assumptions and value systems used to assess significance should be justified and the existence of opposing or contrary opinions acknowledged.

**2.5.2.3 Review area III (Alternatives and mitigation);**

**(i) Alternatives;**

Alternative sites should have been considered where they are practicable and available to be developed. The main environmental advantages and disadvantages of these should be discussed and the reasons for the final choice given. Where available alternative processes, designs and operating conditions should have been considered at an early stage of project planning and the environmental implications of these outlined.

**(ii) Mitigation;**

All significant adverse impacts should be considered for mitigation and specific mitigation measures put forward where practicable. Mitigation methods considered should include modification of the project, compensation and the provision of alternative facilities as well as pollution control. It should be clear to what extent the mitigation methods will be effective. Where the effectiveness is uncertain or depends on assumptions about operating procedures, climatic

conditions etc., data should be introduced to justify the acceptance of these assumptions.

**(iii) Commitment to Mitigation;**

Clear details of when and how the mitigation measures will be carried out should be given. When uncertainty over impact magnitude and/or effectiveness of mitigation over time exists monitoring programmes should be proposed to enable subsequent adjustment of mitigation measures.

**2.5.2.4 Review area IV (Communication of results)**

**(i) Presentation;**

The report should be laid out clearly with the minimum amount of technical terms. An index, glossary and full references should be given and the information presented so as to be comprehensible to the non-specialist. Also maps, diagrams, tables etc., where appropriate, should complement text. Technical information should be provided in the appendix.

**(ii) Balance;**

The environmental impact statement should be an independent objective assessment of environmental impacts and not a best case statement for the development. Negative impacts should be given equal prominence with positive impacts, and adverse impacts should not be disguised in any way whatsoever. Prominence and emphasis should be given to predict large negative or positive impacts.

**(iii) Non-technical Executive Summary;**

There should be a non-technical executive summary outlining the main conclusions and how they were reached. The summary should be comprehensive, containing at least a brief description of the project and the environment, the identified impacts of the proposed development, an account of the main mitigating measures to be undertaken by the developer, and a description of any remaining or residual impacts. A brief explanation of the

methods by which these data were obtained and an indication of the confidence which can be placed in them should be included.

### **2.5.3 Overall assessment of EIS**

At the end of the review process the EIS may be classified by the NEMC according to the following overall rating/grades for the report:

- A Excellent, no task left incomplete**
- B Good, only minor omissions and inadequacies**
- C Satisfactory despite omissions and inadequacies**
- D Parts are well attempted but must as a whole be considered just unsatisfactory because of omissions and/or inadequacies**
- E Poor, significant omissions or inadequacies**
- F Very poor, important tasks poorly done or not attempted**

Normally, a brief summary of the key factors which determine the overall rating is provided including an assessment of the strengths and weaknesses of the report as well as any need for further study, and input monitoring and management by the proponent or the government.

### **2.5.4 Approval terms and conditions**

If EIA acceptance of the proposal is granted on the basis of the EIA report, terms and conditions that should govern the manner in which the activity should proceed may be provided. These can refer to the responsibilities of either the government or the proponent.

An EIA Review Report is then compiled which summarizes the EIA reports quality in terms of:

- (i) **Minimum requirements (did the review criteria marked in the review tables perform satisfactorily i.e. A, B or C? YES or NO. If 'no' the report should be revised).**
- (ii) **Broad compliance (Did all four review areas perform satisfactorily - A, B or C? YES or NO. If 'no', revision should be done.**
- (iii) **Overall quality (i.e. the overall rating of the report - A,B,C,D,E or F refer section 1.8)**

## 2.6 MONITORING GUIDELINES

Monitoring is one of the important factors for environmental management within the EIA context. It provides a mechanism for checking whether mitigation measures have been carried out and whether predictions were accurate. Other factors are; environmental management plan and environmental audits. Monitoring therefore not only ensure that what has been stated within the environmental impact statement (EIS) actually takes place, but also to ensure effective management of impacts.

Because monitoring is essential to identify undesirable trends it is necessary that pre - project baseline data be collected during EIA studies to identify and measure changes occurring in the environment.

### 2.6.1 Objectives of monitoring;

Once a development is being implemented, monitoring and evaluation of activities provide important feedback mechanisms to;

- Ensure that mitigation actions recommended in the EIA are incorporated in project design and implementation
- Ensure that mitigation measures are maintained through the operational life and where appropriate the decommissioning of a project
- Identify corrective measures or redesign mitigation measures if they are not sufficiently effective
- Improve initial screening, environmental appraisal and EIA procedures.
- Increase the knowledge base of environmental effects of development activity

Monitoring should therefore include; verification of potential impacts; adherence to approved plans and compliance to any terms and conditions.



### 2.6.2 Responsibility for monitoring;

Monitoring is the responsibility of the project proponent, NEMC and the responsible sector ministries and responsible environmental agencies. The proponent is required;

- (i) To plan and design his or her project very early in a way that avoid or minimize negative impacts and capture potential benefits so as to reduce costs related to time and resources before it is too late to ameliorate them.
- (ii) To avoid or minimize negative impacts and capture benefits during construction and operational. These should clearly be reflected in his environmental management plan.
- (iii) To compensate where it involves destruction of property or relocation of people. However, while implementing compensation programmes, “local people must be no worse off than they were before a project was implemented”.
- (iv) To prepare an Environmental Management Plan (EMP), this specifies methods, and procedure for addressing expected impacts and a contingent plan to deal with unforeseen effects. The plan should detail what monitoring is considered necessary and how it will be carried out. EMP should ensure that there would be effective feedback of monitoring information to both project management and NEMC so that impact management measures can be implemented and properly monitored. It should clearly specify responsibilities between the proponent, NEMC and responsible sector ministries. It should also identify what expertise, training and equipment is required for successful impact management activities, particularly during monitoring.

In the process of granting an EIA certificate, “terms and conditions” under which the project should proceed have to be prepared. These should accompany the EIA acceptance notification and are intended to be attached to or incorporated within the permits or certificate issued by the minister responsible for Environment.

These Terms and Condition should specify;

- What negative impacts and benefits are of concern to NEMC and the Government?
- What is expected of the proponent in terms of action, monitoring and management

- Expected changes to the project planning and design to ensure environmental soundness of the project
- What data and information is needed for monitoring during project implementation?

NEMC may also prepare its own EMP, outlining the actions required of various agencies to ensure good environmental performance of the project. The EMP should be submitted to the minister responsible to Environment along with the recommendations for EIA approval. NEMC may also establish any inter - agency co-ordination mechanism to ensure that environmental management activities are carried out efficiently and effectively.

NEMC should keep records of monitoring process and a copy of which should be submitted to the responsible minister for Environment.

### **2.6.3 Requirement for monitoring**

Monitoring is particularly important where;

- (i) The environmental impacts cannot be predicted with certainty
- (ii) Intensification of use is a possibility, particularly with respect to environmental sensitive areas
- (iii) Populations of rare or endangered species are impacted upon or where there is doubt of secondary impacts
- (iv) Restoration of fragile habitats is proposed
- (v) The success of mitigation measures proposed is uncertain.
- (vi) Impacts on the health, safety and livelihoods of local communities are uncertain

Aspects for consideration when formulating an appropriate monitoring programme include;

- (i) What factors need to be monitored during pre-construction, and operation phase
- (ii) Frequency of checks (with initial and final checking times)
- (iii) Nature of checks (site visit, sampling and testing survey, etc)

- (iv) Duration of monitoring
- (v) Interpretation of monitoring data
- (vi) Organization of personnel responsible for monitoring
- (vii) Costs involved
- (viii) Institutional framework for monitoring

It is important to note that there is a variety of monitoring and additional surveys that might be required for a particular development, and these will be very specific for each development.

Monitoring can also be used together evidence of good practice and environmental benefits which can then be used to gain positive public relations with both the regulations and the local community.

A review of the results gained from monitoring is auditing. An environmental audit is a management tool comprising of a systematic, documented, periodic and objective evaluation of how well the environment is safeguarded.

#### **2.6.4 Key parameters to be included in a monitoring programme;**

**(i) Pre - Construction (baseline conditions);**

- Noise
- Hydro-metric data
- Biological parameters
- Public health and water
- Related disease vectors
- Resettlement, land uses, agricultural practices and watershed management
- Air quality

**(ii) Construction;**

- Air quality
- Noise and vibrations

- Natural terrestrial environment
- Aquatic resources/ ecosystems
- Communicable social diseases
- Waste disposal
- Social/ community monitoring
- Water quality

**(iii) Operation;**

- Noise
- Water quality (water precipitation, oil levels, BOD, metals)
- Hydro-metric data (flows, sediment transport, ground water etc)
- Biological parameters
- Public health and water related disease vectors
- Resettlement or support programme
- Air quality or emission CO<sub>2</sub>, NO<sub>2</sub>, SO<sub>2</sub>, hydrocarbons, particular
- Socio or community monitoring or public involvement

**2.6.5 Environmental Audits;**

The NEMC shall undertake periodic and independent reassessment of the undertaking. The positive and negative impacts of the project will serve to provide instructive feedback on: the adequacy of planning during the project design; the accuracy of investigations in the impact assessment stage; the wisdom of the decisions taken during the review stage; the effectiveness of the conditions of approval; and environmental management plans instituted at the operation stage of the project. The environmental audit report will be prepared by the proponent and submitted to NEMC for evaluation. The proponent shall meet costs of the environmental audit.

**2.6.6 Decommissioning;**

This is the end of the project life. The decommissioning report including restoration or rehabilitation activities shall be prepared by the proponent and submitted to the NEMC for record. Should there be need for continued environmental monitoring, the proponent shall bear the costs.

## **2.7 IMPORTANT CONSIDERATIONS DURING THE EIA PROCEDURE**

For effective execution of the EIA procedure the following are pre-requisites;

### **2.7.1 EIA fees;**

The proponent is required to pay the following fees;

- Environmental Assessment registration fee payable at NEMC and local Authority office when collecting the application forms
- Environmental Permit fees payable to Environmental Trust Fund

Where the undertaking is approved, the proponent shall pay a fee prior to collection of the Environmental Certificate. The concerned fee shall be determined by NEMC.

### **2.7.2 Penalties;**

Proponents who fail to comply with the requirements of the EIA procedures shall be subject to appropriate penalties as established by 'The Environmental Management Act 2004'.

### **2.7.3 Other Environmental Management Costs;**

### **2.7.4 Time frame;**

The total period for the determination of an application at all stages by NEMC is at most 150 working days; (Screening - 30 days; Approval of ToR - 30 days, Review - 60 days - inclusive of 21 days for public reviews), and issuance of Provisional Environmental permit - 15 days).

The above time frame does not include the period a proponent takes to fill a registration form, prepare Preliminary Environmental Report or Environmental Impact Statement nor does it include time for Public Hearing.

### **2.7.5 Public notices;**

The following notice to the public shall be issued;

**(i) EIA Scoping Notice;**

This is a Notice of the proposal provided by the proponent after the screening stage to stakeholders as well as for advertising in national press for public inspection of the proposal.

**(ii) EIA Notice;**

Upon receipt of a draft EIS from the proponent NEMC shall also give notice calling for public review.

### **2.7.6 Appeal;**

The Appeal Panel nominated by the Minister responsible for environment shall handle all matters pertaining to appeals.

### **2.7.7 Technical Review Committee (TRC);**

This is a cross-sector technical committee composed of members from sectors responsible for environment and resource management and those that are currently under investments pressure and relevant research institutions. The TRC shall assist NEMC with the review process.

The TRC may co-opt specialists in relevant disciplines to assist in the review process whenever required. NEMC shall be the secretariat to the committee. The importance of TRC is crucial in enhancing the required technical credibility, institutional inter-agency co-ordination and accountability and transparency in deciding the fate of a proposed undertaking.

### **2.7.8 Reports;**

The following reports shall be prepared;

- Screening report submitted to proponent by NEMC
- Scoping Report submitted to NEMC by proponent
- Preliminary Environmental Assessment Report submitted to NEMC by the proponent
- Environmental Impact Statement submitted to NEMC by the proponent
- Reviews Report submitted to proponent by NEMC
- Environmental Management plan submitted to NEMC by proponent
- Annual Environmental Report submitted to NEMC by proponent
- Environmental Auditing Report submitted to TRC by NEMC
- Decommissioning Report submitted to NEMC by proponent

### **2.7.9 Environmental Sections (ES) and local level coordinators;**

Environmental Sections at sector level and environmental coordinators at local level shall be the collaborating partners in the EIA process. The linkages between the Minister responsible for Environment and NEMC on one hand and the Sector Environmental Sections, Environmental Secretariat of the Ministry Responsible for local Government, the Regional Environmental experts and the District Environmental Coordinators shall be binding in order to ensure clear lines of command to facilitate effective implementation. Delegation of powers to undertake EIA including review, approval and monitoring will depend on the nature of the project. This will be done in a separate communication to these various actors. In summary, the role and responsibilities of these sections and local level coordinators shall include the following:

#### **(i) Sector Environmental Sections**

- With assistance from NEMC to develop sector guidelines within the framework of the national EIA guidelines
- To issue EIA registration forms to proponents and provide relevant information on policies, legal and other administrative requirements
- To assist the general EIA process administration at sector level

- To ensure compliance with various regulations, guidelines and procedure issued by the Minister
- To provide environmental advice and technical support at Ministry level with regard to EIA issues.

**(ii) District Environmental Coordinators;**

- To issue EIA registration forms to proponents and provide relevant information on policy, legal and other administrative requirements.
- To co-ordinate EIA process at district level and thus play a secretariat role to the District Environmental Committee.
- To link, and liaise with the Minister Responsible for Environment and NEMC on all EIA undertakings within the district.
- To Coordinate functions of local level (District, Ward and Village) Environmental Committees in the context of EIA.
- To provide information and promote awareness of these guidelines as well as the Environment management Act various stakeholders.
- To ensure compliance with various regulations, guidelines and procedure issued by the Minister
- To provide environmental advice and technical support to district level staff with regard to EIA issues.
- To promote public awareness of environmental issues through educational programmes and dissemination of information.



## PART THREE

### 3.0 APPENDICES PRE-REQUISITE FOR THE EIA PROCESS

#### 3.1 Projects Requiring EIA - Mandatory List

##### 1. Agriculture

- Cultivating arid and semi-arid areas not less than 0 ha.
- Water management projects for agriculture (drainage, irrigation)
- Large scale farming of not less 50ha - mono- culture and mixed cropping of cash or food crops
- Pest control projects such as Tsetse, Army worm, *Quelea quelea*, Locusts, Rodents, weeds)etc.
- Fertilizer and nutrient management
- Agricultural programmes necessitating the resettlement of communities.
- Introduction of new breeds of crops.
- Introduction of Genetically Modified Organisms
- Floriculture
- Salt pans
- Introduction of new farming technologies

##### 2. Livestock and Range management

- Large Scale livestock movement
- Livestock markets
- Introduction of new breeds of livestock
- Introduction of forage species
- Fencing
- Provision of public water supply (watering points, wells)
- Ectoparasite management (cattle dips, area treatment)
- Intensive livestock rearing units
- Livestock routes
- Introduction of GMOs
- Introduction of new livestock management technologies

### **3. Forestry activities**

- Timber logging, harvesting and processing
- Forest plantation
- Afforestation and Reforestation
- Introduction of new species
- Selective removal of commercial tree species
- Pest management
- Introduction of GMOs
- Introduction of new forestry management technologies

### **4. Fisheries activities**

- Medium to large scale fisheries
- Artificial fisheries such as aqua-culture for fish, algae, crustaceans shrimps, lobster or crabs).
- Introduction of new species in water bodies
- Fish farming
- Introduction of Genetically Modified Organisms
- Introduction of new fishing technologies

### **5. Wildlife**

- Introduction of new species
- Wildlife catching and trading
- Hunting
- Wildlife ranching and farming
- Zoo and sanctuaries
- Introduction of Genetically Engineered Species
- Fencing

### **6. Tourism and Recreational Development**

- Construction of resort facilities or hotels along the shorelines of lakes, rivers, islands, marine parks, and oceans as well as national parks, forest reserves etc.)
- Hill top resort or hotel development
- Development of tourism or recreational facilities in protected and adjacent areas (national parks, marine parks, forestry reserves etc) or on islands and in surrounding waters
- Hunting and capturing
- Camping activities walk ways and trails etc.

- Sporting and race tracks/sites
- Tour operations
- Development of Eco tourism and cultural tourism centers.

## **7. Energy Industry**

- Production and distribution of electricity, gas, steam and hot water
- Exploration, Transmission, Development and Storage of natural gas
- Thermal power development such as coal, nuclear
- Geothermal
- Hydro-power
- Bio-mass power development such as co-generation
- Wind -mills power development
- Solar power development
- Nuclear energy
- Hydrogen energy
- Introduction of new technologies in the energy sector

## **8. Petroleum Industry**

- Oil and gas fields exploration and development, including seismic survey
- Construction of offshore and onshore pipelines
- Construction of oil and gas separation, processing, handling and storage facilities.
- Construction of oil refineries
- Construction of product depots for the storage of petrol, gas, diesel, tar and other products within commercial, industrial or residential areas.
- transportation of petroleum products

## **9. Food and beverage industries**

- Manufacture of vegetable and animal oils and fats
- Oil refinery and ginneries
- Processing, preservation and storage of meat and its products
- Manufacture of dairy products
- Brewing, distilling and malting
- Fish meal factories
- Slaughter - houses
- Soft drinks
- Tobacco processing

- Caned or bottled fruits etc
- Sugar factories
- Other agro-processing industries
- Genetically Modified organisms and products thereof

#### **10. Textile Industry**

- Cotton and Synthetic fibers
- Dye for cloth
- Ginneries
- Introduction of Genetically modified products such clothes

#### **11. Leather Industry**

- Tanning
- Tanneries
- Dressing factories
- Other cloth factories
- Introduction of GMO products such as shoes

#### **12. Wood, Pulp and Paper Industries**

- Manufacture of veneer and plywood
- Manufacture of fibre board and of particle - board
- Manufacture of pulp, paper, sand-board cellulose – mills

#### **13. Building and Civil Engineering Industries.**

- Industrial and housing estates
- Major urban projects (such as multi-storey building, motor terminals, markets etc)
- Tourist structures and facilities
- Construction and expansion or upgrading of roads, harbours, highways, ship yards, fishing harbours, landing sites air fields, airports, railways, pipelines etc
- River drainage and flood control works.
- Hydro - electric and irrigation dams
- Reservoir
- Storage of scrap metal.
- Military installations
- developments on beach fronts

**14. Chemical industries**

- Manufacture, transportation, use and storage of pesticide or other hazardous and or toxic chemicals
- Production of pharmaceutical products
- Storage facilities for petroleum, petrochemical and other chemical products (i.e. filling stations)
- Production of paints, vanishes, etc
- Disposal of chemical wastes

**15. Extractive industry**

- Extraction of petroleum
- Extraction and purification of natural gas
- Other deep drilling - bore-holes and wells
- Mining
- Quarrying
- Coal mining
- Sand dredging

**16. Non-metallic Industries Products**

- Manufacture of cement, asbestos, glass, glass-fibre, glass-wool
- Processing of rubber
- Plastic industry
- Mime manufacturing, tiles, ceramics

**17. Metal and Engineering industries**

- Manufacture and assembly of motor – vehicles
- Manufacture and assembly of aero planes, ships, trains
- Manufacture and assembly of satellites
- Manufacture of other means of transport such as trailers, motor-cycles, bicycles-cycles
- Body - building
- Boiler - making and manufacture of reservoirs, tanks and other sheet containers
- Foundry and Forging
- Manufacture of non - ferrous products
- Iron and steel
- Electroplating

**18. Waste treatment and disposal**

- (a) *Toxic and Hazardous waste*

- Construction of Incineration plants
- Construction of recovery plant (off-site)
- Construction of waste water treatment plant (off-site)
- Construction of secure land fills facility
- Construction of storage facility (off - site)
- Collection and transportation of waste.

**(b) Solid Waste**

- Construction of incineration plant
- Construction of composting plant
- Construction of recovery/re-cycling plant
- Construction of Municipal Solid Waste landfill facility
- Construction of waste depots
- Collection and transportation

**(c) Sewage**

- Construction of waste water treatment plant
- Construction of marine out fall
- Night soil collection transport and treatment
- Construction of sewage system

**19 . Water Supply**

- Canalisation of water courses
- Diversion of normal flow of water
- Water transfers scheme
- Abstraction or utilization of ground and surface water for bulk supply
- Water treatment plants

**20. Health projects**

- vector control projects (malaria, bilharzia, trypanosomes etc)
- Construction and location of hospitals, dispensaries and health centers
- Construction and development of Pharmaceutical industries

**21. Land Reclamation and land development**

- Rehabilitation of degraded lands.

- Coastal land reclamation
- Dredging of bars, greyones, dykes, estuaries etc.
- Spoil disposal
- Sea walls

## **22. Resettlement or relocation of people and animals**

- Establishment of refugee camps
- Dam construction
- Establishment, expansion or rehabilitation of roads
- Change of land use such as mining, pastoralist against farmers
- Urban expansion

## **23. Multi-sectoral Projects**

- Agro-forestry
- Dispersed field of tree inter-cropping
- Alley cropping
- Living fences and other linear planting
- Windbreak or shelterbelts
- Integrated conservation and development programmes such as Wildlife Management Areas.
- Integrated Pest Management
- Diverse construction - public health facilities, schools and storage buildings, facilities for ecotourism and field research in protected areas, logging mills, furniture making, access roads, well drilling, camps, dams, reservoirs etc.
- River basin development and watershed management projects
- Food aid, humanitarian relief
- Oil refineries and ginneries

## **24 Trade: Import and Export**

- Hazardous Chemicals or Waste
- Plastics
- Petroleum products
- Vehicles
- Used materials
- Wildlife and wildlife products
- Pharmaceuticals

- Food
- Beverages
- Genetically Modified Organisms and products thereof.

**Note that Section 104 of the Draft Environment Management Project specifies some projects which need review and approval of the Minister Responsible for environment before EAI has to be undertaken**



### **3.2 PROJECTS (SMALL-SCALE ACTIVITIES AND ENTERPRISES) THAT MAY OR MAY NOT REQUIRE EIA.**

- Fish small scale culture
- Bee-keeping
- Small animal husbandry and urban livestock keeping
- Horticulture and floriculture
- Wildlife catching and trading
- Production of tourist handicrafts
- Charcoal production
- Fuel wood harvesting
- Tree Nurseries,
- Small enterprises
- Carpentry shops
- Wooden furniture and implement making
- Basket and other weaving
- Nuts and seeds for oil processing
- Bark for tanning processing
- Brewing and distilleries
- Taungya system
- Bio-gas plants
- Bird catching and trading
- Hunting
- Wildlife ranching
- Zoo, and sanctuaries
- Tie and dye making
- Brick making
- Beach seining
- Sea weed Farming
- Graves and cemeteries
- Urban Livestock Keeping
- Urban agriculture.
- Fish landing stations.

- Wood carving and sculpture
- Schools, dispensaries, community centre, Schools, Social halls, and play grounds
- Wood works e.g. boat building
- Market places
- Rain water harvesting
- Garages
- Carpentry
- Black smith.
- Tile manufacturing
- Kaolin manufacturing
- Vector control projects e.g. Malaria, Bilharzia, trypanosomes
- Livestock stock routes
- Fire belts.
- Tobacco curing kilns
- Sugar refineries
- Artisanal and small scale mining
- Rural road

### 3.3 DETAILS ON A MODEL ENVIRONMENTAL IMPACT ASSESSMENT TERMS OF REFERENCE

The purpose of the ToR is to ensure that whoever undertakes an EIA study complies with standard procedures and covers all salient issues identified during the scoping exercise. TORs should describe the project and clearly define what work is expected from the proponent. The TORs need to be approved by NEMC.

The following sections need to be included:

1. **Introduction:** This section should state, the purpose of TOR, the development project to be assessed, and the executing arrangements for the environment assessment.
2. **Project description:** A brief description of the major components of the proposed project; the implementing agency; a brief history of the project including alternatives proposed; its current status, timetable and identities of any associated projects planned or in progress within the region which may compete for the same resources be identified.

**Objectives:** This section will summarize the general scope of the environmental assessment and discuss its timing in relation to the process of project preparation, design and execution.

4. **Environmental Assessment requirements;** This section should identify any regulations and guidelines which will govern the conduct of the assessment and may include any or all of the following:-
  - National laws or regulations on environmental review and impact assessment
  - National EIA procedures and guidelines
  - Environmental assessment regulation of any financial organizations involved in the project
  - Any relevant corporate environmental policies.
5. **Study area:** This section should specify the boundaries of the study area for the assessment such as water catchments, geographic location etc., adjacent areas which should be considered like a residential area or any rich biological diversity area etc.,
6. **Scope of work:** This section specifies tasks needed to be completed to justify the conduct of an EIA study.

#### **Task (i): Description of the proposed project.**

Provide a brief description of the relevant parts of the project, using maps at appropriate scale where necessary, including the following information;

- Location, general layout, size, and capacity
- Pre-construction and construction activities
- Scheduling of staffing and support
- Raw materials needed, facilities and services
- Required off-site investments and life span.

#### **Task (ii): Description of the environment**

Assemble, evaluate and present baseline data on the relevant environmental characteristics of the study area. Include information on any changes anticipated before the project commences. Annotate or modify the list to show critical information for the project category.

- Physical environment :Geology; topography; soils; climate and meteorology; ambient air quality; surface and ground water hydrology; existing sources of air emissions; existing water pollution discharges and receiving water quality.

- Biological environment: flora; fauna ; rare or endangered species ; sensitive habitats; including parts or reserves ; significant natural sites etc. ; species of commercial importance and potential to become nuisances, vectors or dangerous.
- Socio economic and cultural environment ( including both present and projected, where appropriate ) ; land use; planned development activities; community structure; employment, distribution of income, goods and services; recreation public health; cultural properties; tribal peoples ; customs, aspirations and attitudes.

**Task (iii): Policy, Legislative and Regulatory considerations**

Describe Policies, regulations and standards governing environmental quality, health and safety, protection of sensitive areas, location, protection of endangered species, land use control etc. at international, national, regional and local levels.

**Task (iv): Determination of Potential Impacts of the proposed project.**

Describe impacts qualitatively where possible in the terms of environmental costs and benefits. In the analysis, distinguish between:-

- Significant positive and negative impacts
- Direct and indirect impacts
- Immediate and long term impacts
- Impacts that are unavoidable or irreversible.

Assign economic values where feasible and explain significant information deficiencies or any uncertainties associated with prediction of impacts.

**Task (v): Analysis of alternatives of the proposed project.**

Describe alternatives that were examined in the course of developing the proposed project and identify other alternatives which would achieve the same objectives .The concept of alternatives extends to :

- Location ,design; technology used
- Construction techniques and phasing
- Operating and maintenance procedures

Compare alternatives in terms of:-

- Potential environmental impacts
- Capital and operating costs
- Suitability under local conditions
- Institutional, training and monitoring requirements.

To the extent possible, quantify costs and benefits of each alternative, incorporating the estimated costs of any associated mitigation measures. The zero alternative i.e. of not constructing the project in order to demonstrate environmental conditions without it must be included.

**Task (vi): Development of management plan to mitigate negative impacts.**

- Recommend feasible and cost effective measures to prevent or reduce significant negative impacts to acceptable levels.
- Estimate the impacts and costs of those measure and of the institutional and training requirements to implement them.
- Consider compensation to affected parties for impacts which cannot be mitigated.
- Prepare a management plan including proposed work programs, budget estimates, schedules, staffing and training requirements and any other necessary support services to implement the mitigation measures.

**Task (vii): Identification of Institutional needs to Implement the EIA recommendations.**

Review the authority and capability of institutions at local, regional and national levels and recommend steps to strengthen or expand them so that the management and monitoring plans in the environmental assessment can be implemented. The recommendations may extend to new functions, inter-sectoral arrangements, management procedures and training, staffing, operation and maintenance, budgeting and financial support.

**Task (viii): Development of Monitoring Plan.**

Prepare a detailed plan for monitoring the implementation of mitigation measures and the impacts of the project during construction and operation. Include in the plan an estimate of capital and operating costs and a description of other inputs needed to carry it out.

**Task (ix): Development of Decommissioning Plan**

Prepare a detailed closure plan of the Project

**Task (ix): Public Consultation.**

Propose a thorough programme of consulting the public during the EIA study. The purpose of the programme will be assist the proponent to both inform all interested parties about the project and solicit their views about it. Specifically, the proponent will propose an effective, comprehensive public consultation strategy which includes at least:-

- A list of stakeholders to be consulted
- Method of reaching them and issues of concern raised
- The scheduling of consultation activities and
- How consultation efforts will be analyzed

And provide a record of meetings, communications and comments.

7. **Reporting:** The environmental assessment report should be concise and limited to significant supported by summaries of data collected and citation of references used in data interpretation. Organize the report according to guidelines outlined in part 1 of volume 3 of the general EIA guidelines.
8. **Consulting Team:** Identify the specialisations needed in the inter-discipline team for the particular project.
9. **Schedule:** In this section, specify dates for progress reports, interview and final reports and other important events.
10. **Other information:** Include here list of:-  
Data sources, project background reports and studies relevant publications and other items to which the consultants attention should be directed.

**NOTE:**

Proponents responding to these TOR should submit technical and cost proposals. The technical proposal will describe the proposed overall study strategy and detailed workplan of specific tasks mentioned and the study team members curriculum vitae and responsibilities in the team. Also included are the time schedule for carrying out the work, and expected outputs and any supporting evidence that the consultant, if any, is adequately trained, experienced and qualified to carry out the work to the satisfaction of the Minister Responsible for Environment and NEMC.

### 3.4 DETAILED EXPLANATION OF THE REVIEW CRITERIA

#### Review Area 1: Description of the Development, the Local Environment and the Baseline Conditions

1.1	Description of the development and the purpose(s) of the development is adequately described as well as its physical characteristics, scale and design. Quantities of material needed during construction and operation are included and, where appropriate, description of the production processes.	
1.1.1	The purposes and objectives of the development are adequately explained.	rating**
1.1.2	The design, size or scale of the development, and the nature and duration of construction and operation activities, are adequately described. Diagrams, plans, charts and/or maps are used effectively forth is purpose	rating**
1.1.3	The report adequately describes the environmental planning that went into the design of the project to minimise negative environmental effects and capture potential benefits.	rating**
1.1.4	Important design features, especially those for environmental planning and socio-economic management (e.g. pollution control, waste management, erosion control, handling of toxic or hardous materials, worker services) are highlighted.	rating
1.1.5	There is an adequate indication of the physical presence or appearance of the completed development within the receiving environment.	rating
1.1.6	The nature and quantities of material need during both the construction and operational phases are described as well as, where appropriate, the nature of the production processes.	
1.1.7	The numbers of workers involved with the project during both construction and operation are estimated.	rating**
Overall grade for category 1.1. A B C D E F		
(Note: all criteria marked ** with must be rated A, B or C for the category to be satisfactory, if not, return report to proponent for revision		
Comments		

## Review Area 1: Description of the Development, the Local Environment and the Baseline Conditions

1.2	Site description the one-site land requirements of the development are described, as well as the duration of each land use.	
1.2.1	The land area taken up by the development site is well defined and its location clearly shown on a map.	rating **
1.2.2	The uses to which this land will be put are described and the different land use areas demarcated.	
1.2.3	Where alternate plans, designs or sites are being considered each is adequately discussed according o Criteria 1.2.1 and 1.2.2.	rating
Overall grade for category 1.2 A B C D E F (Note: all criteria marked with ** must be rated A , B or C for the category to be satisfactory, if not, return report to proponent for revision)		
Comments		

1.3	Residuals: the types and quantities of residual and/or waste matter and energy created are adequately estimated, the expected rate of production given, and the proposed disposal routes to the environment identified.	
1.3.1	The types and quantities of waste matter, energy and residual materials and the rate at which these will be produced, are adequately estimated. Uncertainties are acknowledged and ranges or confidence limits given where possible	rating**
1.3.2	The ways in which it is proposed to handle and/or treat these wastes and rating residuals is indicated, together with the routes by which they will eventually be disposed of to the environment	rating **
Overall grade for category 1.3 A B C D E F (Note: all criteria marked with **must be rated A B or C for the category to be satisfactory, if not, return report to proponent for revision)		
Comments		

**Review Area 1: Description of the development, the local environment and the baseline conditions**

1.4	Bounding the study: appropriate boundaries to the study area and time horizon are identified	
1.4.1	The environment expected to be affected by the development is delimited with the aid of suitable scale map(s)	rating**
1.4.2	The affected environment is defined broadly enough to include any potentially significant effects occurring away from the immediate project site(s). These may be caused by for example, the dispersion of pollutants, off-site infrastructure requirements, traffic, etc.	rating**
1.4.3	The time horizon of the study is long enough to account for delayed effects	rating
Overall grade for category 1.4 A B C D E F (Note: all criteria marked with ** must be rated A, B or C for the category to be satisfactory, if not, return report to proponent for revision.)		
Comments		

**Review Area 1: Description of the development, the local environment and the baseline conditions.**

1.5	Baseline condition: an adequate description of the affected environment as it is currently, and as it could be expected to develop if the project were not to proceed, is presented.	
1.5.1	The important components of the affected environments are adequately identified and described. The methods and investigation undertaken for this purpose are discussed and are appropriate to the size and complexity of the assessment task. An appropriate amount of field work was done. Uncertainties are indicated.	Rating**
1.5.2	Existing data sources were searched and, where relevant, used. These include local authority records and studies carried out by, or on behalf of, government and private sector organisations.	rating
1.5.3	Local land use and development plans were consulted and other data collected as necessary to assist in the determination of the probable future state of the environment, in the absence of the project, taking into account natural fluctuations and human activities.	
Overall grade for category 1.5. A B C D E F		



(Note: all criteria marked with **must be rated A, B or C for the category to be satisfactory, if not, return report to proponent for revision)
Comments

### Overall Evaluation of Review Area 1

Description of the development, the local environment and the baseline conditions

Overall evaluation of review area 1	A	B	C	D	E	F
Comments						

### Review Area 2: Identification, Analysis and Assessment of Impacts

2.1	Identification of impacts: all potentially significant impacts are identified. Key impact are also identified and the main investigation centred on these.	
2.1.1.	All important issues identified in the EIA terms of reference are included in the report. Deviations and exclusions are adequately accounted for.	Rating **
2.1.2	Direct and indirect impacts are identified using a systematic methodology such as project-specific checklists, matrices, impact networks, expert judgment, extensive consultations. A brief description of the impact identification methods is given along with the rationale for using them.	Rating **
2.1.3	Due attention is paid to environmentally sensitive areas, time delayed or recurring (e.g. seasonal) impacts and to cumulative or systematic effects with existing and participated developments.	rating
2.1.4	Consideration is not limited to effects which will occur under design operating conditions. Where appropriate, impacts which might arise from non - standard operating conditions, or due to accidents, are also include.	rating
2.1.5	All phases of the project are considered e.g. pre-construction, construction, operation and decommissioning.	Rating **
2.1.6	Key impacts were identified and selected for more intense investigation. The scoping methods are described and their use justified.	Rating **
Overall grade for category 2.1      A B C D E F		
(Note: all criteria marked with ** must be rated A, B or C for the category to be satisfactory, if not, return report to proponent for revision.		
Comments		

**Review Area 2: Identification, Analysis and Assessment of Impacts**

2.2	Analysis of impact severity: the likely impacts of the development on the environment are analysed and described in as precise terms as possible	
2.2.1	Impacts are analysed as the deviation from baseline conditions, i.e. the difference between environmental conditions expected if the development were not to proceed and those expected as a consequence of it.	Rating **
2.2.2	The data used to estimate the severity of impacts is sufficient for the task and clearly described. Any gaps in the required data are indicated and accounted for.	Rating **
2.2.3	The methods used to predict impact severity are described and are appropriate to the size and importance of the projected disturbance. The assumption and limitations of the methods are explicitly discussed.	Rating **
2.2.4	Descriptions of impact severity encompass the appropriate characteristics of impact (e.g. magnitude, areas extent, duration, frequency, reversibility, likelihood of occurrence).	rating
2.2.5	Where possible, estimates of impacts are recorded in measurable quantities with ranges and or confidence limits as appropriate. Qualitative descriptions, where necessary, are as fully defined as possible such as minor means not perceptible from more than 100m distance.	rating
Overall grade for category 2.2. A B C D E F (Note: all criteria marked with ** must be related A, B or C for the category to be satisfactory, if not, return		
Comments		

**Review Area 2: Identification, Analysis and Assessment of Impacts**

2.3	Assessment of Impact significance: the expected significance that the project Impacts will have for society are adequately assessed. The sources of quality standards plus the rationale, assumptions and value judgements used in assessing significance are fully described.	
2.3.1	The significance of all impacts which will remain after mitigation are described and clearly distinguished from impact verity.	rating
2.3.2	The significance of Impacts is assessed using appropriate national and international quality standards where available. Explicit account is taken of the values placed on affected environmental features locally, nationally and (where appropriate) internationally.	Rating **
2.3.3	The choice of standards, assumption and value systems used to assess	rating

	significance are justified and the existence of opposing of contrary opinions	
2.3.4	Wherever possible, economic values are attributed to environmental costs and benefits.	rating
2.3.5	Individuals, groups, communities and government agencies affected by the project are clearly identified.	Rating **
Overall grade for category 2, 3    A B C D E F (Note: all criteria marked with ** must be rated A, B or C for the category to be satisfactory, if not, return report to proponent for revision.)		
Comments		

### Overall Evaluation of Review Area 2

Identification, Analysis and Assessment of impacts

Overall evaluation of review area 1	A B C D E F
Comments	

### Review Area 3: Alternatives and Mitigation

3.1	Alternatives; project alternatives are considered. These are outlined, the environmental Implications of each presented and the reasons for their adoption or rejection briefly discussed.	
3.1.1	Alternative sites, processes, designs and operating conditions are considered where these are practicable and available to the developer. The main environmental advantages and disadvantages of these are discussed and the reasons for the final choice given.	Rating **
3.1.2	Where possible, alternative construction strategies (e.g. timing, local versus imported labour) are considered and assessed for their environmental and socio- economic implications.	rating
3.1.3	For public sector proposals, alternative means of achieving project goals are considered (e.g. energy efficiency investments versus dams for energy supply). If not, the report discusses why this was not done.	rating
Overall grade for category 3.1    A B C D E F (note all criteria marked with ** must be rated A, B or C for the category to be satisfactory, if not, return report to proponent for revision.)		
Comments.		

**Review Area 3: Alternatives and Mitigation**

3.2	Scope and effectiveness of mitigation measures: all significant adverse impacts are considered for mitigation. Evidence is presented to show that proposed impact management measures will be appropriate and effective.	
3.2.1	Concerned stakeholders (e.g. individuals, groups, communities, government agencies) have been adequately consulted and their views accounted for in the development of mitigation measures.	Rating **
3.2.2	The mitigation of all significant adverse impacts is considered. Wherever possible, specific mitigation measures are defined in practical terms such as costs.	Rating **
3.2.3	Any residual or unmitigated impacts are discussed and justification offered as to why these impacts should not or cannot be mitigated.	rating
3.2.4	It is clear to what extent the mitigation methods will be effective. Where effectiveness is uncertain or depends on assumptions about operating procedures, climatic conditions, etc. data is introduced to justify the acceptance of these assumptions.	rating
3.2.5	An effective environmental monitoring and management plan is presented to deal with expected; possible but uncertain; and unforeseen impacts caused by the project. Training needs are identified. The costs of the programme are estimated. Developer and government responsibilities are distinguished, reporting and review procedures are specified.	Rating **
Overall grade for category 3.2 A B C D E F (Note: all criteria marked with ** must be rated A, B or C for the category to be satisfactory, if not, return report to proponent for reversion.)		
Comments.		

**Review Area 3: Alternatives and Mitigation**

3.3	Commitment to mitigation: the project proponent clearly expresses a commitment to, and capability of, carrying out the mitigation measures.	rating**
Overall grade for category 3.3. A B D E F (note all criteria marked with ** must be rated A, B or the category to be satisfactory, if not, return report to proponent for revision)		
Comments.		

### Overall Evaluation of Review Areas 3

Alternatives and Mitigation

Overall evaluation of review area 3	A B C D E F
Comments	

### Review Area 4: Public Involvement and Communication

4.1	There were genuine and adequate consultations with concerned project stakeholders to appraise them of the project and its implications and to obtain their views on key issues to be investigated and managed. The scope and results of the public involvement program are adequately documented in the report.	rating **
Overall grade for category 4.1 A B C D E F (note all criteria marked with ** must be rated A, B or C for the category to be satisfactory, if not return report to proponent for revision)		
Comments		

### Review Area 4: Layout

4.2	The layout of the report enables the reader to find and assimilate information easily and quickly. External data sources are acknowledged	
4.2.1	There is an introduction briefly describing the project, the aims of the environmental assessment and how those aims are to be achieved.	Rating **
4.2.2	Information's logically arranged inspections or chapters and the whereabouts of important data is indicated in a table of contents or index. Terms of reference and data used in the assessment are include in appendices. The consulting team members are identified.	rating
4.2.3	When data, conclusions or quality standards from external source are introduced, the original source is acknowledged at that point in the text. A full reference in included in a footnote or in a list of references.	rating
Overall grade for category 4.2 A B C D E F (Note: all criteria marked with ** must be rated A, B or C for the category to be satisfactory, if not, return report to proponent for revision.)		
Comments		

**Review Area 4: Communication**

4.3	Presentation: Care is taken in the presentation of information to make sure that it is accessible to the non-specialist.	rating
4.3.1	Information is comprehensible to the non-specialist. Tables, graphs and other graphics are used as appropriate. Unnecessarily technical or obscure language is avoided. technical terms, acronymic and initials are defined, either when first introduced in the text or in a glossary.	Rating **
4.3.2	The report is presented as an integrated whole. Data presented in appendices is fully discussed in the main body of the text.	rating
Overall grade for category 4.3 A B C D E F (Note: all criteria marked with ** must be rated A, B or C for the category to be satisfactory, if not, return report to proponent for revision)		
Comments.		
4.4	Emphasis: Information presented without bias and receives the emphasis appropriate to the importance in the context of the project.	
4.4.1	Prominence and emphasis is given to potentially significant impacts, both adverse and beneficial, in a balanced manner.	Rating **
4.2.2	The statements is unbiased and does not lobby for any particular point of view.	rating
Overall grade for category 4.4. A B C D E F (Note: all criteria marked with ** must be rated A B or C for the category to be satisfactory, if not return report to proponent for revision)		
Comments		

**Review Area 4: Communication**

4.5	Non-technical summary: There is an adequate non- technical summary outlining the main conclusions and how they were reached.	
4.5.1	There is an adequate non-technical summary of the analysis and main finding of the study. Technical terms, lists of data and detailed explanations of scientific reasoning are avoided.	Rating **
4.5.2	The summary is comprehensive, containing at least a brief description of the project and the environment, and account of the main impacts and mitigation measures to be undertaken by the developer, and a description of any remaining or residual impacts. A brief explanation of the methods be witch information and data were obtained and an indication of the confidence that	rating

	can be placed in them is also included.	
<p>Overall grade for category 4.5. A B D E F</p> <p>(Note: all criteria marked with ** must be rated A, B or C for the category to be satisfactory, if not, return report to proponent for revision.</p>		
Comments		

**Overall Evaluation of Review Area 4**

Communication

Overall evaluation of review area 4	A B C D E F
Comments	

### 3.5 GENERAL CHECKLIST OF ENVIRONMENTAL CHARACTERISTICS

This checklist identifies environmental characteristics which may potentially be affected by development actions, or which could place significant constraints on a proposed development. The effect of a development on an environmental attribute can be either positive or negative.

While the checklist has endeavored to include the major characteristics and linkages that should be considered by the environmental analyst or planner, it is not exhaustive and the user should be aware that other characteristics, significant to a particular situation, might occur. Assistance of experts may be to assess certain potential impacts and to identify unlisted characteristics that may be affected in specific cases. It is important to stress that cumulative effects should always be borne in mind.

The following environmental characteristics may assist in understanding the important aspects to consider when describing the proposed undertaking with its implications on the environmental, socio-economic and cultural context in the efforts to integrate development and environmental management.

#### 1. Physical characteristics of the site and its surroundings

Could the proposed development have a significant impact on, or be constrained by, any of the following?

##### Land

- (i) Nature of the surface and topography (altitude, exposure, slope, drainage)
- (ii) The nature of substrata (e.g. Rock), geology
- (iii) Nature of soil and soil characteristics
- (iv) Unstable bedrock or faultiness
- (v) Seismic activity
- (vi) Water logging of depressions
- (vii) The binding or bonding of soils
- (viii) Stability of site
- (ix) Surface subsidence
- (x) Compressive strength of soils
- (xi) Rates of erosion or siltation by wind or water
- (xii) The potential of soils to be used for commercial purposes
- (xiii) Access to mineral deposits
- (xiv) The availability of or access to construction materials such as rock and gravel
- (xv) The availability of topsoil or spoil material
- (xvi) Unique geological or physical features
- (xvii) Prominent landscape features
- (xviii) Existing physical degradation of the local environment



## Freshwater Systems

- (i) Streams or river channels
- (ii) River flow
- (iii) Natural drainage patterns
- (iv) Engineered drainage patterns
- (v) Drainage limitations
- (vi) The water - table
- (vii) Run - off as a result of the hardening of surfaces, or loss of the sponge effect of vegetation
- (viii) Ability to absorb run off
- (ix) Changes to flood plains
- (x) The quality or quantity of surface water, ground water
- (xi) Public water supplies
- (xii) Conservation or recreational value of rivers, streams, lakes, wetlands, dams or islands
- (xiii) Threats to hydrological functioning through existing or altered:
  - pollution
  - turbidity
  - salinity
  - chemical processes or nutrient balance
  - changes in sediment flows and siltation rates
  - canalisation
  - impoundment construction
  - water extraction

## Marine and estuarine systems

- (i) Prominent coastal features such as coastal cliffs
- (ii) Existing or altered processes such as:
  - wave and tidal action
  - deposition/removal of sand
  - sedimentation rates and patterns
  - turbidity
  - salinity
  - chemical processes or nutrient balance
- (iii) Rocky and sandy shorelines
- (iv) The sea bed and subtidal areas
- (v) Coastal islands
- (vi) Functioning of estuarine systems
- (vii) River mouths

## Climate

- (i) Wind strength, direction and frequency
- (ii) Frequency of flash - floods
- (iii) Rainfall patterns
- (iv) Fluctuations in temperature or humidity
- (v) Intensity of inversions
- (vi) Dispersal or influx of pollutants
- (vii) Global warming and sea - level rise

## 2. Ecological characteristics of the site and its surroundings

Could the proposed development have a significant impact upon or be constrained by any of the following?

### Vegetation

- (i) survival of rare or endangered plant species
- (ii) Diversity of plant communities
- (iii) Vegetation communities of conservation or scientific importance
- (iv) Conservation of vegetation communities or particular recreational value
- (v) The introduction or spread of invasive alien seeds and plants
- (vi) Natural replenishment of existing species
- (vii) Frequency of use of off - road vehicles
- (viii) Extent of trampling of special areas of vegetation
- (ix) Firewood collection
- (x) Overgrazing
- (xi) Over exploitation
- (xii) Genetically modified organisms

### Animals

- (i) survival of rare or endangered animals
- (ii) diversity of animal communities
- (iii) animal communities of particular scientific, conservation or educational value
- (iv) natural migration of species
- (v) survival of animal communities of particular recreational value
- (vi) non - resident or migrant species
- (vii) alien species (including invasive and domestic species)
- (viii) threat to survival of animal communities due to:
  - -poaching
  - -frequency of wild fires

- -frequency of use of off - road vehicles
  - -intrusion of roads and fencing
  - -over exploitation
- (ix) genetically modified organisms
- (x) breeding activities of animals
- (xi) behaviour of animals (e.g. predator – prey relationships, nesting)
- (xii) critical habitats of animals

### **to be clarified. 3. Natural and semi – natural areas/communities/habitats**

- (i) local, regional or national importance of communities living in natural areas such as economic, scientific, conservation and education
- (ii) compatibility of the development with the natural communities
- (iii) appropriateness of conservation methods to be employed
- (iv) threat to ecological functioning of natural communities due to:
- physical destruction of the habitat
  - reduction of the effective size of the community
  - quality and flow of ground water
  - quality of standing or flowing water
  - oxygen content of the water
  - salinity
  - turbidity
  - flow rate
  - temperature
  - levels of chemical and other forms of pollution
  - toxins such as effluents or poisons
  - siltation patterns
  - air quality
  - levels of dust pollution and deposition
  - availability of food
  - the construction of access routes, roads and pathways
  - recreational pressure
  - secondary or cumulative impacts affecting other natural communities
  - presence or introduction of invasive alien species
  - presence or introduction of Genetically Modified Organisms
  - rehabilitation potential
  - predator - prey relationships
  - barriers to animal movement or migration

- altered fire regime

#### **4. Current and potential land use and landscape character**

Could the proposed development have significant impact on, or be constrained by, any of the following?

##### **General considerations applicable to all development proposals**

- (i) Compatibility of land uses within the area
- (ii) Aesthetic quality of the landscape
- (iii) Definition of the place within the area
- (iv) Character of the area
- (v) Compatibility with the scale of developments in the area
- (vi) Compatibility with building materials used in the area
- (vii) Preservation of scenic views and valued features
- (viii) Revitalization of run-down areas
- (ix) Landscaping plans and/or site restoration proposals
- (x) Need for buffer zones to allow for natural processes such as coastal erosion, windblown sand and changes in river channels
- (xi) Political considerations such as land claims and historical rights
- (xii) Legal considerations such as servitude's and rights of way

##### **URBAN OPEN SPACE, PROTECTED AND RECREATIONAL AREAS**

- (i) urban open space systems or recreational areas
- (ii) Natural features such as streams and ridges
- (iii) Natural heritage sites
- (iv) Change in use or intensity of use
- (v) Pressures on recreational facilities and open space systems
- (vi) Enhancement or linkage of facilities and open space systems
- (vii) Rehabilitation of disturbed or degraded sites
- (viii) Improved public amenity
- (ix) Potential for harbouring vagrants and criminals
- (x) Park extensions

##### **RESIDENTIAL AREAS**

- (i) Need to displace people or affected existing housing
- (ii) Lifestyle, neighbourhood character or stability
- (iii) Quality of life within the residential area
- (iv) Effect of overshadowing causing loss of sunlight hours
- (v) Compatibility with the surrounding residential developments

- (vi) Community cohesion
- (vii) The need of the elderly, handicapped or other special interest group
- (viii) Community safety aspects such as lighting, open areas and policing
- (ix) Adequacy of infrastructure to service the area (see also section 7)
- (x) Access and movement patterns
- (xi) Change in the volume of through traffic
- (xii) Property values and local tax base

### **COMMERCIAL AREAS**

- (i) character of urban centre
- (ii) Volume of traffic and adequacy of vehicular access
- (iii) Inappropriate siting
- (iv) Provision of parking
- (v) Adequacy of pedestrian walkways
- (vi) Conflicts between vehicular and pedestrian traffic
- (vii) Safety of the area and surveillance
- (viii) The rate of decay or change in character of the area

### **INDUSTRIAL AREAS**

- (i) use of high-potential farmland
- (ii) Use of areas available for commercial forests
- (iii) A need for buffer zones or greenbelts to contain urban sprawl
- (iv) Availability of water
- (v) Pollution levels of air and local water supplies by fertilizers, pesticides or feedlots
- (vi) Disease control activities such as crop spraying
- (vii) Levels of toxins, dust and bad smells in the air
- (viii) Rate of soil erosion and sedimentation
- (ix) Bush encroachment
- (x) Damaged land due to overgrazing or bad farming methods
- (xi) Spread of invasive alien plants
- (xii) Revision of housing and educational facilities

## **5. Cultural resources**

Could the proposed development have a significant impact on, or be constrained by, any of the following?

- (i) Structure and sites of architectural, cultural or historic heritage
- (ii) Sites of archaeological or palaeontological importance

- (iii) Special attraction of local sites, traditions or events, e.g. Traditional hunting practices and other resource use activities
- (iv) Sites or areas of religious or spiritual significance
- (v) The integrity of cultural resources
- (vi) Encroachment
- (vii) Tourism impact on traditional values and culture

## **6. Socio-economic characteristics of the affected public**

Could the proposed development have a significant impact, or be constrained by, any of the following?

### **Demographic aspects**

- (i) Growth rate of the local population
- (ii) Location, distribution or density of the population
- (iii) Existing age or gender composition of the population
- (iv) Existing biographical composition of the population
- (v) Existing migration movements and inflow of tourists

### **Economic and employment status of the affected social groups**

- (i) Economic base of the area
- (ii) Distribution income
- (iii) Local industry
- (iv) Rate and scale of employment growth
- (v) Labour needs and spare labour capacity of the area
- (vi) Movement of labour away from existing employment in the area
- (vii) Non-local labour remaining in the area after completion of the development
- (viii) Pressure placed on particular skills, age range or gender needs
- (ix) Job opportunities for school-leavers
- (x) Short-and long-term unemployment trends
- (xi) Distribution of costs and benefits to the community

### **Welfare profile**

- (i) Incidence of crime, drug abuse or violence
- (ii) Extent of homelessness and overcrowding
- (iii) Adequacy of services and support systems
- (iv) Quality of life (see also section 6 and 7)

### **Health profile**

- (i) Availability of clinics/health services
- (ii) Incidence of disease

- (iii) Incidence of mental illness
- (iv) Threats to health from pollution (see also section 9 on pollution)

### **Cultural profile**

- (i) Existing lifestyles, household composition and family network
- (ii) Religious and cultural attitudes, outlooks and expectations of the local population
- (iii) Cultural or lifestyle diversity
- (iv) Cultural or lifestyle stability

## **7. INFRASTRUCTURE SERVICES**

Could the proposed development have a significant impact on, or be constrained by, any of the following?

### **Energy supply**

- (i) The demand for power and its effect on peak and base loads
- (ii) Planned provision of power for the area
- (iii) Power generation and associated infrastructure
- (iv) The need for new transmission lines
- (v) The adequacy of emergency power facilities
- (vi) The danger to the local community and the environment or processing units in the case of a major power failure
- (vii) Availability of alternative fuel sources

### **Water**

- (i) Water rights
- (ii) Wasteful or excessive water requirements
- (iii) Planned provision for water supply to the area
- (iv) Adequacy and reliability of water supply
- (v) Adequacy of ground water reserves
- (vi) Need for additional abstraction schemes or construction of new supply reservoirs
- (vii) Need for additional abstraction
- (viii) Need for additional abstraction schemes or construction of new supply reservoirs
- (ix) Need for additional purification systems
- (x) Problems needed for inappropriately sized or located impoundment's
- (xi) Need for new pipelines
- (xii) Danger to local people and industry in the event of a major water supply failure

### **Waste management**

- (i) efficiency and capacity of existing waste management facilities

- (ii) Extent of contribution to centralized waste-processing facilities
- (iii) Ability to provide necessary facilities
- (iv) Need for new pipelines
- (v) Risk associated with waste transport
- (vi) Adequacy of emergency waste disposal facilities
- (vii) Risk to the community and the local environment should the facility break - down
- (viii) Hazard of ground water pollution
- (ix) Danger of rodents and scavengers at waste sites
- (x) Potential for windblown or waterborne refuse pollution
- (xi) Visual and smell effects of waste sites and treatment works
- (xii) Hazard of birds to air traffic near sewage ponds and landfill sites
- (xiii) Utilization of treated waste water and recycled materials
- (xiv) On-site waste management potential

### **Transport networks**

- (i) Existing transport systems
- (ii) Present patterns of circulation or movement of people and/of goods
- (iii) Generation of more private and public traffic
- (iv) Adequacy of existing road network
- (v) Adequacy of existing parking facilities
- (vi) Adequacy of existing traffic management schemes
- (vii) Need for and desirability of additional round schemes over and above those which have been planned
- (viii) Temporary access roads used for the development
- (ix) Viability of the rail services
- (x) Rail capacity
- (xi) Need for additional rail links
- (xii) Adequacy of harbour facilities
- (xiii) Need for expanded harbour and related facilities
- (xiv) Adequacy of air transport facilities
- (xv) Ability of commerce and social facilities to locate along route

### **Education**

- (i) Demand for specific types of technical skills training
- (ii) Demand for specific types of industrial training
- (iii) Adequacy of existing technical institutions
- (iv) Adequacy of nursery, junior and secondary education facilities
- (v) Pre-school facilities



## Housing

- (i) Property values and levels of rates
- (ii) Potential conflict over land use
- (iii) Availability of housing stock
- (iv) Need to release additional land for housing developments
- (v) Acceptability of such land release
- (vi) Adequacy of infrastructure for further housing development
- (vii) Ability of private or local authority to provide housing
- (viii) Compatibility of planned development with existing housing
- (ix) Location for suitable housing sites
- (x) Sites suitable for construction camps
- (xi) Standard of provision of facilities required by authority
- (xii) Sources of building materials
- (xiii) Design and layout of site facilities and maintenance
- (xiv) Use to which construction camp may be put after termination of the construction period

## Telecommunication

- (i) Existing telecommunication network
- (ii) Installation of additional telecommunication transmission lines or facilities

## Financial implications

- (i) Job creation and economic opportunity
- (ii) Enhancement of regional self-sufficiency
- (iv) Financial programmes of responsible authority
- (v) Comparative wage rates between those of existing employment in the local area and those offered by the new development
- (vi) Movement away from existing employment due to higher wage rates offered
- (vii) Insurance rates
- (viii) Cost implications of the supply of energy, water, water management, transportation, education, housing and telecommunication
- (ix) Incorporation of social costs such as Pollution as private costs
- (x) Adherence to "polluter pays" principle
- (xi) Resource economic assessment of alternative options

## 8. Social and community services and facilities

Could the proposed development have a significant impact on, or be constrained by, any of the following?

### Health service facilities

- (i) Adequacy of temporary facilities during construction phase of developments

- (ii) Adequacy of on-site health facilities
- (iii) Adequacy of facilities for primary health care such as screening facilities for tuberculosis or aids, family planning advice
- (iv) Adequacy of the existing health services to cope with increased population
- (v) Projected provision of health service facilities
- (vi) Need for additional facilities

### **Emergency services**

- (i) Adequacy of existing emergency services such as fire and ambulance services
- (ii) Projected provision of services to meet increased demand
- (iii) Need for additional emergency service
- (iv) Adequacy of the emergency and safety service provided by the developer
- (v) Ability of the local resources to deal with emergencies

### **Recreational facilities**

Adequacy of existing facilities

- (i) Projected provision of facilities to meet increased demand
- (ii) Need for additional facilities
- (iii) Recreational and service facilities in the workplace

## **9. The nature and level of present and future environmental pollution**

Could the proposed development have a significant impact on, or be constrained by, any of the following?

### **Air pollution**

- (i) existing levels of atmospheric pollution
- (ii) The nature of air pollution, such as ozone -depleting gases, acidic compounds and toxic substances
- (iii) Extent of the local build -up pollutants due to inversions
- (iv) Compounding of effects with existing pollutants or other chemicals in the atmosphere such as Photochemical smog production
- (v) Quantity and type of particulate matter produced with reference to size, composition and chemical Stability
- (vi) Production of offensive odours
- (vii) Pollution to adjacent sensitive areas
- (viii) Effects on human health, crops, wildlife, livestock and other potentially affected organisms
- (ix) Effects on stonework, buildings or works of art
- (x) Dust levels

### **Water pollution**

- (i) Level of water pollution
- (ii) High localised levels of pollution
- (iii) Pollution of surface waters from polluted underground water
- (iv) The concentration of pollutants due to variations of water flow
- (v) Localised pollution build-up through changes in salinity gradients and or current movements
- (vi) Effective dispersal mechanisms
- (vii) Salinization of fresh waters
- (viii) Synergistic or compounding effects with existing pollutants
- (ix) Production of offensive odours
- (x) Effect of treated or untreated effluent on the flora and fauna of river, lake, canal, estuary or coastal waters
- (xi) Effects of dependent natural communities through changes in aquatic fauna and flora
- (xii) Effect on irrigation schemes
- (xiii) Effect on recreational activities

### **Noise, vibration and lightening**

- (i) Increase in ambient noise, vibration or illumination levels
- (ii) Length of time here will be noise, vibration of “creeping” ambient noise levels
- (iii) Peace and quietness of residential areas either during day-or night-time
- (iv) Change in the quality of life due to artificial lighting
- (v) Functioning of school, hospitals and old people’s homes or informal recreational areas
- (vi) The need for individual protection against noise
- (vii) Levels of annoyance and discomfort due to vibration caused by such activities as blasting and pile -driving
- (viii) Structural damage caused to buildings by vibration
- (ix) Effect on wildlife of nature resources, sites of special scientific interest, or high quality habitat of local significance
- (x) Reduction of wilderness quality in declared wilderness areas

### **Visual pollution**

- (i) Existing level of visual pollution
- (ii) Reduction in aesthetic quality of the environment through:
  - -sign-boards and advertising;
  - -overhead transmission cables and telephone wires; and
  - -unsightly or inappropriate walls, buildings, roads or other installations

### **Solid or liquid waste and by-product disposal**

- (i) Existing or proposed water disposal plans
- (ii) Choice of alternative means of disposal

- (iii) Alternative treatment technologies
- (iv) Choice of disposal sites
- (v) Biological and chemical characteristics of the leaches generated within the disposal site
- (vi) The quality of leachates produced
- (vii) Measures to reduce or treat leachates
- (viii) Potential pollution of nearby surface waters
- (ix) Potential groundwater pollution
- (x) Waste minimisation potential of process
- (xi) Containment and treatment of wastes at site of generation
- (xii) Final disposal option
- (xiii) Gas emissions from landfill
- (xiv) Allowance for physical and chemical variation in waste generated
- (xv) Visual intrusion caused by waste disposal plant
- (xvi) Potential health hazard to nearby residents
- (xvii) Suitability of traffic to transport the waste materials
- (xviii) Volume of traffic to transport the waste materials
- (xix) Proposed after-use of the site and its management

## 10. Risk and hazard

Could the proposed development have a significant impact on, or be constrained by, the following?

- (i) The level and identity of hazard to the public
- (ii) Probability of occurrence
- (iii) Extent of effect-local, regional or global
- (iv) Standards required for process equipment in chemical and processing industries:
  - Safety and design reviews
  - Safety audits
  - Hazard and operability reviews
  - Failure mode and effect analysis
- (v) Workers' safety or degree of risk
- (vi) The level of risk and hazard for habitats, ecotones and ecosystem functioning, and other living organisms

## 11. Health and safety

Could the proposed development have a significant impact on, or be constrained by, any of the following?

- (i) Effects in the workplace through;
  - dust, fume and particulate matter
  - odours

- gases
  - vapours
  - use of dangerous chemicals
  - lighting
  - heat
  - cold
  - noise
  - vibration
  - radiation
  - protective clothing and equipment
  - access to recreational facilities
  - risk of workplace accidents
  - risk of major disasters involving multiple loss of life or injury
  - availability of services such as factory-based health services, canteens, change-rooms, toilets
- (ii) Effects in the surrounding areas through:
- dust, vapours
  - fumes
  - particulate matter and the use of dangerous chemicals
  - noise
  - vibration
  - radiation, lightening
  - odours
  - gaseous emissions
  - risk of explosion or major leaks of toxic liquid or gases
  - solid waste disposal techniques
  - risk of major disasters involving explosions or major leaks of toxic liquids or gases
  - solid waste disposal techniques
  - liquid waste effluent and disposal

## 12. Policy consideration

Could the proposed development have a significant impact upon or be constrained by any of the following:

- (i) National Environmental policy
- (ii) Policies and Strategies related to poverty reduction initiatives
- (iii) Vision 2025
- (iv) Policies related to Natural Resources
- (v) General and specific management plans

- (vi) Master plans and interim plans for urban and rural areas
- (vii) Recognized management zoning plans
- (viii) National legislation and laws
- (ix) Local authority by-laws and legislation.

### **13. Awareness and publicity**

Could the proposed development have a significant impact upon, or be constrained by any of the following:

- (i) Publicity of the undertaking
- (ii) Awareness of communities
- (iii) Involvement neighbouring communities and non-government organizations
- (iv) Environmental education objectives
- (v) Promotion of the concept of sustainable lifestyle
- (vi) Understanding of key environmental issues and options such as Poverty, population growth etc
- (vii) Lobbying for a national environmental policy and procedure to integrate development and environmental management

### **14. Cumulative and synergistic effects**

Could the proposed development have a significant impact on, or be constrained by, any of the following:

- (i) The ability of the natural and social environments to assimilate cumulative stresses placed on them
- (ii) The likelihood of negative synergistic effects
- (iii) Existing or further development rights because of precedent being set.

### **15. Enhancement of positive characteristics**

Could the proposed development be modified to enhance the positive aspects of the following:

- Any of the characteristics listed in points 1 – 13 above?

### 3.6 OBLIGATIONS ROLES OF PARTIES IN EIA PROCESS

#### The Proponent;

- (i) Consult the reviewing authority and the stakeholders as early as possible and submit a project brief to the reviewing authority
- (ii) Take responsibility for preparing the statement required for assessment of a proposal
- (iii) Take full responsibility to ensure public participation in the EIA process
- (iv) Incorporate environmental factors fully into the proposal, including a proper examination of reasonable alternatives
- (v) Identification of other pasts past, present and foreseeable future project in the area that may be impacted upon by or will impact on the proposed project
- (vi) Take the opportunity offered by the EIA process to improve the proposal
- (vii) Make commitments to avoid adverse environmental impacts where possible otherwise take necessary steps to address such impacts through Environmental Management Plans
- (viii) Modify environmental management practices in accordance with environmental monitoring results.
- (ix) Identify and implement responsible corporate environmental policies, strategies and management practice, with periodic review

#### The public;

- (i) Participate in the early stages of the process and evaluation of proposals through offering advice, expressing opinions, providing local knowledge, proposing alternatives and commenting on how a proposal might be changed to better and protect the environment
- (ii) Take a responsible approach to opportunities for public participation in the EIA process, including the seeking out of the objective information about issues of concern

#### Crosscheck with EMA. The Reviewing Authority;

- (i) Provide clear guidance on the types of proposals likely to be subjected to environmental impact assessment and on levels of assessment
- (ii) Provide guidance to all participants in the EIA process on the criteria for environmental acceptability of potential impacts including such things as: the principles of ecologically sustainable development, maintenance of environmental health, relevant local and national standards and guidelines, codes of practice and regulations
- (iii) Seek and promote public participation throughout the process
- (iv) Ensure that the local and cumulative effects of using or altering community environmental assets such as air, water, amenity , as well as and public goods receive explicit consideration.
- (v) Report publicly on assessment of proposals.
- (vi) Ensure predicted environmental impacts are monitored, the results assessed by a nominated responsible authority and feedback provided to improve continuing environmental management of proposals.

- (vii) Ensure that educational opportunities inherent in the EIA process are actively pursued.
- (viii) Review EIS and submit recommendations to the Minister for approval
- (ix) Supervise monitoring and auditing processes

**Crsschk with EMA. The approving authority;**

- (i) Approve Environmental Impact Assessment Guidelines;
- (ii) Prepare and review environmental legislation at National level;
- (iii) Approve Environmental Impact Statements;
- (iv) Approve Strategic Environmental Impact Statements;
- (v) Approve reference standards and indicators;
- (vi) Periodically analyze environmental appeals and lessons learned;

**ROLES OF OTHER STAKEHOLDERS IN THE EIA PROGRESS**

**Sectoral Ministries and Local Level Authorities**

1. Provide relevant Policies, regulations legislation etc. and other relevant information to proponent
2. Collaborate in evaluation of registration forms and project briefs
3. Participate in the identification of key issues in the scoping process
4. Collaborate in the review of the TOR, consultations during EIA study, internal review for
5. comments on the EIS
6. Participate in the review mechanism put in place by the reviewing authority as necessary
7. Undertake Monitoring of the project implementation



### 3.7 GUIDANCE FOR COMPLETING AN ENVIRONMENTAL ASSESSMENT REGISTRATION FORM

The Environmental Registration Form is designed to provide enough relevant information to enable an appropriate level of assessment for a proposal. Failure to provide detailed information in a comprehensive manner may delay the assessment process.

It is not expected that this form will be appropriate for all purposes and, depending on the nature of the proposal, a detailed document may be necessary in addition to this form.

#### **Proposal:**

A simple, brief description of the proposal or proposed undertaking is required and must include: quantities of raw materials required; input process, end results, output quantities and timing.

Include diagram.

#### **Location:**

A map/site plan is essential.

It should indicate the geographic co-ordinates of the site elevation and slope, any nearby area of environmental significance such as proposed or declared reserves, water courses and wetlands as well as adjacent land uses, including the nearest homes or areas zoned residential.

#### **Services:**

Details of water supply, storm water drainage, power corridors, access to and impact on roads and transport can all be of significance and should be noted where relevant.

#### **Environmental Impact:**

Criteria for assessing a project and setting a level of assessment are:

- (i) The character of the receiving environment
- (ii) The potential impact of the proposal and confidence of the predicting impacts
- (iii) Resilience of the environment to cope with the change
- (iv) The technology to be used
- (v) Plans, policies or procedures which influence the land use changes
- (vi) Degree of public interest such as concerns of the general public
- (vii) Any other relevant factors to the particular undertaking.

The following potential environmental impacts may be relevant:

- Effects on geomorphology, land stability and landscape
- Effects on drainage and water quality (surface and ground)
- Effects on biota

- Effects on access and transport systems
- Effects on existing services including power, water, and telephone
- Effects on community facilities
- Effects on existing contingency plans for safety and emergency services
- Effects on emissions (gas, dust, noise and heat)
- Management of solid and liquid wastes and storm water
- Impact on adjacent land uses including any conservation and recreation aspects
- Impact of construction and operational activities
- Visual impact
- Socio economic and cultural impact

### 3.8 LIST OF SOME RELEVANT AUTHORITIES TO BE CONSULTED DURING THE EIA PROCESSES

#### Consultations before the granting of permission:

Before submitting the EIS to Minister responsible for Environment, shall consult the authority or person mentioned in relation to that category below.

S/N	Description of development	Consultee
1	Development likely to affect land in cities, municipalities and Towns/Urban areas	The Urban planning authorities concerned
2	Development likely to affect rural land, other than land in National Parks, conservation land, and protected land	The local authorities concerned
3	Development likely to affect land in National Parks, conservation authorities and reserve land	The Ministry of Natural resources and Tourism, Tanzania National Parks authority, and Conservation Area Authorities.
4	Development involving the manufacture, processing keeping or use of hazardous substance in such circumstances that there will at any one time be or is likely to be a notifiable quantity of such substance in , on, or under any land	The Ministry of Health, and the Chief Government Chemist
5	Development likely to result in a material increase in the volume or material change in the character of traffic.	The Ministry of Transport and communication , Ministry of Home Affairs.
6	Development likely to result in a material increase in the volume or material change in the character of traffic entering or leaving a classified or proposed road	The Ministry of Works, Tanzania Roads Authority (TANROADS), Ministry of Home Affairs.
7	Development likely to prejudice the improvement or construction of a classified or proposed road	The Ministry of Works, TANROADS
8	Development involving the formation, laying out or alteration of any means of access to a highway (other than a trunk road)	The local Authority concerned
9	Development involving or including mining operations	The Ministry of Energy and Minerals.
10	Development of land in Urban Authorities involving the demolition in whole or part or the material alteration of a listed building	The Ministry of Natural Resources and Tourism, The Urban Authority concerned
11	Development involving the carrying out of works or	The Ministry of Water and Livestock

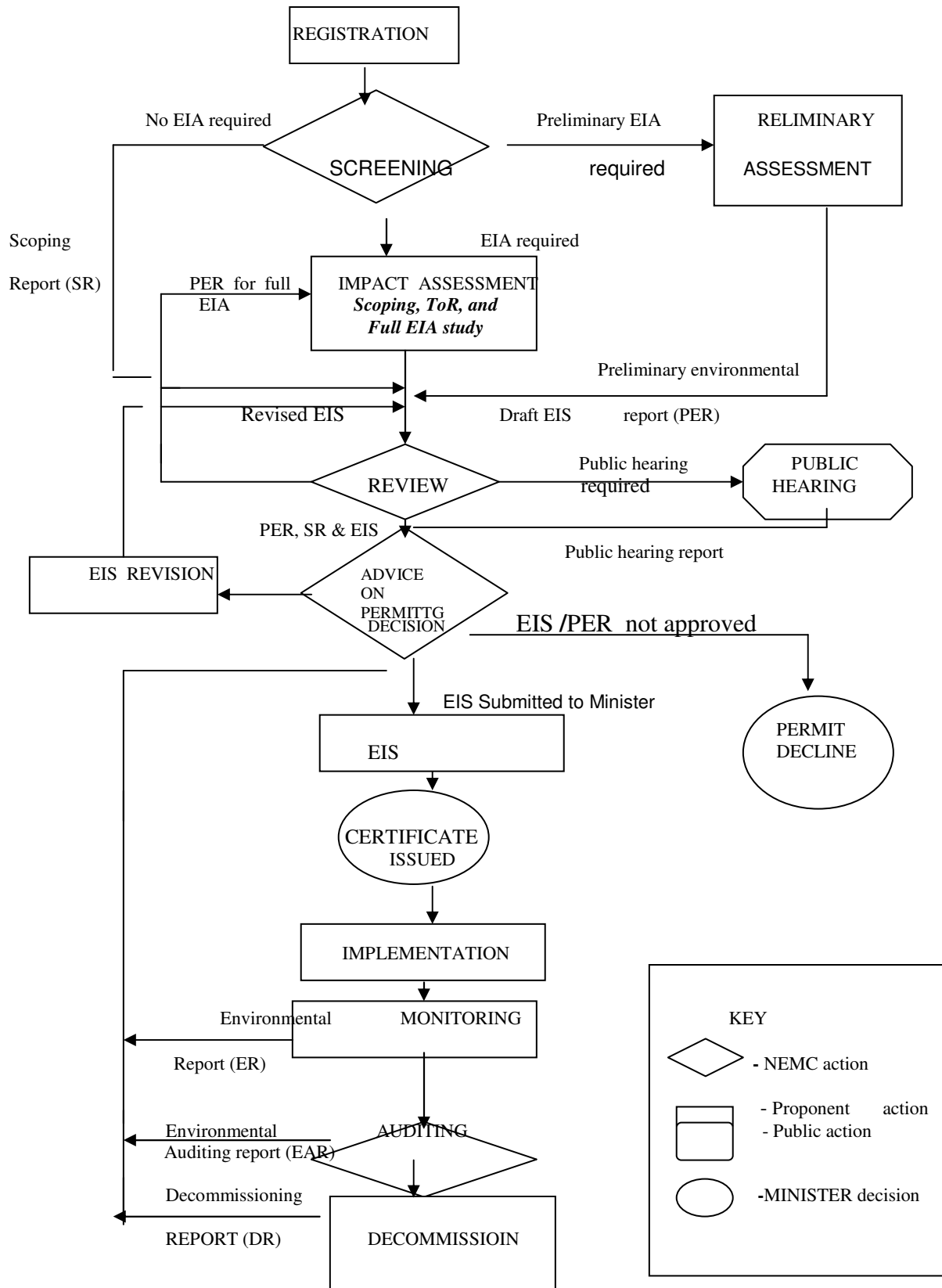
	operations in the bed of or on the banks of a river or stream	Development, The local Authority concerned
12	Development for the purpose of refining or storing mineral oils and their derivatives	The Ministry of Energy and Minerals.
13	Development involving the use of land for the deposit of refuse or waste	Urban Authorities concerned in case of urban land or the Local Authorities concerned in case of rural land
14	Development relating to retention, treatment or disposal of sewage, slurry or sludge (other than the laying of sewers, the construction of pump houses in a line of sewers, the construction of septic tanks and cesspools servicing single buildings in which no more than ten people will normally reside, work or congregate, and works ancillary thereto)	The local authorities concerned, and the Ministry of Water, and Livestock Development
15	Development relating to the use of land as a cemetery	The Local Authority Concerned
16	Development in the area of special scientific interest	The Ministry of Science and Technology, Ministry of Health, The National Scientific Council
17	Development which is not for agricultural purposes and is not in accordance with the provisions of a development plan and involves: (i) Loss of a substantial amount of agricultural land which is for the time being used ( or was last used) for agricultural purposes; or (ii) Loss of a substantial amount of agricultural land which is for the time being used ( or was last used) for agricultural purposes, in circumstances in which then development is likely to lead to a further substantial loss of agricultural land	The Ministry of Lands and Human Settlements, The local authority concerned , The Ministry of Agriculture and Food, and The Land use Planning Commission
18	Development within 250 metres of land which ; is or has, or at any time in 30 years before the relevant application been used for the deposit of refuse or waste.	The Local Authority concerned, and the Ministry of Health

**Note:**

- (i) *The National Environment Management Council* may require the proponent or his consultants to consult with the National Consultee(s) or any specific person thereto as it may deem appropriate.

- (ii) *The National Environment Management Council* shall also make enough consultations with relevant National Consultee(s) before advising the Minister for Environment on whether or not to grant a Environmental Permit

**3.9 EIA PROCEDURE IN TANZANIA**



**3.10 FLOW CHART ILLUSTRATING MAIN PROCEDURES IN SUBMISSION OF ENVIRONMENTAL IMPACT STATEMENT TO NEMC IN CONJUNCTION WITH APPLICATION FOR PROJECT APPROVAL**

