Introduction Course on Environmental Impact Assessment in Tanzania

Resource Handbook

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Foreword

Many changes have taken place in Tanzania during the last decade. Among these changes is the programme of economic reform and liberalisation which is attracting a host of new investments into this country. Some of the major investments to-date and those in the pipeline include:

- The Kilombero Valley Hardwood Project;
- Songo Songo Gas Development Project;
- The Lower Kihansi Hydropower project;
- The Rufiji Delta Prawn Farming Project;
- Tourism infrastructure development in protected areas; and,
- Mining projects in Bulyankulu and others.

If Tanzania is to maximise the benefits from such developments, and avoid incurring unforeseen costs, then the careful consideration of their social and environmental implications will be required. Decisions on development activities can only be sound and rational if they are made with full understanding of their environmental impacts, and that any negative impacts are avoided or reduced through mitigation measures. Environmental impact assessment (EIA) of projects and programmes is an important tool to achieve this. Also, in order for decision-makers to make the right and sound socio-economic decisions on proposed projects or programmes, they need guidance and support from regulatory agencies who review and control the quality of EIAs. Reviewers provide the necessary information on the quality and adequacy of EIAs. It is this information that provides the basis for decision-making.

Measures to guide the various development efforts have so far concentrated on the development of policy and legislative frameworks. These include: a National Environmental Policy and Action Plan; the development of a National Conservation Strategy for Sustainable Development; and a new land policy. These and many other environment-related sector policies, institutional and legislative frameworks also emphasise the need and importance of environmental impact assessment.

Whilst EIA is now applied routinely to aid-funded development projects, Tanzania lacks adequate numbers and quality of expertise for its implementation. The need for increased efforts and areas for immediate action in EIA capacity building have been clearly stated in the Communiqué of the 1995 High Level Ministerial meeting on EIA in Africa which was held in Durban with the participation of Tanzania. This was also recently echoed by the stakeholders and participants of the Nairobi workshop who emphasized the need for EIA capacity building to support sustainable economic growth in Sub-Saharan Africa through integration of its principles and practice in development plans and implementation of activities particularly for key socio-economic sectors where current and future development will concentrate.

The rapid changes in national economic policy mentioned above, add urgency to the need for improvements in domestic environmental assessment capability. To be effective, EIA training needs to be tailored specifically to national context in which it is to be delivered. Based on this the Institute of Resource Assessment (IRA) and the International Institute for Environment and Development (IIED) conducted a needs assessment for EIA training in Tanzania and recommended short and medium term training.

After identifying training as an important entry-point for EIA development in Tanzania, it was realised that there was a need for high quality and widely available locally developed training materials. These should include locally based examples, exercises, overheads and case studies which would be more relevant than foreign examples of EIA. Thus, the Government of Tanzania supports and encourages these EIA capacity building initiatives as a basis for providing a strong base for EIA management and practice in the country. Success in this endeavour will depend on the co-operation between the Government and the IRA, as well as other institutions within and outside the country.

It is recognised that development of future strategies for EIA training in Tanzania may be constrained by the current lack of EIA national policy, guidelines and standards. Efforts are being made to ensure that the EIA policy, national guidelines and standards which are currently at different stages of preparation are completed and approved by the Government as soon as possible.

There is also need to recognise that the success of these EIA capacity building initiatives will be dependent upon putting in place current national policies both at macro and sectoral levels, which the Government of Tanzania has been undertaking within the overall framework of the on-going socio-economic and political reforms countrywide. Of more significance, in order to attain the objectives of EIA, we need to create an appropriate institutional and legal framework for environmental management and planning. In this regard, the Office of the Vice President in collaboration with other stakeholders is currently carrying out a study on the institutional and legal framework for environmental management in Tanzania.

I am confident that this introductory training and resource handbook will be successful in encouraging a range of approaches to the important task of developing the skills and expertise required to manage the EIA process in this country.

Peter J. Ngumbulu
Principal Secretary
Vice President's Office

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Authorship and Acknowledgements

The authors of this handbook are Raphael B.B. Mwalyosi (Institute of Resource Assessment), Ross Hughes (International Institute for Environment and Development) and David Howlett (Development and Project Planning Centre, University of Bradford).

This project has been undertaken in collaboration with the National Environmental Management Council (NEMC) and the Division of Environment (DoE), Government of Tanzania.

The development of this handbook and course has involved discussions with a wide variety of organisations and individuals within Tanzania. Specific suggestions and contributions to this handbook have come from: Bryan Spooner (Consultant); Hussein Sosovele (IRA); Idris S. Kikula (IRA); Sitna Mohamed (IRA); Clive George (EIAC); Chris Wood (EIAC); and, Barry Dalal-Clayton (IIED). Several publications were also used as general sources for ideas on training materials. The authors and editor have taken care to ensure that acknowledgments to these sources are contained in the text. However, there maybe instances of omissions in such acknowledgments for which the authors bear responsibility, but for which neither credit nor copyright is claimed.

The Danish International Development Agency (DANIDA) kindly provided financial support for this initiative and development of this training handbook. Further the Department for International Development (DFID) through the British Council also funded a series of training courses during which this handbook was tested and refined.

Raphael Mwalyosi ***Ross Hughes*** ***David Howlett***

EIA training courses

BACKGROUND

This handbook is one result of a capacity-building project in EIA undertaken by the Institute of Resource Assessment (IRA), University of Dar es Salaam and the International Institute for Environment and Development (IIED). Based upon a training needs assessment undertaken in 1995 (IRA/IIED, 1995) a series of three courses were developed by IRA and IIED with additional inputs from the Development and Project Planning Centre (DPPC), University of Bradford, and the EIA Centre, University of Manchester.

These courses and handbooks are the first practical guides to EIA designed and developed specifically for Tanzania. Three different courses have been developed:

- an Introductory course;
- an Orientation course; and,
- a Review and Quality Control course.

For each course, a separate training handbook has been prepared. In addition, a briefing note on EIA in Tanzania has also been prepared.

THE THREE COURSES

The Introductory Course

The Introductory Course (duration 1 to 2 days) provides an introduction to EIA and its role in Tanzania. It is designed to improve understanding of the contribution that EIA can make towards sustainable development planning in Tanzania. The accompanying handbook also provides a resource for planners and policy-makers responsible for the development of an institutional and regulatory framework for EIA in Tanzania.

The Orientation Course

The Orientation Course (duration 10 days) provides a "trainer-for-trainers resource" which is also suitable for potential EIA practitioners. Its purpose is to address each main component of the EIA-process in sufficient depth to provide a basic working knowledge for participants. The course builds on the introductory course and includes lectures, and interactive activities, such as group discussions, practical exercises in EIA and role play.

The Review and Quality Control Course

The Review and Quality Control Course (duration 5 days) is targeted at those agencies likely to play an important role in the future management of the Tanzanian EIA process. The user groups will

include; government ministries, Office of the vice President, Prime Minister's Office, the Planning Commission, National Environment Management Council (NEMC), and Division of Environment. The course focuses on developing the skills and expertise required to prepare clear terms of reference for EIA studies and to review the quality of EIA reports and process. The course builds on the introductory course and includes lectures, and interactive activities, such as group discussions, practical review exercises and role play.

THIS HANDBOOK AND INTRODUCTORY COURSE

This handbook provides an introduction to Environmental Impact Assessment (EIA) and its potential role in Tanzania. It is designed to accompany a 1 or 2 day intensive introductory training course on EIA. It is further designed to help improve understanding of the contribution that EIA can make towards sustainable development planning in Tanzania. The handbook also provides a resource for planners and policy-makers responsible for the development of an institutional and regulatory framework for EIA in Tanzania. Further, the handbook provides a introductory text for the Review and Orientation Courses.

How to use this Handbook

General

The handbook provides supporting information for the introductory course. It is arranged in loose-leaf format to allow for constant revisions, additions and updates. The pages of the handbook are colour coded for ease of use.

White: Supporting text for each course topic.
Yellow: Overhead materials
Green: Resource materials
Blue: Appendices.

Icons in the margin direct the user to additional relevant material:

 - Indicates a resource note.

 - Indicates recommended further reading.

To the trainer

The handbook has been divided into four topics (Box 1) designed to cover the most important elements of an introduction to EIA in Tanzania. These are designed to be delivered over a one or two day period, and a typical timetable is included as Appendix I as a guide. This is achieved through a mixture of seminars and lectures. Supporting text is provided for each topic with a list of further reading and references most of which can be consulted on a reference basis at IRA. For each topic a series of overheads have been developed. Trainers are encouraged to use and adapt these for their own training sessions provided that their source is acknowledged. *It should be*

stressed that trainers are expected to make a selection of the overheads presented in this handbook, particularly those for Topic D (The EIA process). Those most relevant should be chosen, and it would be a mistake in a two or three day course to attempt to make use of all of them. While more time is available then more of the overhead slides for the EIA process should be used.

Box 1 Introductory Course Topics

- *Topic A: What is Environmental Impact Assessment?*
- *Topic B: EIA in Tanzania*
- *Topic C: Making the EIA Process Effective (in Tanzania)*
- *Topic D: The EIA Process*

To the student

Ideally, this handbook should be used by a participant on the actual introductory course. It is designed to provide supporting text, copies of the overheads used during the teaching sessions, and other resource notes and papers. However, it does provide sufficient background information for a student to learn more on EIA and its development in Tanzania should it be impossible for the student to attend a course. The handbook includes sections on further reading - most of which can be consulted at IRA - and sources for further information on EIA the average reader may realistically be able to obtain.

RELATED PUBLICATIONS

The following related publications are available from IRA and IIED.

Environmental Assessment in Tanzania: A Needs Assessment for Training. Raphael Mwalyosi, Ross Hughes, Sitna Mohamed and Barry Dalal-Clayton. June 1995.

This document explores the context for EIA in Tanzania, reviews existing and potential institutional roles in relation to EIA, and identifies priority training needs.

A Directory of Impact Assessment Guidelines. Second edition. Annie Donnelly, Ross Hughes and, Barry Dalal-Clayton. September 1998. IIED, London.

This is the second edition of the directory which includes guidelines for environmental, health and social impact assessment, drawing together documents from a wide range of sources including governments, multilateral development banks, donor agencies, international organisations and NGOs.

Environmental Impact Assessment in Tanzania: A Briefing Paper. Raphael Mwalyosi, Ross Hughes, Bryan Spooner, Idris Kikula, Sitna Mohamed, and Hussein Sosovele. February 1996.

This briefing paper explains the role of EIA and summarises the basic procedures involved in its implementation and explores its potential role in contributing to improved decision-making and development planning in Tanzania.

Land Use Planning and Resource Assessment in Tanzania: A Case Study. Athanas Kauzeni, Idris Kikula, Sitna Mohamed, James Lyimo and Barry Dalal-Clayton.

This report examines the status, procedures and shortfalls of various aspects of land use planning in Tanzania. The research for the report was undertaken by IRA and IIED.

The Performance of EIA in Tanzania: an assessment. Raphael Mwalyosi and Ross Hughes. IIED Environmental planning Issues No. 14. IRA Research Paper No. 41. 1998.

This report evaluates the performance of EIA process in Tanzania as planning and environmental management tool. The research was undertaken by the International Institute for Environment and Development (IIED), London and the Institute of Resource Assessment, University of Dar es Salaam.

For further information about the training courses, and training resource materials, please contact:

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Topic A: What is Environmental Impact Assessment?

Course Notes

1. **Definition of EIA.**
2. **Importance and roles of EIA.**
3. **EIA as a planning tool.**
4. **Spread and evolution of EIA.**
5. **Who is involved in EIA.**
6. **Timing of EIA.**

INTRODUCTION

EIA is now increasingly being seen and used within the wider context of serving 'sustainable development' objectives. This role was highlighted at the United Nations Conference on Environment and Development (UNCED) in 1992 where Principle 17 of the Rio Declaration, and to which Tanzania is a signatory, states:

> *"Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority".*

In 1995, African environment ministers, including Tanzania, reaffirmed this commitment and pledged to formalise the use of EIA within legislative frameworks at the project, programme and policy levels. Recently, the President of Tanzania re-affirmed Tanzania's commitment to pledges made at the 1992 UNCED (WCST/IRA/Agenda, 1996). It is hoped that this introductory handbook and course will help to improve understanding and awareness of the potential role of EIA in Tanzania in project planning and development still further.

A DEFINITION

Environmental impact assessment (EIA) is a process which can be used to improve decision-making and ensure that development options under consideration are environmentally, socially and economically sound and sustainable. It is concerned with identifying, predicting and evaluating the foreseeable impacts, both beneficial and adverse, of proposed development projects and alternatives. It aims to eliminate or minimise negative impacts and optimise positive impacts through mitigation and enhancement measures. EIA relates to a process rather than a particular activity, the environmental impact study itself being only one component of the process. The main features of EIA are summarised in Box A.1.

Definitions of impact assessment methods

The terms 'impact assessment' and 'environmental impact assessment' are umbrella terms frequently used to cover a broad range of techniques, e.g. social impact assessment (SIA), risk assessment (RA), environmental impact assessment (EIA) and health impact assessment (HIA). To date, EIA itself has been applied generally at the project level, but increasing attention is now being given to impact assessment at the level of policies, plans and programmes (this is known as strategic environmental assessment - SEA).

IMPORTANCE AND ROLES OF EIA

Environmental impact assessment is an important management tool for improving the long-term viability of projects. Its use can help to avoid mistakes that can be expensive and damaging in environmental, social and economic terms. Human activities are altering natural cycles and systems on an unprecedented scale, and the cumulative effects of these activities are estimated to be on par with bio-physical processes as an agent of ecological change. Usually, the cost of undertaking an

EIA accounts for only a small proportion of total project costs (usually less than 0.1% of overall project costs), but savings to the project from an impact assessment can often considerably more.

Box A.1 Key Features of EIA

- *EIA is a continuous and integral component of planning* that should run continuously throughout the planning cycle of any development initiative. It is complementary to all other forms of planning. To be effective, EIA needs to be initiated at the earliest possible stage of project planning and design. Provision should also be made for mechanisms to facilitate continuous feedback between the EIA process, project design activities and decision-making.
- *EIA facilitates dialogue, prediction and response and* provides a forum for proponents, decision-makers and the public, to consider the potential impacts of a project on local communities, natural resources and environmental quality. It also provides a framework within which actual effects can be monitored, and provides managers with plans to respond to these effects.
- *EIA helps to enhance social and economic opportunities,* and to promote conservation and provides a mechanism for enhancing new economic and social opportunities and for introducing long-term environmental protection and conservation measures into project design.
- *EIA provides a framework for stakeholder participation in decision-making, e*xperience has shown that development projects imposed on local communities often fail to address issues of local concern and priority, and hence fail to engender a perception of local ownership. EIA can facilitate public participation within the project cycle and bring various stakeholder groups together and provide an opportunity to exchange information and build consensus between the groups involved.
- *EIA is a tool to improve decision-making,* and provides project-specific and strategic information before project implementation decisions are reached. It is also a mechanism for addressing cross-sectoral and cross-boundary issues. As a result, EIA helps to avoid inadvertent problems and their associated costs during project design.

More broadly, EIA is used for early warning planning of a wide range of resource use, development, and conservation initiatives in order to make the most of options for achieving sustainability. We live in a greenhouse world of ozone holes and vanishing species. It is now considered that the impact of human activities on the biosphere is reaching critical thresholds, with the consequent threat of ecological breakdown and social conflict. Thus, the use of EIA to choose the best project or options can help in the achievement of sustainable development. Box A.2 highlights the importance of EIA.

EIA AS A PLANNING TOOL

First and foremost EIA should be seen as a planning tool and an integral part of the project cycle (Figure A.1), providing information to decision-makers in a clear and systematic way. EIA should result in a better understanding of the linkages between ecological, social, economic and political systems. To achieve these objectives effectively, EIA needs to:

- ensure public and stakeholder involvement;
- ensure multi-disciplinarity; and,
- focus on the process, not just the production of an Environmental Impact Statement (EIS).

Box A.3 provides some examples of the role that EIA can play in addressing some common planning dilemmas.

Box A.2 Why EIA is important

Today's environment:

The environment matters more than ever before. Human activities are altering natural cycles and systems on an unprecedented scale. For the first time, the cumulative effects of development activities are estimated to be on par with bio-physical processes as an agent of ecological change.

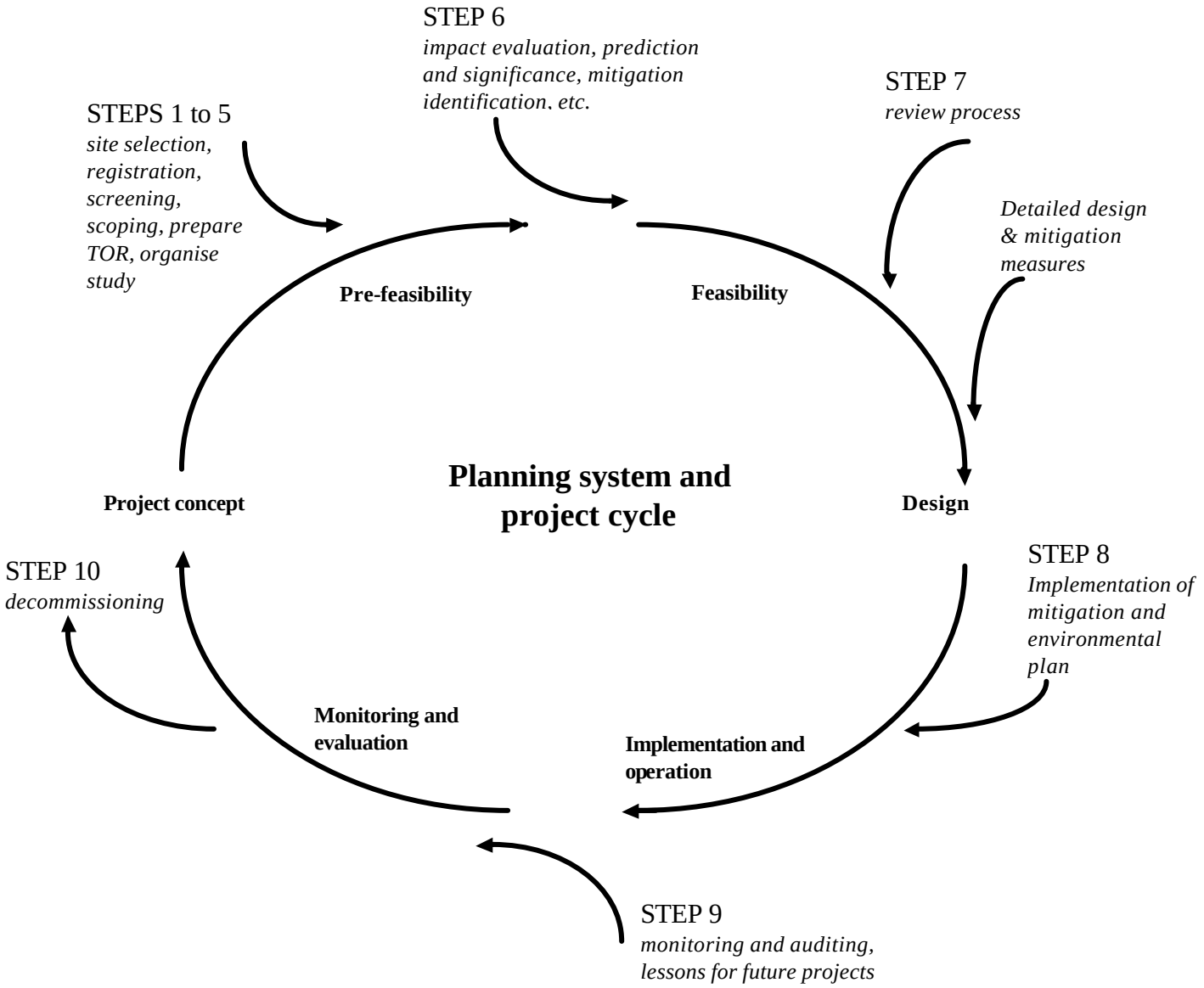
Risks and impacts are more significant than ever before. We live in a greenhouse world of ozone holes and vanishing species. Many reputable scientists consider that the impact of human activities on the biosphere is reaching critical thresholds, with the consequent threat of ecological breakdown and social conflict.

EIA is more important than ever before. This approach provides a basis for designing policies and plans that take account of environmental potentials and constraints, and for managing the impacts and risks of development projects and activities.

Source: Sadler, 1996.

Box A.3 The Role of EIA in Addressing Some Common Planning Dilemmas	
Benefit	***Description***
Avoiding conflicts	EIA can provide guidance and information for decision-makers to assist in making trade-offs between social, cultural, economic and environmental interests.
Integrating short-term needs with long-term goals	Short-term needs and interests can jeopardise long term development goals. EIA can help identify and reduce the risk of these problems arising.
Addressing transboundary issues	The political nature of transboundary issues can delay project implementation, increase costs and lead to national conflicts. EIA can be used to identify and find solutions to transboundary issues. The Lake Natron Soda Ash Project is a good example.
Improving project design and reducing costs	Activities which incorporate EIA at an early stage of their development tend to be more effective and cheaper - because they can identify and address unforeseen issues during planning and implementation. This can reduce capital and recurrent costs as well as avoiding unnecessary environmental damage and social disruption.
Improving institutional co-ordination	EIA provides a formal mechanism for inter-agency co-ordination and negotiation between stakeholder groups.
Considering alternative projects and designs	In the absence of EIA, project appraisal techniques tend to examine alternatives in terms of minimising financial costs and optimising financial returns. EIA broadens the boundaries of project appraisal so that considerations can be made of alternative **approaches** (e.g. community management of wildlife, rather than national parks), **technologies** (e.g. improving soil and pest management rather than practices that emphasise agrochemical applications) and **designs** (e.g. re-routing of the Makuyuni-Musoma Road to avoid damage to the Ngorongoro and Serengeti protected areas).
Improving accountability and transparency in planning and decision-making	EIA contributes to planning that is more transparent and accountable by providing a framework for information sharing, dialogue and consensus-building.
	Source IRA/IIED, 1995

Figure A.1 EIA and the Project Cycle



THE SPREAD AND EVOLUTION OF EIA

EIA originates from the introduction of the National Environmental Policy Act (NEPA) of the United States, in 1969. NEPA required that all development project proposals be accompanied by an Environmental Impact Statement (EIS) - a clear description of all potential environmental impacts, a discussion of how any adverse impacts could be avoided or mitigated, and an evaluation of alternatives to the proposed project. Over half the countries in the world now have formal EIA systems (Box A.3). These systems vary greatly, for instance some have:

- *mandatory regulations, acts, or statutes* which are generally enforced by requiring the preparation of adequate EIS before permission is given for a project to proceed;

- *EIA guidelines* which are not enforceable but generally impose obligations on the administering agency;
- EIAs which are prepared in an *ad hoc* manner, often because they are required by funding agencies as part of the funding approval process;
- other legislation allowing government officials to require EIAs to be prepared at their *discretion*.

With the exception of a few countries (e.g. Ghana, Egypt, Ghana, Namibia, Nigeria, South Africa and Zimbabwe), most of Africa is yet to fully adopt EIA systems. Most development assistance agencies have introduced their own guidelines, designed to encourage or mandate the use of EIA for development projects. In 1986, the World Bank included EIA in its project appraisal process, an initiative followed by other multilateral and bilateral agencies.

Box A.3 The Spread of EIA World-wide

EIA is now widely institutionalised and accepted throughout the world, and interest continues to grow. These include:

- Fifty five countries and federations;
- Six multilateral development banks (including the World Bank and most regional development banks);
- Eleven bilateral development agencies;
- Eight United Nations organisations (including the United Nations Development Programme, the Food and Agriculture Organisation and the World Health Organisation);
- Six inter-governmental organisations (including the European Commission and the Organisation for Economic Co-operation and development).

Source: Roe et. al., (1995).

WHO IS INVOLVED IN THE EIA PROCESS?

Five principal groups of stakeholders should be involved. These include :

- **Project proponents** who are responsible for commissioning and paying for the EIA process. Proponents usually include government ministries and departments, private sector companies and development agencies.
- **EIA practitioners or service providers** who undertake or provide inputs to the EIA process. They include individuals; organisations; research and academic institutes; NGOs; and both local and international consulting companies.
- **Reviewers** who are responsible for 'quality control'. They are responsible for determining the level of environmental assessment required (screening), and ensuring that the EIA process proceeds according to agreed, clear and comprehensive terms of reference. They

also review the EIA process and communicate their findings to decision-makers and other stakeholders. Depending on the complexity and scope of the project, an independent *review panel* may be formed for a specific project. Such panel members may be recruited from government ministries, universities and colleges, and environmental NGOs, together with local and international experts. The *public* should be notified of the EIS and requested to present their views and comments and these would be collated by the EIA Agency for consideration.

- **Decision-makers** who are responsible for making decisions on project development once an environmental impact statement (EIS) has been submitted. They may include central government, local authorities and development agencies.
- **The public** who are the most important stakeholders. The public can contribute ideas and information that can help to avoid unforeseen problems, improve project design and contribute to monitoring. Experience also shows that development projects imposed on local communities often fail or under-perform because they lack a sense of local ownership and public support. They can also result in conflict. EIA provides a mechanism for public involvement in decision-making. The public also includes interest groups. These are groups that might not be directly affected by a development proposal, but which have interests in particular aspects of the environment, such as conservation organisations, NGOs and CBOs. Many of these groups can make valuable contributions to EIAs.

TIMING OF EIA

EIA should be initiated as early as possible in the project cycle and should include a provision to cover the monitoring of project implementation and operation, and eventually an audit of the project. In some cases, it will also be important to include project decommissioning within the EIA.

Topic B: EIA in Tanzania

Course Notes

1. **Awareness of EIA.**
2. **National policy initiatives.**
3. **Sectoral initiatives.**
4. **National EIA guidelines.**
5. **Performance of EIA in Tanzania.**

AWARENESS OF EIA

Interviews with Tanzanian officials (IRA/IIED, 1995) showed that there are many misconceptions about the role of EIA. In most cases, these misconceptions stem from a lack of awareness, expertise and understanding. Occasionally, they are deliberately promoted, particularly by project proponents and bureaucrats defending vested interests. Box B.1 illustrates the breadth of these misconceptions, many of which were drawn from interviews with Tanzanian officials (IRA/IIED, 1995).

Box B.1: Misconceptions and Attitudes to Environmental Impact Assessment

Nuisance Arguments

`EIA is just a symbolic exercise to satisfy the rules. We don't really need to take it seriously'.

`We know all about the issues involved. We have already decided on the action we are going to take. An EIA is not necessary'.

'EIA is an obstructive nuisance - it interferes with getting on with our projects'.

Time and Money` Arguments

'EIA takes too long - we need to get this project finished quickly'.

'We can't afford EIA - it adds extra costs to project planning'.

'We Know Better' Arguments

'EIA and participation is all very well, but local environmental issues obscure national requirements'.

'What is the point of involving the public. What do they know? EIA is a technical issue that should be carried out by qualified experts'.

'The public are only likely to raise difficult questions and create difficulties for us'.

Skeletons-in-the-Cupboard' Arguments

'Can't you say something more favourable about this project in your EIA report. It paints a very poor picture of the project! We need to say positive things when we submit the proposal to the approvals committee'.

'We must use our own technical staff to undertake the EA. They are more likely to look upon the project favourably'.

'An EIA would run the risk of our project being cancelled'.

We're Not Good Enough' Arguments

'We can't use experts from our own country. There is no-one in the country.

Source: IRA/IIED (1995)

NATIONAL POLICY INITIATIVES

📖 *Kwalyosi & Hughes 1998*

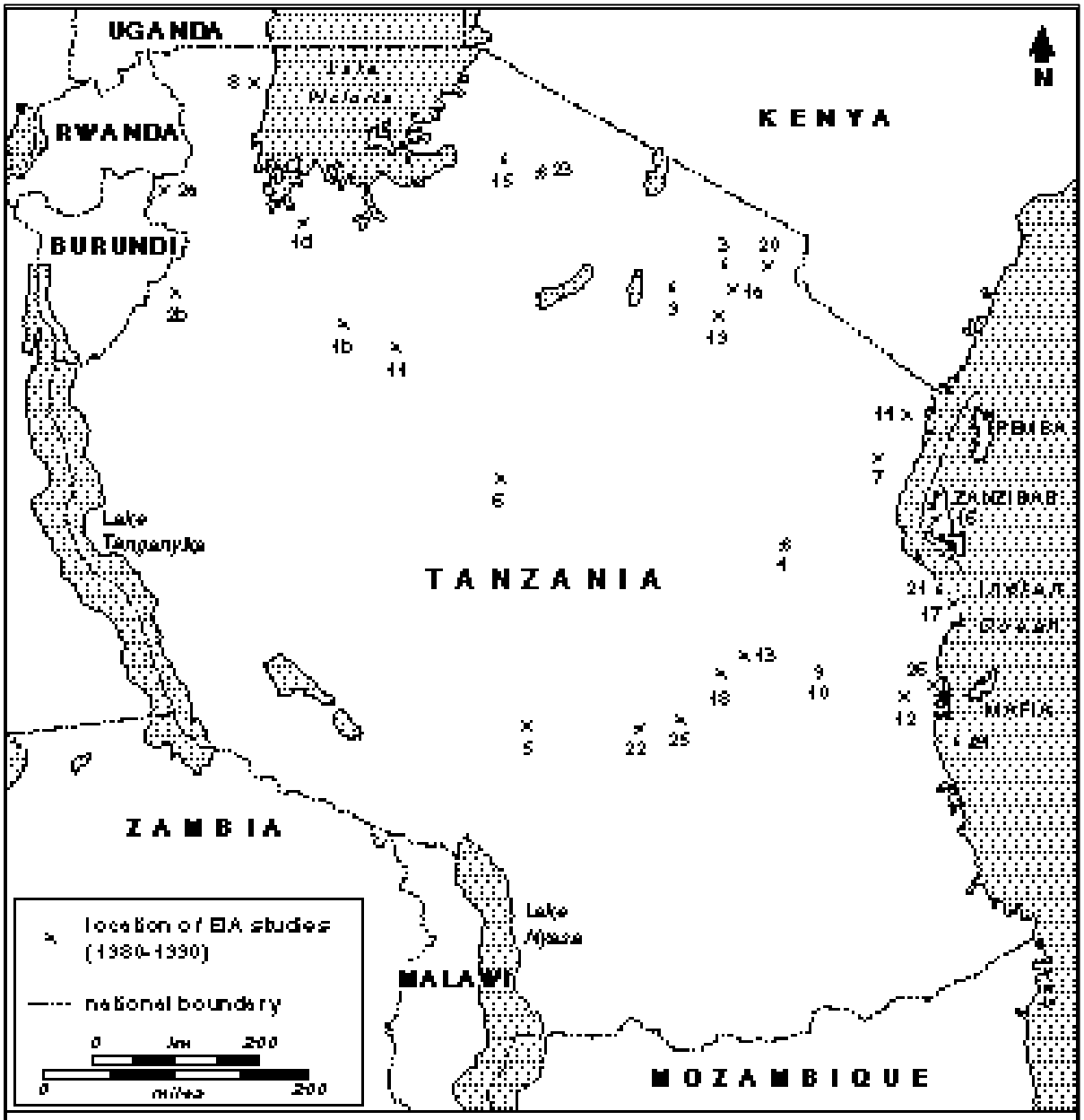
Since the first EIA process undertaken in Tanzania in 1980, EIA practice has evolved slowly. The adoption of national EIA policy and legislation, has been even slower, and remains incomplete. Over 35 EIA processes have so far been undertaken in Tanzania (Figure B.1 and Box B.2). Most of these (69%) have been undertaken to fulfil donor requirements.

Box B.2 Summary of Principal EIAs Undertaken in Tanzania (1980-1996)

1980	Stiegeler's Gorge Power and Flood Control Project. Rufiji Basin Development Authority.
1992	Madibira Rice Project. National Agricultural and Food Corporation.
	Kilombero Valley Hardwood Project. ODA.
	Development on Changuu (Prison) Island
	Construction of an oil terminal at Tanga
1993	Smallscale mining: Case study of Merelani, Kahama, Nzeg, Geita and Musoma.
	Mine Development Project, Merelani Block "C", Kiteto District, Arusha Region.
	Cathodic protection stations in Mukumi National Park
1994	Ikwiriri-Somanga Road Project. Ministry of Works.
	Re-development of the Hydro-Electric Power Station at Pangani Falls. TANESCO.
	Serengeti Serena Lodge Project. Tanzania National Parks.
	Grumeti Serena Tented Camp Project. Tanzania National Parks.
	Songo Songo Gas Development Project. Ministry of Water, Energy and Minerals.
	Tanzam Highway Rehabilitation Project. Ministry of Works.
1995	Mutukula-Bukoba-Lusahunga Road. Ministry of Works.
	Refugees influx in Ngara and Kibondon Districts.
	Singida - Nzega Road. Ministry of Works.
	Manyoni-Itigi-Tabora-Ipole-Mpanda-Kigoma Road. Ministry of Works.
	Feasibility Study of Dakawa Integrated Project (Dakawa II). NAFCO.
	Makuyuni-Oldean, Ngorongoro Access Roads. Ministry of Works.
	Moshi Pesticides Plant. National Chemical Industries.
	Lower Kihansi Hydropower Project. TANESCO.
	Tanesco Ubungo Generating Site Emergency Power Plant. Ministry of Water, Energy and Minerals.
1996	Up-grading of the Makuyuni - Musoma Road. Ministry of Works.
	Ikela Water Scheme.
1997	Prawn farming in the Rufiji Delta

Source: Mwalyosi and Hughes, 1998

Figure B.1 Map Showing EIA Study Sites in Tanzania During 1980-1995



Location of EIA studies (1980-1990)

1a Small Scale Mining (Mererani)
1b Small Scale Mining (Kahama)
1d Small Scale Mining (Geita)
2a Refugee Influx (Ngara)
2b Refugee Influx (Kibondo)
3 Graphite Mining Project (Mererani)
4 Dakawa II Integrated Project
6 Madibira Rice Project
8 Manyoni-Kigoma Road Project (Iligi)
7 Pangani Falls Hydropower Project
8 Mubuku 8-Bukoba-Lusahanga Road Project
9 Mukuyuni-Musoma Road Project (Mukuyuni)
10 Stiegler's Gorge Power & Flood Control Project
11 Singida-Nzega Road Project (Nzega)
12 Ikwiriri-Somanga Road Project
13 Cathodic Protection Station (Mikumi NP)
14 Tanga Oil Terminal Development
15 Grumeti Serena Tented Camp Project
16 Changuu Island Development (Zanzibar)
17 Tanzam Highway Rehabilitation Project
18 Ikela Water Scheme
19 Makuyuni-Oldeani Road Project (Makuyuni)
20 Moshi Pesticide Plant
21 Ubungo Emergency Power Plant
22 Lower Kihansi Hydropower Project
23 Serengeti Serena Lodge Project
24 Songo Songo Gas Development Project
25 Kilombero Valley Hardwood Project
26 Rufiji Delta Shrimp Farming Project

Various national environmental policies, such as the National Conservation Strategy for Sustainable Development (NCSSD) and the National Environmental Action Plan (NEAP) have been implemented. All these policies recognise explicitly the need for an effective environmental framework, but lack the necessary legislative backing (see Hitchcock, 1994; IRA/IIED, 1995 for a review of EIA-related policy and legislation).

In recent years, there have been signs of emerging political interest in EIA in the country. In 1995, a Tanzanian delegation signed a communiqué of high level ministers pledging affirmative action to promote EIA as a planning tool (Goodland *et al*, 1995), suggesting a growing commitment to the EIA process. Recently, the President of Tanzania re-affirmed commitment to pledges made at the 1992 UNCED (WCST/IRA/Agenda, 1996). However, lack of resources, expertise, institutional capacity and political commitment continue to present formidable barriers to the implementation of these pledges, including those related to EIA. Most recently the Office of the Vice President with the support of the World Bank has commissioned an institutional study on this.

National capacity (in terms of expertise and financial resources) available to manage and implement environmental assessment has been extremely limited (IRA/IIED, 1995). The institution likely to be responsible for managing the EIA process in Tanzania - the National Environmental Management Council (NEMC), has so far fulfilled an advisory role, since it lacks legal powers for enforcement. The shortage of relevant expertise and its lack of representation at district and local levels aggravate this weakness. A government Division of Environment (DoE) was created in 1991 to deal with policy issues on environment in the country. Conflicts between DoE and NEMC due to unclear and overlapping mandates has often worked to the detriment of the environment.

SECTORAL INITIATIVES

Despite the slow progress at national level, there have been some notable initiatives to incorporate EIA at sub-national level. These include:

Tanzania National Parks (TANAPA)

TANAPA's policies now require the preparation of an EIA for all developments and activities within and adjacent to the national park boundaries (TANAPA, 1994). The policy includes all development activities proposed by TANAPA, as well as other government agencies and private sector proponents. EIA is also being extended to cover the General Management Plans currently being prepared for each national park.

Department of Wildlife

Department of Wildlife policy requires all 'significant' development proposals within Tanzania's protected areas (which includes game controlled areas, game reserves and forest reserves) to be subjected to EIA (Department of Wildlife, 1996). The Ngorongoro Conservation Area Authority has a similar policy. Note that these are policies which are not supported by legislation.

Tanzania Electric Supply Company (TANESCO)

TANESCO have made EIA mandatory for all power generation projects and for the construction of transmission lines.

Other Sectors

A number of sectoral policies, such as those for tourism, land and energy, advocate the use of EIA in project planning. For example, the proposed National Land Policy requests environmental impact assessment studies prior to every major project. Some development legislation, such as the Mining Act (1979) also requires proponents to take account of environmental and social issues. However, neither policies nor legislative provisions are supported by guidelines, and there has been limited compliance.

NATIONAL EIA GUIDELINES

NEMC, 1998

Proposed EIA system for Tanzania

Draft national EIA guidelines envisage the formulation of an EIA Law. They also propose the establishment of a national Environmental Regulatory Body (ERB), most likely the National Environment Management Council (NEMC), which will oversee Environmental Units (EUs) at district and sectoral levels. The ERB and EUs would be responsible for screening projects and the review of EIA reports. The ERB will also be consulted during scoping, although this will be the responsibility of the proponent. ERB will also be responsible for approving terms of reference prepared after scoping. Reporting guidelines will follow standard procedures used in other countries, particularly those of the Republic of South Africa and those prepared by the Tanzanian National Parks.

In a context where environmental awareness is low, and corruption and the abuse of power is pervasive, a clear legislative framework provides the only realistic option for making EIA effective. Legislation would also strengthen the government's resolve to enhance the attention given to environmental considerations in the decision-making process, a pledge recently made by Tanzania's President.

EIA PERFORMANCE ASSESSMENT IN TANZANIA

Mwalyosi & Hughes 1998

In the absence of a robust institutional and legislative framework, it is perhaps not surprising that the quality and effectiveness of EIA in Tanzania has been highly variable (IRA/IIED, 1995; Mwalyosi and Hughes, 1998). This study on the performance of EIA in Tanzania found:

- *People's perception of EIA* - Although EIA is sometimes perceived as impeding development, there is a widespread desire among Tanzanians to adapt EIA to the national context.
- *Lateness of the EIA process* - Generally, EIA processes are initiated too late in the project cycle to influence project design. In almost all cases, EIAs are undertaken as 'stand alone' processes. There is almost no integration between EIA and project design.

- *Lack of stakeholder involvement* - Generally, little attention is given to involving all stakeholder groups, especially the local people.
- *Absence of national guidelines* - EIAs are often under-assessed and the expertise employed is often, while EIA review is *ad hoc* or non-existent.
- *Foreign expertise* dominates the EIA industry with little use of nationals (Tanzanians), which in the long term impedes EIA national capacity building.
- *The quality of EIS for decision-making* - In general, EISs are descriptively strong, but analytically weak. Key components of many EIAs are weak or missing; and do not consider cumulative impacts; and few assess project alternatives. Compliance issues are often unclear in the EISs and to a large degree, the quality of EIAs is not of good standard. The quality of EIAs appear to be constrained by resources, time limitations, and lack of political commitment.
- *Policy Implications* - The government should introduce robust legislation and guidelines to 'set the rules' for EIA; establish quality control mechanisms; promote stakeholder involvement; and, create an enabling environment for high quality EIAs.
- *Donor agencies* should review the application and performance of their EIA guidelines and assist developing countries in the development of robust and high quality national EIA guidelines. Also, they should plan for long-term support of EIA, including during implementation and post-completion phases of the project cycle, and promote and encourage the use of local expertise in EIA practice.

Topic C: Making the EIA Process Effective

Course Notes

1. **EIA system.**
2. **Conditions for effective EIA.**
3. **Stakeholder involvement in EIA.**

INTRODUCTION

The preceding topics have looked at: what we mean by EIA; the roles it can play; and the development of EIA in Tanzania. This final topic to the introductory course reviews and discusses the framework and resources needed to effectively implement EIA, especially in relation to the conditions prevailing in Tanzania today.

EIA SYSTEM

The key elements of effective EIA system (according to UNEP 1996) are summarised below:

- a legal basis with accompanying regulations
- appropriate institutional arrangements for co-ordination and regulation of EIA system, e.g. by an environment agency
- provision for stakeholder involvement and public participation
- high level political commitment and awareness
- availability of national technical capacity and EIA expertise
- formal review system of EIA reports established by government
- transparency in decision making processes on proposed development actions

In addition to these certain basic resources and conditions are required if EIA is to make an effective contribution to the design of projects, plans and policies.

CONDITIONS FOR EFFECTIVE EIA

Institutions and policies

There are several prerequisites for effective EIA: clear procedural guidelines, functioning institutional arrangements and procedures and, preferably, legal and/or regulatory provisions. Strong political commitment to EIA is also vital to ensure that the process is resourced, developed and respected by both the government and private sector. A robust review process, supported by dispute resolution and arbitration mechanisms, can also play an important part in making EIA more effective. To date the institutional and policy framework for EIA Tanzania has been weak or lacking, however, various initiatives are underway which have the potential to create a policy environment that could be more supportive of EIA. For example:

- draft national EIA guidelines for Tanzania Mainland, have been prepared and discussed at national and district level and submitted to government for approval;
- EIA guidelines for Zanzibar now exist (Government of Zanzibar, 1997);
- the national power utility, TANESCO's new policy underscores the need for EIA for all its power development projects;

- the Department of Wildlife draft policy requires all 'significant' development proposals within protected areas to be subjected to EIA (Department of Wildlife, 1996).
- the Ngorongoro Conservation Area Authority (NCAA) draft policy requires all "significant" development activities within the Ngorongoro Conservation Area to be subjected to EIA (NCAA, 1995);
- a study on institutional and legal framework for environmental management in Tanzania is in progress.
- SEACAM and World Bank have instituted a project to prepare guidelines for EIA for mariculture and tourism development for Eastern Africa countries including Tanzania.

Several other initiatives have been completed. They include: the National Environment Policy and Action Plan; the development of a National Conservation Strategy for Sustainable Development; and a new land policy. A National Environmental Policy for Zanzibar was enacted in 1991 and officially launched in July 1993 (COLE, 1992). All of these initiatives explicitly refer to the role that EIA could play.

Human resources

Experience in Tanzania shows that there is an urgent need to raise awareness, amongst the full range of stakeholder groups, of the role of the EIA process, and the contribution it can make to improved decision-making and planning. A second priority is to develop human resources trained in EIA process management; and to expose existing "expert groups" such as academics, economists and research institutions, to EIA applications. The building of multi-disciplinary team working skills will be an important part of this process. Finally, the development and use of participatory planning and research skills will be of considerable value to EIA throughout the country.

Financial resources

In Tanzania, budget restriction is widely considered by EIA practitioners to be a significant constraint to EIA 'best practice'. EIA costs are considered a burden, and proponents tend to opt to avoid or minimise incurring such costs (Mwalyosi and Hughes, 1998). However, experience world-wide suggests that the financial cost of undertaking an EIA is usually a small proportion of total development costs - usually less than 0.5% of project costs (Mercier, 1995; Cohen, 1997, also see Table C.1). Conversely, investment on EIA often identifies unforeseen environmental impacts which might require expensive remedial action, and which may undermine a project at a later stage of a project cycle. Often, these impacts can be designed out of the project if identified early enough.

Timing of the EIA study

Ideally, an EIA process should begin at project inception, and should continue throughout the development and implementation of the project to include monitoring and auditing (WRI, 1995, Sadler, 1996). In Tanzania, case studies suggest that the late stage at which the need for EIA is actually foreseen, is a more important reason for the poor EIA practice. Almost 40% of EIA processes were initiated after the design of the project had been completed, in some cases even

after projects had been constructed and were operational. In most of the remaining cases, EIAs were not started until design work was well advanced (Mwalyosi & Hughes, 1998). Under such circumstances, EIA became perfunctory, and performed either a 'reactive' or a 'firefighting' role.

Table D. 1 EIA Costs as a Proportion to Total Project Costs; Experience From World Bank Supported Project (Adapted from Mercier, 1995)

Type of Project	*Cost of EIA (Thousand US$)*	*Project Cost (Thousand US$)*	*% of total project costs*
Thermal Power Generation, Ghana	250	400,000	0.06
Forest Management, Tanzania	131	44,200	0.28
Energy Sector Development, Kenya	510	1,000,000	0.05
Energy Sector Development, Malawi	180	231,300	0.08
Petroleum Industry Development, Guinea Bissau	20	20,000	0.10

Time requirements

Ideally, the 'EIA study', which forms one component of a larger process, can take anything from 2 months to a year or more to undertake, depending on the scale and complexity of the project, and the availability of baseline data. Experience in Tanzania showed that in many cases, restricted time was available for the EIA and this constrained significantly the quality of the process. In such cases, key issues were omitted and little attention given to stakeholder involvement. Such 'quick-and-dirty' EIAs that tend to be commissioned in Tanzania tend to be cheap and ineffective.

Environmental standards

Environmental standards provide guidance to decision-makers and practitioners on the minimum acceptable levels to which a proposed project should adhere. They also provide a quantifiable measure for use in the review process. Many countries do not have their own standards, and compiling them can be a time consuming and extremely costly process. In the meantime, internationally agreed standards such as those by the WHO can be used as an interim measure.

To date, Tanzania has rather few agreed national standards for environmental quality. Temporary domestic water supply standards and effluent standards do exist, but these are not considered to be stringent by international standards. The Tanzania Bureau of Standards (TBS), has established an Effluents Technical Committee which is charged with the responsibility of developing effluent standards. As yet, no such standards have been published.

Integrating EIA into project planning

It is important to ensure that EIA teams work closely with project design staff in order to enable and encourage project proponents to take on board environmental and social considerations. Experience in Tanzania shows that little attention has been given to this approach (Mwalyosi and Hughes, 1998). In most cases, the production of the EIS appeared to be viewed as the end in itself. In all EIAs reviewed by the study they ended with the submission of the EIS. There were no examples of EIA practitioner involvement continuing during the implementation or post-completion stages of the project. Further analysis revealed that where close working relationship between the EIA team and the project design team had developed, then the proponents were much more willing to adapt the project design to minimise environmental and social costs and maximise environmental and social benefits.

STAKEHOLDER INVOLVEMENT IN EIA

There is a growing consensus that well structured, timely and broad-based stakeholder involvement (Box C. 1) is a vital ingredient for effective environmental assessment. One objective of stakeholder involvement is to provide information about the development and its likely impacts. Lack of information, or misinformation about the nature of a proposed development, prevents adequate stakeholder involvement, and can cause resentment and criticism of the project. Whilst there is rather limited experience of stakeholder involvement in Tanzania, elsewhere (Centre for Traditional Knowledge, 1997; Mutemba, 1996; Sadler, 1996), it has been found that timely, well planned and effectively implemented programmes have contributed to better design, implementation and operation of development projects.

Experience from various sources (Sadar, 1994; Hughes *et al*., 1998) show that there are many benefits of stakeholder involvement (Box C.2), and that conversely, there are some costs that can accrue as a result of not involving stakeholders adequately. For example, the EIA for the graphite mine at Merelani, Arusha failed to gauge the level of discontent amongst local communities and artisanal mining groups. Discontent eventually erupted into violent conflict and the marginalisation of the local people, and meant that the proponent had to invest heavily in security arrangements to secure the mining site from periodic invasions.

Ideally, planning for the involvement of different stakeholders, such as undertaken in a stakeholder analysis, should start as early as possible. Experience in Tanzania (Mwalyosi and Hughes et. al., 1998) suggests that too often, public participation (where it has taken place), occurred too late in the project cycle to make a real difference. Usually, public or stakeholder involvement of "public groups" occurred after project designs and alternatives had been decided upon and were no longer open to modification or change. As such, this involvement was found to be reactive rather than proactive, i.e. intended to convince the public of the merits of particular initiatives for public relations reasons, rather than trying to establish constructive engagement with the different public stakeholder groups.

In EIA the involvement of public stakeholder groups can occur at various stages of the process. In particular it can occur:

- **Screening stage:** before a decision is made on level of assessment.
- **Scoping stage**: during identification of issues and alternatives to be considered.
- **Impact identification and evaluation:** during identification of impacts, determination of impact magnitude and significance and development of mitigation options/measures
- **Review stage**: commenting on the draft EIS and taking part in public hearings or village meetings.
- **During impact mitigation, monitoring and auditing**: through joint implementation and responsibility sharing, possibly through participatory monitoring and evaluation.

Box C.1 Definition of stakeholder involvement

Stakeholders may be defined as all those people and institutions who have an interest in the successful design, implementation and sustainability of the project. This includes those positively and negatively affected by the project (Howlett and Nagu, 1997).

Stakeholder involvement (including participation) involves processes whereby all those with a stake in the outcome of a project actively participate in decisions on planning and management. They share information and knowledge, and may contribute to the project, so as to enhance the success of the project and hence ultimately their own interests.

One of the key features of stakeholding is that it aims to be 'inclusive' rather than 'exclusive'.

Example of EIA Stakeholders in the Kilombero Valley Hardwood Project

This preliminary EIA included discussions with most key stakeholders. The EIA team emphasised issues of sustainability based on environmental, social and economic considerations. Discussions were held with institutions and individuals with an interest in the development of the area, or those who may potentially be impacted by the project. These included the following:

- Central government officials;
- Regional authorities in Morogoro;
- District authorities in Ifakara and Mahenge;
- Village leaders and householders;
- Bilateral and multilateral development assistance agencies (NORAD, CIDA, World Bank, UNDP);
- NGOs (based in Dar es Salaam);
- Project proponents (CDC) offices in London and Dar es Salaam).

Box C.2 Benefits of stakeholder involvement in EIA

Potential benefits from increased stakeholder involvement include:

- help the EIA address relevant issues, including those perceived as being important by local communities and affected groups;
- help to harness traditional knowledge which conventional approaches may overlook;
- help improve information flows between proponents and stakeholder groups, improving the understanding and 'ownership' of a project;
- enable local communities to influence project design, so that it responds to their needs;
- help identify important environmental characteristics or mitigation opportunities that might be overlooked;
- help ensure that the magnitude and significance of impacts has been properly assessed;
- improve the acceptability and quality of mitigation and monitoring processes.

Potential costs of insufficient or lack of public involvement:

- emergence of conflicts between different levels of government, or between different governmental agencies and failure to gather local support for project;
- risk of marginalising potentially valuable contributors to the decision-making process;
- failure to tailor projects to local needs and priorities;
- lack of accountability can lead to ineffective or inefficient working practices and corruption;
- failing to draw on local expertise and energy represents a potential lost opportunity for making a good project even better;
- communication problems can create divisions within local communities, and breed resentment between local communities and project proponents;
- may lead to important, and often locally-specific, social, environmental and health impacts being overlooked or ignored in project design;
- reliance on interventions by outside experts, limiting the learning of new possibilities by local stakeholders; and,
- inability to prevent the concentration of project benefits accruing to a small number of influential beneficiaries.

Source: ODA (1996).

Topic D: The EIA Process

Course Notes

1. **Registration**
2. **Screening.**
3. **Scoping**
4. **Compiling Terms of Reference.**
5. **Organising EIA studies.**
6. **Undertaking a "full" EIA study.**
7. **EIA Review.**
8. **Environmental impact statements.**
9. **Environmental management and monitoring.**
10. **Environmental auditing.**
11. **Decision making.**

INTRODUCTION

This topic discusses the actual process of Environmental Impact Assessment, and relates this to the system proposed for Tanzania. The EIA process typically consists of a sequence of different steps (see Box D.1). These steps are briefly described in the paragraphs which follow below. Further details are provided in the Handbooks accompanying the Orientation and Review courses. The EIA system proposed for Tanzania is based on these steps and a flowchart of this is shown in Figure D.1.

Box D.1 Steps in a Typical EIA Process

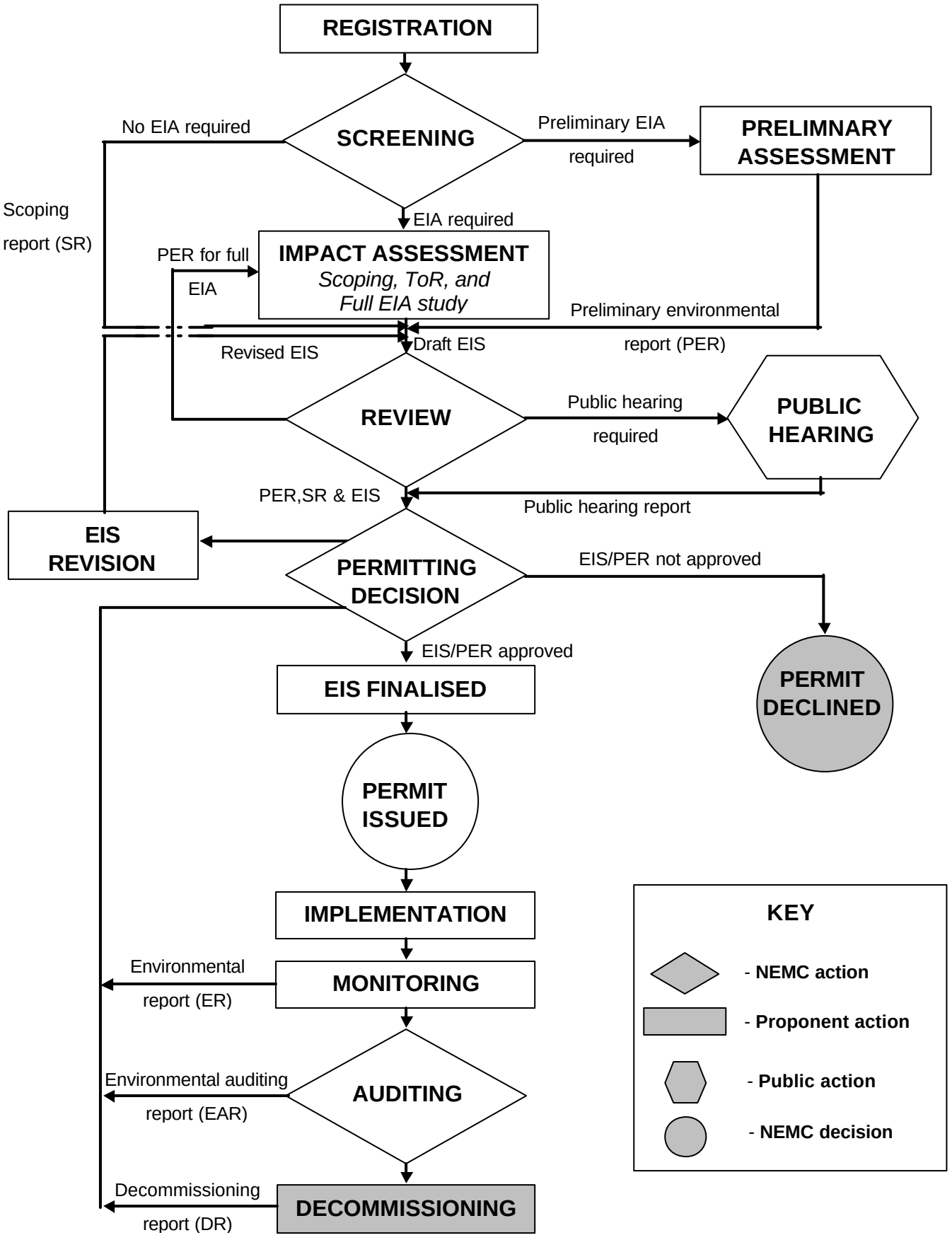
1. *Registration*
2. *Screening*
3. *Scoping*
4. *Compiling Terms of Reference*
5. *Organising the EIA Study*
6. *Undertaking the EIA study*
7. *Reviewing the EIA Report*
8. *Environmental management and monitoring*
9. *Environmental auditing*

REGISTRATION

Registration is a simple administrative procedure which requires project proponents to officially register their intention to undertake a development activity. Registration allows all new projects to be screened (see below) for their potential impacts by the appropriate authority. Registration procedures differ from one country to another but, in general, responsibility for registering a proposed project lies with the proponent. In Ghana, the Environmental Protection Agency (EPA) has designed a special form for this purpose.

In Tanzania it is proposed that the Environmental Regulatory Body (ERB) or the designated Environmental Units at the local level will be responsible for registration of proposed development activities. To ensure that the proponent understands the EIA procedures which need to be followed, on registration, the ERB will supply the proponent with the necessary documentation (policy, legal and administrative requirements, guidelines).

Figure D.1 Proposed Tanzanian EIA Procedure



SCREENING

Screening is a process to determine what level of environmental assessment (i.e. no assessment, a preliminary assessment, or a full EIA study) is necessary or appropriate for a specific project or proposal. Requirements for screening are normally addressed specifically in EIA legislation and/or official guidelines. Screening ensures that the level of environmental assessment required is appropriate to each specific project. Screening can also be used to focus resources on those projects most likely to have significant impacts, those where the impacts are uncertain and those where environmental management input is likely to be required. Experience has shown that it is generally advisable to screen all proposed development proposals.

Experience in Tanzania suggests in the absence of a formal screening procedure that projects tend to be "under-assessed. That is the level of assessment is less than would normally be expected using internationally accepted screening approaches. Consequently, right from the very beginning, projects tend to be under-assessed as shown in Table D.1.

Table D.1 Levels of environmental assessment applied to projects in Tanzania, compared with levels expected using World Bank screening criteria

Level of Assessment	*Actual*		*Expected using World Bank screening guidelines*	
	No. of statements	*% of total*	*No. of statements*	*% of total*
No. of 'full' EIA studies	7	27	17	65
No. of preliminary or initial EIA studies	19	73	9	35
Total no. of EIA studies	26	100	26	100

Mwalyosi and Hughes, 1998

Different approaches to screening have been adopted by different agencies and governments. Those found to be most effective are those that use checklists of types of projects which require further environmental assessment. Proposals falling outside of these lists would not normally require further assessment. Where classification is not obvious e.g. because the project covers more than one sector/sub-sector, it should be broken down into constituent components. Certain components might then be screened-out while other components of the same project might be screened-in. Note that environmental protection and improvement projects should not automatically be assumed to be without adverse environmental impacts.

Screening Guidelines NEMC, 1998

Many countries and organisations use checklist-type approaches e.g. European Union, the USA, the World Bank, the European Development Bank and the African Development Bank. Tanzania proposes to adopt the checklist type of approach. Further details on screening guidelines are provided by Donnelly et al. (1998).

After the screening of a project the decision will fall into one of the following four categories:

1. Full EIA required
2. Preliminary assessment required
3. EIA not required
4. Project proposal rejected

However, it is rare for a project to be rejected outright at the screening stage. Usually it is unlikely that a developer would have proposed a project with such a significant negative impact(s). Different agencies and countries have variations on the four categories.

SCOPING

Scoping, sometimes referred to as preliminary assessment, is used to focus the EIA on the key issues for decision-making. In addition scoping is used to identify information needs, determine study boundaries, and to review alternative options to the project. It also offers a crucial, and often first, opportunity for involving stakeholders in the project, identifying issues that are of concern to them, and tapping their knowledge of the environment. The objectives of scoping can be summarised as follows to define:

- the main problems and issues surrounding the project;
- the likely positive and negative impacts of the project;
- the spatial, temporal and institutional boundaries of the project and its impacts, and;
- the likely data requirements for undertaking a full EIA.

Experience in Tanzania (Mwalyosi and Hughes, 1998) and elsewhere (Sadler, 1996) shows that in the absence of appropriate scoping, the following problems can occur:

- EIA impact statements become voluminous, detailed, and exhaustive documents with unnecessary comprehensive data;
- significant or important issues are not identified during the EIA, in other cases, issues are identified late in the review process, resulting in costly revisions;
- irrelevant and insignificant issues are not eliminated, with consequent waste of time and money; and
- presentation of impacts and related environmental information often follow a sectoral, catalogue or inventory style approach.

Responsibility for scoping lies with the proponent, the EIA authority or with the practitioners. Most countries of the world, place the onus on the proponent, rather than putting extra workload on the EIA authority. The proponent will normally only do it if they have a high level of environmental expertise - otherwise they will leave it for the consultant to do as part of the EIA study.

Tanzania's draft EIA guidelines propose that scoping will be a responsibility of the proponent in consultation with the Environmental Regulatory Body. Scoping guidelines have been proposed and include methodologies for stakeholder participation.

Scoping Guidelines NEMC, 1998

During the course of project planning, most possible alternative development options will be rejected by a proponent on economic, technical and regulatory grounds. The role of EIA is to ensure that environmental and social criteria are also considered at these early stages, and during scoping. Unfortunately, rarely is the consideration of alternatives given enough attention in the planning and impact assessment processes. In Tanzania, Mwalyosi and Hughes's (1998) found that two thirds of environmental impact statements failed to address alternatives adequately and most failed to mention them at all. Box D.2 highlights some of the main issues surrounding project alternatives or options, and Box D.3 suggest project alternatives for a shrimp farming project.

Box D.2 Assessment of project alternatives

A range of systematic methods can be used for comparing and evaluating alternatives. The different categories of alternatives are given below:

- demand alternatives (e.g. using energy more efficiently rather than building more generating capacity);
- activity alternatives (e.g. providing public transport rather than increasing road capacity);
- locational alternatives, either for the entire proposal or for components (e.g. the location of a processing plant for a mine, or the location of tourist lodges within different zones of a national park);
- process alternatives (e.g. the re-use of process water in an industrial plant, waste-minimising or energy efficient technology, different mining methods);
- scheduling alternatives (where a number of measures might play a part in an overall program, but the order they are scheduled will contribute to the effectiveness of the end result); and
- input alternatives (e.g. raw materials, energy sources–such as replacing diesel oil with low sulphur fuel oil such as at Songo Songo).

The 'no build' alternative is often used as a base case against which to measure the relative performance of other alternatives. In this case the relative impacts of the other alternatives are expressed as changes to the base case. If, overall, all the alternatives were judged to have unacceptable performance, the decision might be to adopt none of them, and stay with the status quo–the 'no build'. Alternatively, a base case might be taken forward in its own right for evaluation against defined objectives.

Box D.3 Alternatives: The Case of Shrimp Farming in the Rufiji Delta

1. *No Project Alternative* (no shrimp farm)	• No negative impacts on coastal shrimp stocks • Shrimps continue to be trawled from coastal waters around the delta
2. Alternative farm design	
a). Intensive	• high inputs (energy, feeds, antibiotics) • low land loss (less loss of livelihood) • no impacts on bycatch less likelihood of soil acidification
b). Semi-intensive	• lower inputs • greater land loss (livelihoods, mangroves, intertidal areas) • impacts on bycatch (and therefore coastal fisheries) • possibility of soil acidification
c). Extensive	• very low inputs (just fertiliser) • large land loss (thus loss of mangroves and livelihoods) • impacts on bycatch (and therefore coastal fisheries) • possibility of soil acidification
3. *Smaller project option*	• start small • learn from mistakes

Note the actual assessment of the project did not consider alternatives.

Determining the boundaries within which the EIA will be undertaken is an important component of scoping. Consideration needs to be given both to the way in which the project activity is likely to impact on the surrounding environment, and to the way in which the environment is likely to impact on the project. For example, a dam or irrigation project could lead to reduced water availability downstream, whilst the project itself could be affected by upstream soil erosion or water management practices.

There are three types of boundaries to be considered in an EIA study: spatial, temporal and institutional. Examples of boundaries of different projects are shown in Boxes D.4 to D.6.

Box D.4 Spatial boundaries - Pangani Falls Power Project

- The Pangani Falls hydropower scheme involved the construction of a dam and hydropower station.
- An EIA of the scheme was undertaken and the spatial boundaries for this study focused on the immediate dam and construction site - an area of only 70 hectares including the project site (Pangani Falls), Bwitini village and the adjoining stretch of the river.
- Since its operation less water has been available to the project than expected. Water has been "lost" to the project as it has been used in the upper catchment for irrigation.
- The impact of this has been a reduced electricity output from the Pangani Falls hydropower scheme.
- The spatial boundary of the project should have obviously included the whole catchment - both up and down stream of the Pangani Falls scheme.
- If the correct spatial boundary had been used the implications for water use in the upper catchment could have been assessed, and the project design and/or mitigation measures made to avoid the problems project is now facing in terms of lost power.

Source: Mwalyosi and Hughes (1998)

Box D.5 Temporal boundaries - Tanga Fertiliser Company

The Tanga Fertiliser Plant was established in the late 1970s, without an environmental assessment. Once operating, the plant became the source of serious marine and air pollution, resulting in significant impacts on marine resources, and threats to human health. The economic costs of rectifying these problems, combined with a worsening economic climate, led to the eventual closure of the plant in the late 1980s.

Unfortunately, the problems continue to this day - since 2000 metric tones of liquefied ammonia gas remained on site when the factory closed. Storage of this ammonia under pressurised conditions has proved extremely costly and continues to pose health and environmental risks, should there be spillage or leakage from the ageing storage tanks.

Thus, the plant remains an economic and environmental liability. An EIA prior to the commissioning of the project would have identified the unsuitable nature of the site selected for the plant (which was close to sensitive ecological systems, and in close vicinity of human settlements). Further, a competent EIA would have addressed the temporal boundary and decommissioning issues, so that these could have been considered in decision-making.

Source: Mwalyosi and Hughes (1998)

Box D.6 Institutional boundaries - Makuyuni to Ngorongoro/Oldeani Road Project

- Arusha Regional Development Directorate
- Four District Authorities (Mbulu, Ngorongoro, Monduli, Arumeru)
- Tanzania National parks
- Wildlife Department
- Ngorongoro Conservation Area Authority
- Lake Manyara National Park authority
- Tarangire National Park Authority
- the National Livestock Authority
- Ministry of Public Works
- Ministry of Agriculture
- Local institutions

The end result of scoping may either be a formal document, such as terms of reference, or an informal document such as the proponent's scoping report. In any cases, the report should indicate the following:

- how scoping was undertaken;
- the authorities and interested/affected parties involved;
- how local/central government was involved;
- alternatives which should be examined in the impact assessment;
- the stakeholder concerns; and,
- the specific guidelines for undertaking and preparing the impact assessment.

The results of scoping must be presented in a clear and logical way so that the significance of potential impacts can be understood clearly. The means of presentation should also provide opportunities for feedback and dialogue. It is also important that alternative or supplementary techniques to 'written' communication are considered. Techniques such as video, role play, village meetings and discussion groups may be more appropriate as these can make information more accessible to local people, particularly in rural areas with low literacy rates.

COMPILING THE TERMS OF REFERENCE

Terms of reference (ToR) are normally prepared following the screening stage and after a decision for a partial or full project EIA and therefore are usually the product of scoping. However, there are no hard and fast rules for preparation of ToR. The format depends on the local conditions and the circumstances of each specific project. An example of a basic format for ToR is given in Box D.7.

Importantly, ToR for an EIA study must be finalised before a proponent solicits proposals to carry out the work. Once the ToR have been compiled, they should be submitted to the review agency for approval. This is usually done by the proponent in collaboration with the team responsible for the initial scoping. ToR are important because they:

- provide formal guidance for practitioners on the range of issues that must be addressed in the EIA process;
- clarify to the proponent "what is expected of them";
- provide the proponent with a basis for project analysis;
- provide the reviewing agency with a tool for compliance; and,
- establish the framework for the review process by providing 'benchmarks' against which the EIA process (as a whole) and the EIS (in particular) can be evaluated.

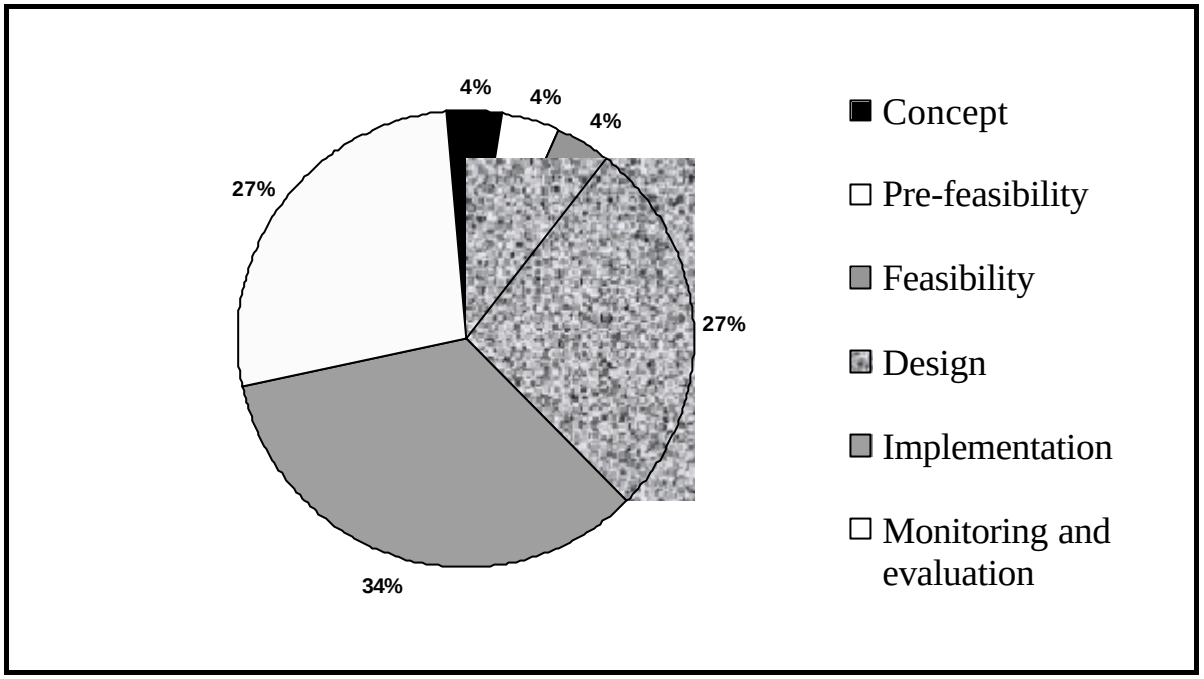
ToR may be prepared by the developer, an agency and/or consultant requested by the developer, or the developer in consultation with a donor (in case of a donor funded project, e.g. the World Bank). Responsibility for ensuring that the ToR for an EIA study are technically adequate, i.e. they are systematic, clear and tailored to the specific context of the project, rests with the EIA agency. In Tanzania, the Environmental Regulatory Body is likely to bear such responsibility.

ORGANISING THE EIA STUDY

Organising the EIA study involves acquisition of relevant environmental standards and guidelines; and knowledge of relevant policies, laws and institutional arrangements. Also, it ensures that the EIA team has appropriate expertise for the EIA study, adequate time for and proper timing of initiation of the study; stakeholders have been identified and techniques for their involvement decided upon; and that financial resources for the work are available and adequate. Organising EIAs for simple projects may be straightforward and may only involve a small team of three to four people over a few weeks. Organisation for large multi-disciplinary studies can be more complex. Particular care needs to be taken by the EIA team leader (or the proponent) to ensure that the EIA team has appropriate expertise for the EIA study. The composition of the EIA team will vary from one project to another.

Another important consideration in the EIA process is to ensure that EIAs commence before project design details have been finalised and well before project implementation commences. EIA studies that commence after project design are NOT likely to be effective. Thus, perhaps, the most significant reason for the poor performance of EIA in Tanzania is the "late" commencement of the EIA process (see Figure D.1).

Figure D.1 Initiation of EIA in the project cycle in Tanzania



Source: Mwalyosi and Hughes 1998

UNDERTAKING THE FULL EIA STUDY

EIA studies attempt to predict which impacts will occur as a result of the project and their likely significance. Importantly, they identify measures to mitigate or avoid these impacts, or optimise the benefits of the project. The key components of a full EIA study are outlined in Box D.8, the final outcome of which is an Environmental Impact Statement (EIS).

Impact identification

Impact identification aims to ensure that all potential environmental impacts are identified and listed and that their boundaries and characteristics are clearly understood. The potential mitigation and management options can be discussed within the multi-disciplinary EIA team and with the public. Experience in Tanzania (Mwalyosi and Hughes, 1998) shows that over 90% of the EIA processes identified impacts satisfactorily. However, none considered cumulative impacts. For example, the EIA of the Pangani Hydropower Redevelopment Project failed to address basin-wide issues. As a result, the haphazard upstream water diversion, mainly for irrigation, has reduced the volume of water reaching the dam. This has led to lower performance and subsequent economic costs, post-hoc management (water pricing) and water use conflicts.

Box D.7 Format of terms of reference for further EIA studies

- **An introduction**: This should introduce the proponent, the project proposal, and the purpose and objectives of the study.
- **Project-related information:** The project proposal and project alternatives should be described here, and in sufficient detail to guide the development of a study proposal. Relevant (existing) background studies can be summarised to provide an indication of the kinds of information available to the study.
- **Specific EIA requirements:** Environmental issues likely to be of particular relevance to the project should be outlined here. These are normally identified by the scoping study. The need for the EIA to address measures for avoiding, mitigating and managing impacts must be clearly stated.
- **Field versus desk work**: Expectations regarding the level of field work, such as ground truthing and updating existing information sources, or requirements for new surveys etc. should be indicated.
- **Working relationships**: The nature of the relationship between the EIA team, the proponent, the government and the public, must be discussed. If the EIA is to be effective in influencing project planning, the ToR must specify that the EIA team work in close collaboration with other project design components, such as engineering and economic appraisal. Importantly, the ToR should indicate the range of stakeholder groups who should be involved in the EIA process (these should be identified during the scoping phase).
- **Time**: The duration and schedule for undertaking and reporting on the EIA process should be specified.
- **Reporting requirements**: ToR should specify the format and main headings for the EIA study report.

Box D.8 Key Components of a full EIA Study

- ***Impact identification*** identifies those impacts that should be investigated in detail;
- ***Examination of alternatives*** considers alternative sites for the project, and where practicable, alternative designs and operating processes; and the environmental implications of each;
- ***Evaluation and assessment of impacts*** attempts to determine the significance of impacts at a local, national and international level;
- ***Development of mitigation options*** seeks to determine measures to prevent or reduce impacts of the project, so that these can be built into project design. These measures are ideally drawn together into a coherent *environmental management plan* which should be included in the overall project plan;
- ***Information dissemination and documentation*** is conventionally achieved through the compilation of an environmental impact statement (EIS). A non-technical summary of the EIS should be made and be readily accessible to the public. The summary should focus on issues most relevant to decision-making and should be available in local languages.

Examination of project alternatives

This stage considers alternative sites for the project, and where practicable, alternative designs and operating processes; and the environmental implications of each.

Evaluation of impact significance

This stage is perhaps the most critical in the EIA process and one that is often subjective and value laden. For example, an impact at a national level might be regarded as insignificant, but could be highly significant at a local level. In other cases, there may be a degree of uncertainty in the quality of available data. Despite these considerations, the significance attached to each impact often bears directly on project approvals. Information on impact significance can be effectively presented in matrix form (see Figure D.2)

Figure D.2 Matrix Showing Significant Impacts of the Stiegler's Gorge Hydropower Project (Modified from RUBADA, 1980)

ACTIONS / *TOPIC*	**Primary Development**	**Reservoir Operation**	**Operation of Construction Camp**	**Road & Power Transmission in Game Reserve**
Energy Production	+3	+2	0	0
Tourism	-3	-1	-3	+3
Floodplain Agriculture	-3	+1	-3	0
Floodplain Fisheries	-3	-2	-3	0
Delta Fisheries	-2	-2	-2	0
Reservoir Fisheries	+2	+2	+2	0
Health	-1	-1	0	0
Image of Project	+2	0	+2	0

Legend:

+3 Very significant positive impact
+2 Significant Positive impact
+1 Lightly positive impact
-3 Very significant negative impact
-2 Significant negative impact
-1 Slightly negative impact
0 No impact

Development of mitigation options

This involves identifying options and determining the costs of measures which can avoid, mitigate or compensate for significant adverse impacts, or enhance the opportunities created by positive impacts. The selection of the most appropriate and acceptable mitigation measures often involves considerable analysis.

Mitigation measures are often presented to decision-makers in the form of matrices to indicate impacts before and after different mitigation scenarios. The EIA should also include a clear statement of the impacts that will remain after mitigation (these are called residual impacts), and proposals for managing them. Where these residual impacts are significant, or unacceptably high in the long term, it may be necessary to re-assess the objectives and design of a project proposal. This stage of analysis would typically occur late in an EIA study. A typical simple matrix showing impacts and mitigation measures is shown in Figure D.3.

Figure D.3 Example of Impacts and Mitigative Measures of the Songo Songo Gas Development (MWEM, 1994)

Development Activity	Potential Impacts	Mitigative Measures
Clearing before construction	• Surface erosion • Sedimentation in water bodies	• Dry season construction • Drainage and erosion control measures, reclamation
Pipeline ditching, grading and backfilling	• Interruption of surface and subsurface drainage, • Sedimentation, • Prevention of fish movement	• Dry season construction, • Drainage and erosion control measures
Construction machinery	• Fuel spills could damage aquatic habitats	• Careful handling of fuel, • Spill contingency plan
Surface run-off from gas and power plants during operation	• Liquid hydrocarbons (both plants) or fuel spills (gas plant only)	• All surface run-off directed toward a retention pond, • Water testing and treatment before release, • Employee awareness, • Spill contingency plan

ENVIRONMENTAL IMPACT STATEMENT

Roles

The final report from an EIA is also often termed an Environmental Impact Statement (EIS). For the EIA process to achieve its objectives it is important that any report produced is accurate, contains all the relevant information, is clearly written and understood by the public, non-technical people and decision makers. To ensure the effective dissemination of the contents of an EIS it will often be useful to supplement the written word with other information tools such as radio, video and public meetings. As a tool for decision-making, the findings of the EIA process need to be communicated in a way that is accessible to a wide range of stakeholders - from "lay people" to decision-makers. This is in the form of environmental impact statement (EIS) which should, according to UNEP 1996, assist:

- the *proponent* to plan, design and implement the proposal in a way that eliminates or minimises the negative effect on the biophysical and socio-economic environments and maximises the benefits to all parties in the most cost-effective manner;

- the *government* or responsible authority to decide whether a proposal should be approved and the terms and conditions that should be applied;
- the *public* to understand the proposal and its impacts on the community and environment

Contents of EIS

Although EIA regulations often specify the minimum contents of an EIS, they often do not provide any standards for report presentation. More specific guidelines for contents of an EIA are usually specified in the terms of reference of an EIA study of a particular project. The typical headings of an EIS are:

I. Executive Summary
II. Introduction
III. Project Description
IV. Project stakeholders and public involvement
V. Description of Institutional, Policy and Legislative Environment
VI. Description of Existing Social and Biophysical Environment
VII. Environmental Planning and Design
VIII. Assessment of Environmental Impacts
IX. Impact Planning and Management
X. Economic Evaluation
XI. Summary and Recommendations

Appendices

Overview of different EIS sections

Executive, or non-technical, summary

The non-technical summary is the part of the report that most people will read. It is often the only part of the report that people will read!

For a small to medium proposal a two to three page summary is appropriate. However, for a major proposal, the executive summary may be up to ten pages long. The summary should be short but comprehensive, with an emphasis on expected impacts and management measures. For Tanzania the summary should be written in English and Kiswahili, and where relevant in the local language. The executive summary should also be produced as a separate, "stand-alone" document, which also provides details of where the full report can be obtained or referred to.

Executive summary of the Kilombero Valley Hardwood EIS

The non-technical summary should be clearly written, avoid jargon and technical language, and contain sections/paragraphs on:

- title and location of the project;
- name of the proponent;
- name of the organisation preparing the EIA report;
- a brief outline and justification of the proposed project;
- a brief description of the project environment;
- names of project stakeholders plus their, and public, involvement in preparation of EIS;
- description of the major significant impacts;
- recommendations and plan for mitigation/compensation measures;
- proposed monitoring and auditing; and,
- summary of recommendations and conclusions.

Introduction

This should identify the type of project proposed (e.g. road project; forest plantation); its location (or various site alternatives), and if the project is part of a larger proposal or not. The project proponent must be clearly identified as must the team which carried out the EIA. It should outline the background to the project and the reasons or justification for it.

Project description

This should indicate the status of the project in the project cycle e.g. pre-feasibility, feasibility, detailed engineering and design - so that reviewers of the report can understand the level of detail and available planning or design options. The description of the project and its alternate sites, designs and implementation strategies should be given in enough detail so that impact forecasts and management measures can be understood and appreciated. In most cases, it will not be necessary to include detailed process information or market-sensitive information that a proponent might want to remain confidential (but it is important that this is not used as an excuse to keep information which should be public secret).

In most cases, the description should include:

- inputs (raw materials), outputs (products), processes and major types of equipment;
- the different options or alternative designs or locations available to the project;
- maps, flow diagrams and photographs where necessary; and
- a summary of technical, economic and environmental features essential to the project.

The different design options or project alternatives should be discussed and compared (including the no project option). The principal features of each option should be given and the economic, technical and environmental advantages and disadvantages of each option should be discussed and evaluated - this should be covered in more detail in the section on the assessment of environmental impacts.

Project stakeholders and public involvement

This section should identify all the project stakeholders and their interests in the project (both positive and negative). A report of how these groups were involved in the preparation of the EIS should be included. This should include a description of public involvement in the EIA process, and how the interests of the public and different stakeholders have led to changes in project design and development of mitigation measures for adverse impacts.

Description of institutional, policy and legislative environment

This should describe the institutional, policy and legalisation environment affecting the project and its development. This would include the policies, regulations and legislation which the project will have to comply, and the bodies or organisations with which it will have relations in its construction and operation. This will cover the different institutional and administrative boundaries affecting the project.

Description of existing social and biophysical environment

This section should describe the existing social and biophysical environmental setting in enough detail to allow for an understanding of the analysis and assessment of impacts. It should include:

- spatial and temporal boundaries within which the environment is going to be considered;
- environmental conditions in qualitative and quantitative terms of the physical, biological and human environment before the implementation of the project, as well as projected conditions over the time horizon of the project should the project not go ahead; and,
- environmentally-sensitive areas of special or unique scientific, socio-economic or cultural value.

Environmental planning and design

A discussion of the environmental planning that has gone into the project should be discussed. Issues that have been taken into account for avoiding or minimising impacts, for capturing potential benefits, for compensating for residual impacts, and for impact management have to be discussed. The design and management features to which the proponent is committed must be highlighted as these form a key part of the project design on which the impact analysis is carried out. The objectives, methods and results of involving the public in project planning should also be discussed.

Assessment of environmental impacts

This should include a description of how beneficial/adverse impacts and direct/indirect are expected to occur. This is required for each feature of the environment identified as important during scoping. Possible cumulative or synergistic effects should be highlighted. In each case, the report should discuss:

- the source(s) or cause(s) of the impact(s);

- the severity of impact (e.g. magnitude, direction, etc.) as well as the likelihood of its occurring;
- a quantitative or qualitative assessment of the costs of different impacts;
- a clear statement of residual impacts, i.e. those which cannot be avoided or minimised, and recommendation for how these shall be managed;
- a description of methods and standards used to predict and forecast impacts, of how environmental data was gathered, and the methods and criteria used to judge impact significance;
- the uncertainties in predicting impacts;
- the significance of the different impacts; and,
- possible measures for avoiding or mitigating the affects of significant impacts.

Impact mitigation planning and management

This section should detail an impact management plan which summarises the planning and design measures adopted in the project plan to reduce or eliminate potential environmental impacts. It must outline how it is planned to reduce or eliminate potential environmental impacts, or enhance positive impacts. It must also outline a system for the monitoring and management of impacts during project construction, operation and decommissioning, and outline which activities will be undertaken by the proponent and which should be the responsibility of the government. it should also include an estimate of the costs of implementing the mitigation measures.

Economic evaluation

Where possible, the report will include an economic valuation of the environmental costs and benefits of the project, and identify those which cannot be evaluated in monetary terms. The distribution of costs and benefits (Who benefits? Who pays?) should also be discussed, and integrated into the financial and economic appraisal of the project.

Summary and conclusions

It is useful to have the conclusions summarised in a series of brief statements referring to relevant sections of the report. The section should focus on significant impacts, the measures proposed avoid or mitigate them, and the impact management proposals during project implementation.

Appendices

These should include information not directly useful in the text of the report but needed for reference or detailed review by technical experts. These could include:

- References;
- Abbreviations used in text;
- The Terms of Reference for the study;

- Sources of data and information;
- Detailed data reduced for use in the main body of the report;
- Detailed technical analysis of particular impacts (e.g. pollution dispersion, soil erosion, demands for social services);
- Names of individuals and organisations consulted or involved in study;
- Details of when and where study was undertaken; and,
- Names and qualifications of team members who carried out the study.

EIA REVIEW

Proposed review system for Tanzania

The review phase is an essential component of an effective EIA process. It provides an impartial mechanism for assessing the quality of the EIA and its adequacy for decision-making. In some countries, such as the Netherlands, an independent commission provides a review of each impact assessment. Guidelines to assist in the review of the quality of EIA, and to provide a framework for coherence and consistency of review quality, have now been prepared for a number of countries. Review is generally the responsibility of the competent environmental authority. However, in many countries, especially where technical expertise, time and financial resources are limiting, review agencies establish special *review panels* or *inquiry bodies* drawing expertise from different organisations and agencies, such as university departments, research institutes, NGOs, consultancy organisations and expertise within other government departments.

On completion of the review process, decisions can be made public on whether or not the EIS is adequate for decision-making purposes. Once the EIS is considered to be of satisfactory standard, decision-makers can use the EIS to assist in deciding if the proposed activity should:

- proceed without modifications;
- proceed with minor modifications;
- be re-designed; or
- await further investigation and public enquiry;
- be rejected.

Proposed EIA system for Tanzania

The reviewer of an EIA process is expected to decide whether the EIS is acceptable for decision-making purposes and meets the nationally accepted guidelines and standards. However, the reviewer should not be expected to judge whether or not the proposed project should be approved. So far, Tanzania is using an undocumented informal procedure however, efforts are underway to formalise a review procedure. While the approach, methods and criteria differ from country to country, formal EIS review focuses on a number of common aspects as shown in Box D.9.

Box D.9 Key Issues to Consider During EIA Review

- ***Sufficiency of information provided*** (e.g. compliance with ToR, standards, guidelines, and legal provisions; comprehensiveness of information and data quality).
- ***Sufficient attention to EIA process*** (e.g. scoping intensity, quality of public participation processes; adequacy of information dissemination systems; conflict avoidance considerations; and close working relationships between the EIA team and the proponent or project design team).
- ***Reliability of analysis or interpretation*** (e.g. consideration of cumulative effects; appraisal of residual impacts; consistency with state of scientific knowledge; and use of accepted methodologies).
- ***Utility for decision-making*** (e.g. clear description of environmental consequences and their significance; clear statement of monitoring and management options; and clear presentation of issues and recommendations).

Adapted from Sadler (1996)

One of the most difficult areas in the review of EIA reports, is ensuring objectivity since the organisation charged with responsibility for review may have an interest in the decision about the proposal. An independent multi-disciplinary review team increases public confidence and reduces bias. The proposed system for Tanzania includes this through a technical review panel, Box C10. Involvement of, and inputs from the stakeholders (interest groups and of all, affected groups), should be an integral part of the review process. Whatever approach taken, the following steps have been identified as 'good review practice' (Sadler, 1996):

- set the boundaries;
- select reviewer(s);
- use input from public involvement;
- identify review criteria;
- carrying out the review;
- determine shortcomings and deficiencies; and
- document remedial options.

The number of people involved in EIA review can range from one, for a smaller project, to a team where projects are large and where sufficient time and money are available. The expertise required for the team must be assessed on the basis of the most important environmental, socio-cultural and economic issues and aspects that govern the activity. The team of experts can only operate well if it receives co-ordinating support to arrange a site visit to the project, meetings, background information and secretarial backup.

Stakeholder groups including central/local government authorities, local people, NGOs/CBOs and interested parties can be involved in EIA review. Information from local stakeholders is obtained by soliciting feedback from the public display of the EIA report, through feedback from public hearings and, through direct contact with affected and interested peoples.

Box D.10 Proposed Tanzania Technical Review Committee

Members of the TRC will be drawn from key sectors dealing with environment and resource management, those that are currently the focus of investment and relevant research institutions:

- Ministry responsible for environment
- Ministry responsible for natural resources and tourism
- Ministry responsible for urban and rural planning
- Ministry responsible for water
- Ministry responsible for minerals
- Ministry responsible for works
- Ministry responsible for industries and trade
- Institute of Resource Assessment
- NEMC 2 Members (shall be the secretariat)

TRC may coopt specialists in relevant disciplines to assist whatever required.

Depending on the scope and complexity of the activity an independent review panel may be formed.

The importance of the TRC is central in enhancing:

- appropriate technical credibility
- institutional inter-agency co-operation
- accountability and transparency in deciding the fate of a proposal
- minimisation of subjectivity and bias.

EIA documentation and information dissemination.

The conclusions and recommendations of the EIA process need to be communicated in a way that is accessible to a wide range of stakeholders - from 'lay people' to decision-makers. Conventionally, this is achieved through the submission of the environmental impact statement (EIS). Although EIA regulations often specify the minimum contents of an EIS, they do not provide any standards for report presentation. Experience in Tanzania (Mwalyosi and Hughes, 1998) has shown a number of deficiencies in reporting, and this was found to significantly reduce their usefulness for decision-making, impact mitigation and monitoring.

In summary, the EIS discusses the project and its location; the environmental setting; the prediction of impacts on the environment; measures for avoiding or minimising impacts, and for compensating for residual impacts; and a plan for impact management. Importantly, the report must be accompanied by a statement by the proponent on the extent of his agreement with the conclusions of the report, and of his commitment to implementing the identified impact management measures. One way of achieving this is through the inclusion of a stakeholder compliance contract.

It is often useful to supplement the EIS with alternative information tools, such as local language video, local radio programmes, meetings and workshops. These can be particularly important in areas where literacy, social and/or cultural barriers prevent people gaining access to, or being able to understand the EIS. Summaries should be prepared in local languages where appropriate and made public.

ENVIRONMENTAL MANAGEMENT AND MONITORING

Monitoring assesses the effect of the project on the natural and cultural environment. Inclusion of a framework for monitoring can significantly improve the effectiveness of EIA since it can provide a mechanism for ensuring that approval conditions and mitigation measures have been carried-out and testing whether predictions were accurate. In some countries, monitoring requirements for proposals subject to EIA are included in legislation or formal regulations. Nonetheless, on a world-wide basis, the frequency with which follow-up is either absent or perfunctory, amounts to a systematic weakness of the EIA process.

Environmental management plans (EMPs) help to 'bring together' mitigation and monitoring measures, and help ensure that these are properly costed and integrated into project designs and implementation measures. The EMP is likely to be prepared by the developer, and either be incorporated into the EIS or submitted as a separate document provision for which should be integrated into the overall cost of the project. The overall purpose of the EMP is to strengthen the cost effectiveness of implementation of the EIA process by:

- encouraging developers to be more systematic and explicit in the preparation and presentation of the proposed mitigation measures and the intended means of their implementation;
- encouraging competent authorities to be equally systematic and explicit when authorising projects and specifying conditions which the developer must meet in order to secure authorisation;
- ensuring that the agreed mitigation measures are properly incorporated into detailed design and contract documents after authorisation has been granted;
- encouraging all the parties involved to meet the requirements of the EMP and the conditions attached to a project authorisation through the greater visibility and explicitness of its environmental responsibilities and requirements.

ENVIRONMENTAL AUDITING

📖 *Iwalyosi & Hughes 1998*

Environmental auditing refers to the systematic, documented, periodic and objective review of practices related to meeting environmental requirements. In EIA, audit refers to the comparison of actual and predicted impacts for the purpose of assessing the accuracy of predictions and the effectiveness of impact management practices and procedures. In most instances, the auditing process will depend heavily on the existence of relevant and good quality monitoring data. An audit can help EIA process managers to learn from experience, and further refine and improve the EIA process as a whole. The audit of specific EIAs can also help encourage compliance with approval terms and conditions, and provide an opportunity to re-think environmental management practices as the project progresses through the project cycle.

In conducting an environmental audit the following questions have to be considered:

- What environmental impacts were predicted for the project concerned?
- When and where were the predictions stated?
- What actual impacts have been monitored?
- Where are the results recorded?
- How do actual impacts compare with predicted impacts?

DECISION-MAKING

Decision-making takes place throughout the EIA process, Figure D.1. Many decisions are made by the proponent (e.g. choices between various alternatives and project designs). Other decisions may be made jointly by the proponent and the decision-making/environmental authorities (e.g. screening and scoping decisions). However, the main decision in the EIA process, whether or not to allow the proposal to proceed lies with a government agency, following consultation and public participation. The typical decision taken at this stage in the EIA process is not usually a choice between alternatives, but a seemingly simpler choice between authorisation or conditional authorisation and refusal.

This final decision will usually involve a consideration of a range of factors including environmental, political and economic. In certain cases, EIA review bodies have decision-making powers. Whether or not a proposal is approved, there is usually a record of decision and a documentation of how environmental considerations were taken into account and weighed against other considerations. This information is then communicated to all stakeholders including the proponent.

The EIA agency makes recommendations to the project approving authority about the implementation of the project and, in particular, on any conditions that should be attached to project approval. It should also make recommendations on environmental monitoring and post-audit requirements. Specifically, the aspects to be covered in the monitoring programme should include verification of impact prediction, evaluation of mitigation measures, adherence to approved plans, and general compliance with the environmental requirements. This should include conditions on the periodic environmental auditing to check on the various aspect of environmental management, and provide feedback on the adequacy of planning or implementation of the development. The

responsibility of ensuring that appropriate monitoring takes place lies with the EIA Agency or approving authority, while the proponent shall be responsible for meeting the costs.

The EIA Agency and/or the approving authority must provide an opportunity for appeal to a higher body, including to the court of law if malpractice is suspected. Deadlines and time limits should be clearly stated for the EIS review. The review results of the EIS of projects which have been subsequently decided upon should be held on file and be open to public scrutiny.

Figure D.1 Main decision-making points in the EIA process

Decision-maker	*Action(s)*	*Outcome(s)*
Proponent	**Selection of project design or alternatives to be considered**	**Preferred project alternative or design**
EIA agency/ regulator	**Screening of project proposal**	**No EIA required; or, preliminary EIA; or, Full EIA required**
Proponent and/or EIA agency/regulator	**Approval of scoping report or ToR.**	**Approval of report and/or ToR**
EIA agency/ regulator	**Review and acceptance of EIS**	**Approval; or, approval with conditions; or, rejection of EIS**
Planning authority and/or relevant Ministry	**Consideration of EIS, review report, and other planning issues.**	**Approval of project (with conditions); or, rejection of project.**

References and further reading

For more detailed information on the EIA process and EIA Review in Tanzania please see copies of the Orientation and Review Handbooks. Other useful references are:

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Overheads

Session IN: Introduction and Course objectives

Session A1: What is EIA?

Session B1: EIA in Tanzania.

Session C1: Making EIA effective in Tanzania

Session D1: Introduction to EIA process.

Session D2: Preliminary assessment.

Session D3: Scoping.

Session D4: Full EIA study.

Session D5: Review and decision-making.

Session D6: Environmental monitoring and auditing.

Note to trainers: please make a selection of relevant overhead slides for your presentation to fit the time you have available. This particularly applies to Topic D overheads.

INTRO/1 *IRA/IIED*

INTRODUCTION COURSE
Objectives

Objectives:

- **To raise awareness among participants about EIA and its role in decision making and integration into project planning in Tanzania.**
- **To develop an understanding of the EIA process itself.**
- **To investigate the conditions for the effective adoption of EIA in Tanzania.**

Course outline:

A. What is EIA, and what are its benefits?

B. Development of EIA in Tanzania.

C. Making EIA effective in Tanzania.

D. Overview of the EIA process.

Topic A: What is environmental impact assessment?

Slide 1: Topic objectives and outline

Slide 2: Definition and purpose of EIA.

Slide 3: Benefits of EIA.

Slide 4: Who is involved in EIA?

Slide 5: Trends in EIA practice.

Slide 6: The Worldwide adoption of EIA.

Slide 7: African countries with EIA systems.

A1/1 *IRA/IIED*

WHAT IS EIA?
Topic objectives

Objectives:

- **To develop an understanding of EIA and the benefits of its adoption into the project planning process; and**

- **To provide participants with a background to the global development of EIA.**

Outline:

- **Definition and purpose of EIA.**
- **Benefits of EIA.**
- **Who is involved in EIA?**
- **Trends in EIA practice.**
- **Worldwide adoption of EIA.**
- **African experience with EIA systems.**

A1/2 *IRA/IIED*

WHAT IS EIA?
Definition and purpose of EIA

EIA is a process that aims to:

- **identify, predict and evaluate impacts, both positive and negative;**
- **consider project alternatives and mitigation measures;**
- **prevent or reduce negative impacts; and,**
- **optimise positive impacts.**

It should be:

- **a continuous and integral part of the project planning process**
- **seen as a tool to improve decision making; and,**
- **a tool to help achieve sustainable and equitable development.**

An important point to note is that EIA is not anti development, it is a tool for better development.

A1/3 *IRA/IIED*

WHAT IS EIA?
Benefits of EIA

- **Improves project design and can reduce capital and operating costs (i.e. can save $$$).**
- **Integrates short-term needs with long-term goals;**
- **Addresses transboundary issues.**
- **Improves institutional (sectoral) co-ordination.**
- **Improves accountability in planning and decision-making.**
- **Helps avoid conflict, especially with public and stakeholder involvement.**

A1/4 *IRA/IIED*

WHAT IS EIA?
Who is involved in EIA

Five principal groups of stakeholders

- ***Project proponents*** **- responsible for commissioning and paying for the EIA process.**
- ***EIA practitioners*** **- undertake or provide inputs to the EIA process.**
- ***Reviewers*** **- responsible for: screening; ensuring that the EIA follows clear ToR; and, reviewing the final report and to communicate their findings to decision-makers and other stakeholders.**
- ***Decision-makers*** **- responsible for making decisions on project development once an environmental impact statement (EIS) has been submitted.**
- ***The public*** **who are the most important stakeholders. The public can contribute ideas and information that can help to avoid unforeseen problems, improve project design and contribute to monitoring.**

A1/5 *IRA/IIED*

WHAT IS EIA?
Trends in EIA practice

1. **Fear, distrust, and antipathy (hostility).**
2. **Concern about litigation (court action).**
3. **Interest in methodology.**
4. **Concern about procedures.**
5. **Strengthening of procedures.**
6. **Codification of informal procedures.**
7. **EIA recognised as one of many environmental management tools.**
8. **EIA gains political and popular support.**
9. **Desire to make EIA more efficient and effective.**
10. **Full integration into project planning and appraisal.**
11. **Interest in strategic environmental assessment, and other types of impact assessment (e.g. SIA, HIA).**

A1/6 *IRA/IIED*

WHAT IS EIA?
Worldwide adoption of EIA

EIA is widely institutionalised and accepted throughout the world, and interest continues to grow.

- **Fifty five countries and federations**
- **All 6 multilateral development banks**
- **Eleven bilateral development agencies**
- **Eight United Nations organisations**
- **Six intergovernmental organisations**

A1/7 *IRA/IIED*

WHAT IS EIA?
African countries with EIA systems

- **Egypt**
- **Ghana**
- **Zimbabwe**
- **Uganda**
- **Nigeria**
- **Namibia**
- **South Africa**

Topic B: EIA in Tanzania

Slide 1: Topic objectives.

Slide 2: Landmarks in EIA development.

Slide 3: Map of EIA's undertaken up to 1997.

Slide 4: Characteristics of EIA in Tanzania.

Slide 5: Factors constraining EIA development.

Slide 6: Potential benefits of EIA for Tanzania

Slide 7: Signs of hope.

B1/1 *IRA/IIED*

EIA IN TANZANIA
Topic objectives

Objectives:

- **To examine the history and evolution of EIA in Tanzania.**
- **To provide a background on the present status of EIA in Tanzania.**
- **To look to the future development of EIA in Tanzania.**

Outline:

- **Landmarks in EIA development in Tanzania.**
- **Map of EIA's undertaken up to 1997.**
- **Characteristics of EIA in Tanzania.**
- **Factors constraining EIA development.**
- **Signs of hope.**

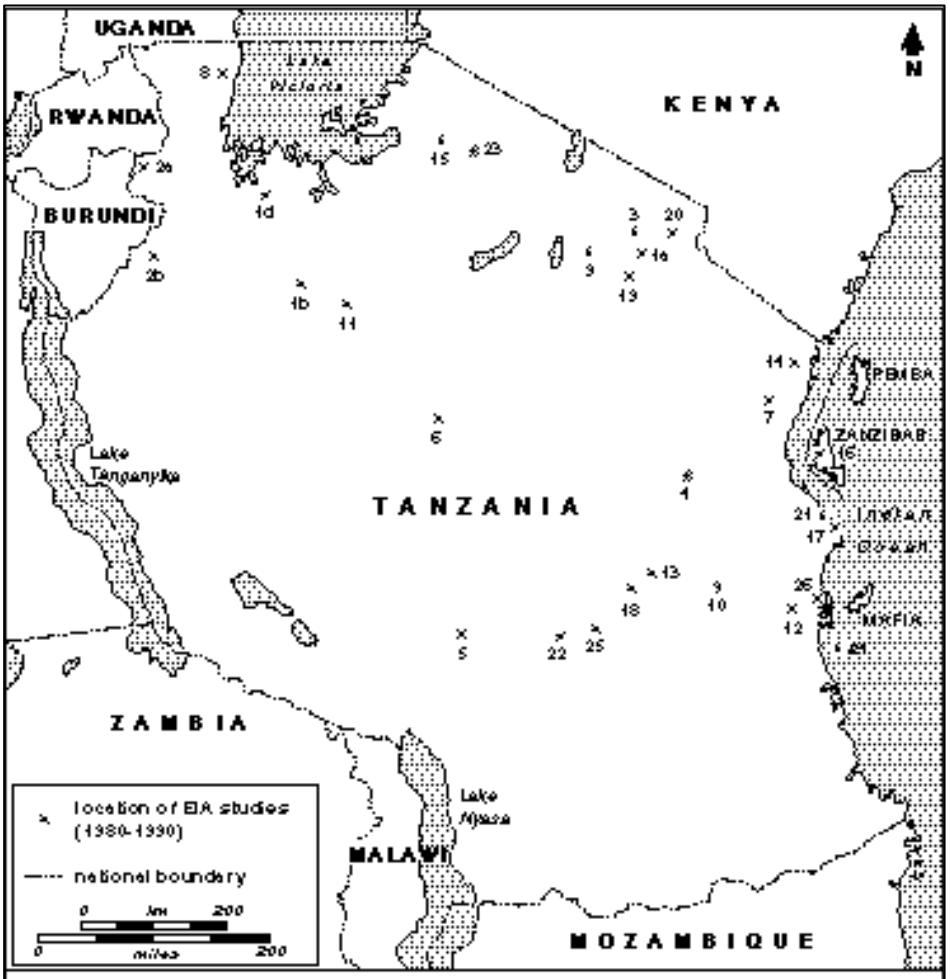
B1/2 *IRA/IIED*

EIA IN TANZANIA
Landmarks in EIA development

- ***1980*** **First EIA on Stiegler's Gorge Hydropower and Flood Control Project.**
- ***1992*** **Tanzania signs Agenda 21.**
- ***1993*** **Zanzibar passes National Environmental Policy.**
- ***1994*** **National Conservation Strategy for Sustainable Development (NCSSD); National Environmental Action Plan (NEAP).**
- ***1995*** **EIA Needs Assessment for Training; Tanzania signs African ministerial pledge to promote EIA.**
- ***1996*** **Tanzania's President re-affirms commitment to pledges made at the 1992 UNCED.**
- ***1997*** **Tanzania prepares first draft national guidelines for EIA; National Environmental Policy (final).**
- ***1998*** **First national EIA training courses.**

  Institutional study.

EIA IN TANZANIA
Map of EIA's undertaken up to 1997



Location of EIA studies (1980-1990)

1a Small Scale Mining (Mererani)
1b Small Scale Mining (Kahama)
1d Small Scale Mining (Geita)
2a Refugee Influx (Ngara)
2b Refugee Influx (Kibondo)
3 Graphite Mining Project (Mererani)
4 Dakawa II Integrated Project
5 Madibira Rice Project
6 Manyoni-Kigoma Road Project (Iligi)
7 Pangani Falls Hydropower Project
8 Mubuku-Bukoba-Lusahanga Road Project
9 Mukuyuni-Musoma Road Project (Mukuyuni)
10 Stiegler's Gorge Power & Flood Control Project
11 Singida-Itzega Road Project (Itzega)
12 Ikwiriri-Somanga Road Project
13 Cathodic Protection Station (Mikumi NP)
14 Tanga Oil Terminal Development
15 Grumeti Serena Tented Camp Project
16 Changuu Island Development (Zanzibar)
17 Tanzam Highway Rehabilitation Project
18 Ikela Water Scheme
19 Makuyuni-Oldeani Road Project (Makuyuni)
20 Moshi Pesticide Plant
21 Ubungo Emergency Power Plant
22 Lower Kihansi Hydropower Project
23 Serengeti Serena Lodge Project
24 Songo Songo Gas Development Project
25 Kilombero Valley Hardwood Project
26 Rufiji Delta Shrimp Farming Project

B1/4 *IRA/IIED*

EIA IN TANZANIA
Characteristics of EIA in Tanzania

- **Too many EIAs have been 'preliminary' in nature.**
- **Many have been donor-driven and often only used to secure aid support.**
- **EIAs have often been mis-used for example to 'smother' growing public opposition, or to 'justify' projects.**
- **EIAs often start too late and finish too early.**
- **Tanzania lacks its own standards, such as those for air emissions, or effluent discharges.**

B1/5 *IRA/IIED*

EIA IN TANZANIA
Factors constraining EIA development

- **Lack of political will**
- **Lack of awareness of EIA amongst public, politicians and planners**
- **Misconceptions of EIA**
- **Conflicts between key government agencies**
- **Limited of technical capacity**
- **Lack of financial resources**

B1/6 *IRA/IIED*

EIA IN TANZANIA
Potential benefits of EIA for Tanzania

- **To help ensure that as economic reforms gather pace, economic development does not unduly impact on environmental and local resources.**

- **To help ensure the benefits of economic development outweigh any negative impacts.**

- **To strengthen the country's environmental management capacity.**

- **To complement and strengthen Tanzania's ability to improve policies, programmes and projects to achieve more sustainable and equitable development.**

B1/7 *IRA/IIED*

EIA IN TANZANIA
Signs of hope

- **TANAPA EIA policy yields promising results.**
- **Preparation of (draft) national EIA procedures and guidelines (including set for Zanzibar).**
- **Study on environmental legislation and institutions underway under Vice President's Office.**
- **TANESCO mandates the use of EIA. This has led to improved environmental and social performance.**
- **Selected use of EIA has led to improved project design.**
- **Programme of national and district level capacity building and training has started.**

Topic C1: Making the EIA process effective

Slide 1: Topic objectives

Slide 2: Summary of basic conditions for EIA

Slide 3: Initiating the EIA study

Slide 4: Commencement of EIA studies in Tanzania

Slide 5: Integrating EIA into project planning

Slide 6: Expertise required for EIA study

Slide 7: Interdisciplinary concept for an EIA of a road project

Slide 8: Financial cost of EIA studies

Slide 9: Definitions of public and stakeholder involvement

Slide 10: Benefits from (public) stakeholder involvement

Slide 11: Costs from lack of (public) stakeholder involvement

Slide 12: Tanzania experiences - conflict

Slide 13: Tanzania experiences - raised expectations

Slide 14: Summary of the ingredients for an effective EIA system

C1/1 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Objectives

Objectives:

- **To review the conditions required for an effective EIA system.**
- **To present the challenges and development of the EIA system in Tanzania.**

Outline:

- **Summary of basic conditions for EIA.**
- **Initiating the EIA study.**
- **Integrating EIA into project planning.**
- **Expertise required for EIA study.**
- **Financial cost of EIA studies.**
- **Public and stakeholder involvement.**

C1/2 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Summary of basic conditions for EIA

- **Policies, laws and institutional arrangements**
- **Human resources**
- **Financial resources**
- **Sufficient time for study**
- **Early initiation of EIA study**
- **Environmental standards and guidelines**
- **Stakeholder involvement**

C1/3 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Initiating the EIA study

- **Environmental assessment should be part of the overall project planning and assessment process.**

- **The full integration of environmental assessment of a project with all other aspects will increase the likelihood of its results being sustainable.**

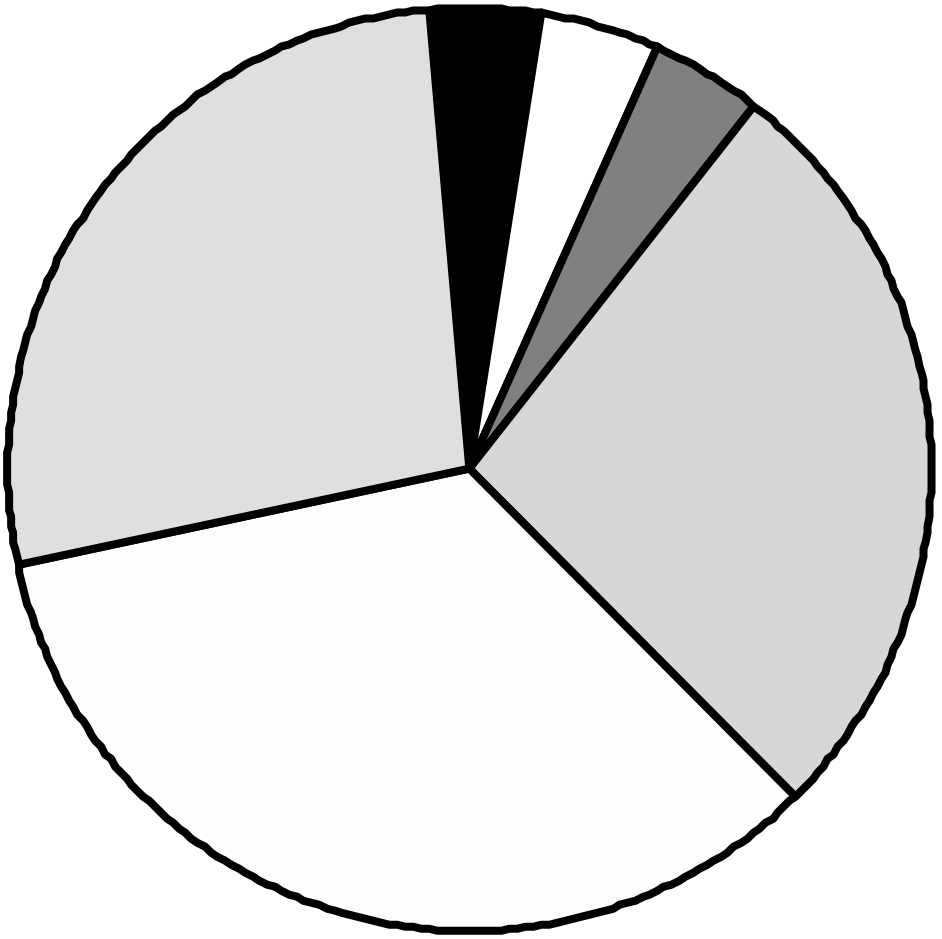
- **EIA studies should start as early as possible in the project cycle, preferably at the identification and concept stage.**

- **In Tanzania, EIA studies almost invariably started too late to influence significantly project design, by which time most key decisions had already been made.**

- **The EIA study can take anything from 2 months to a year to complete - depending on the scale/complexity of the project, and the availability of baseline data.**

C1/4

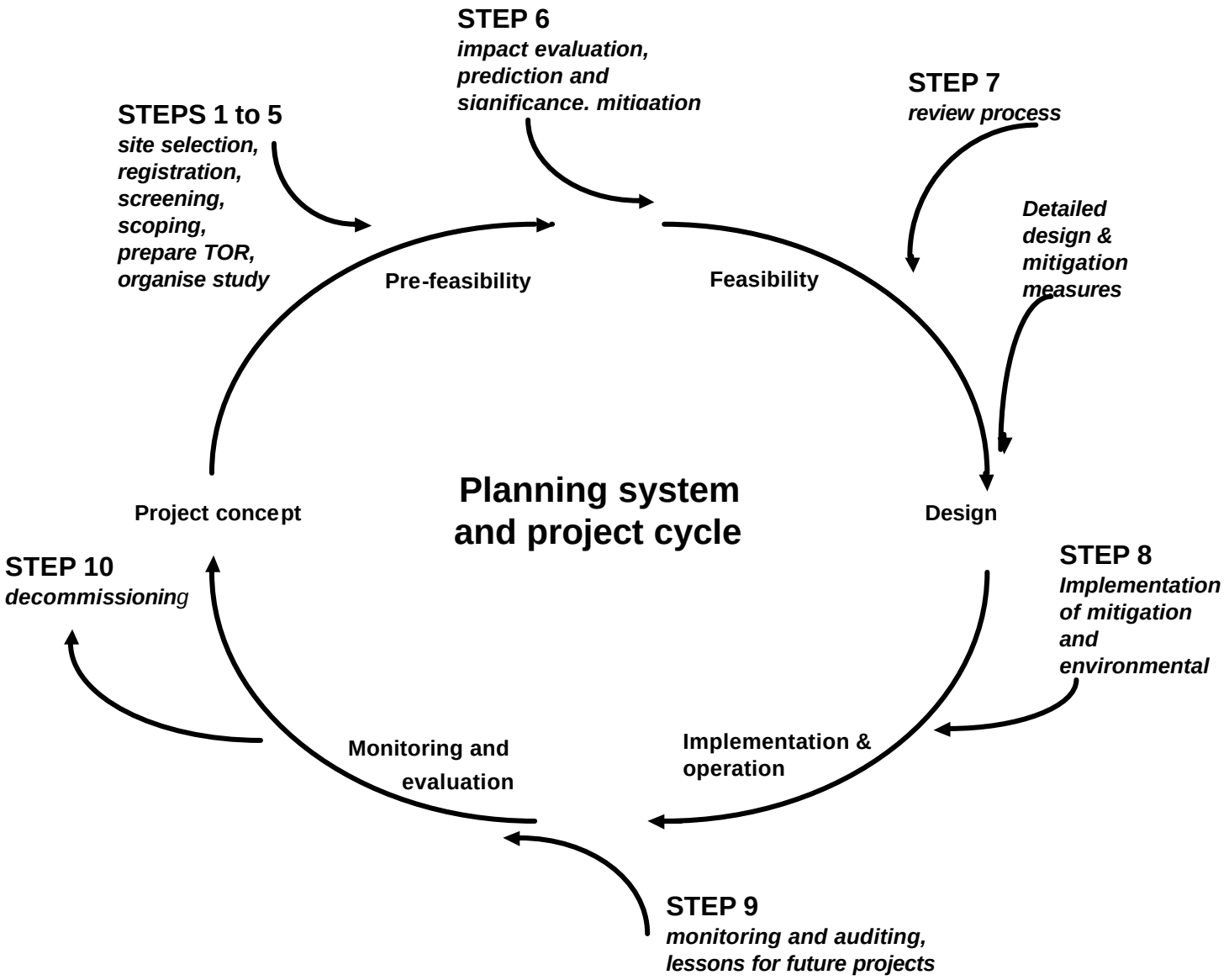
MAKING THE EIA PROCESS EFFECTIVE
Commencement of EIA studies in Tanzania



- **Concept - 4%**
- **Pre-feasibility - 4%**
- **Feasibility - 4%**
- **Design - 27%**
- **Implementation - 34%**
- **Monitoring and evaluation - 27%**

C1/5 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Integrating EIA into project planning



C1/6 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Expertise required for EIA study

- **Ensure that the EIA team has appropriate expertise for the EIA study. Mwalyosi and Hughes (1998) have found that in Tanzania:**

  ◊ **the expertise used to undertake EIA was often inappropriate to the type of projects being assessed; and,**

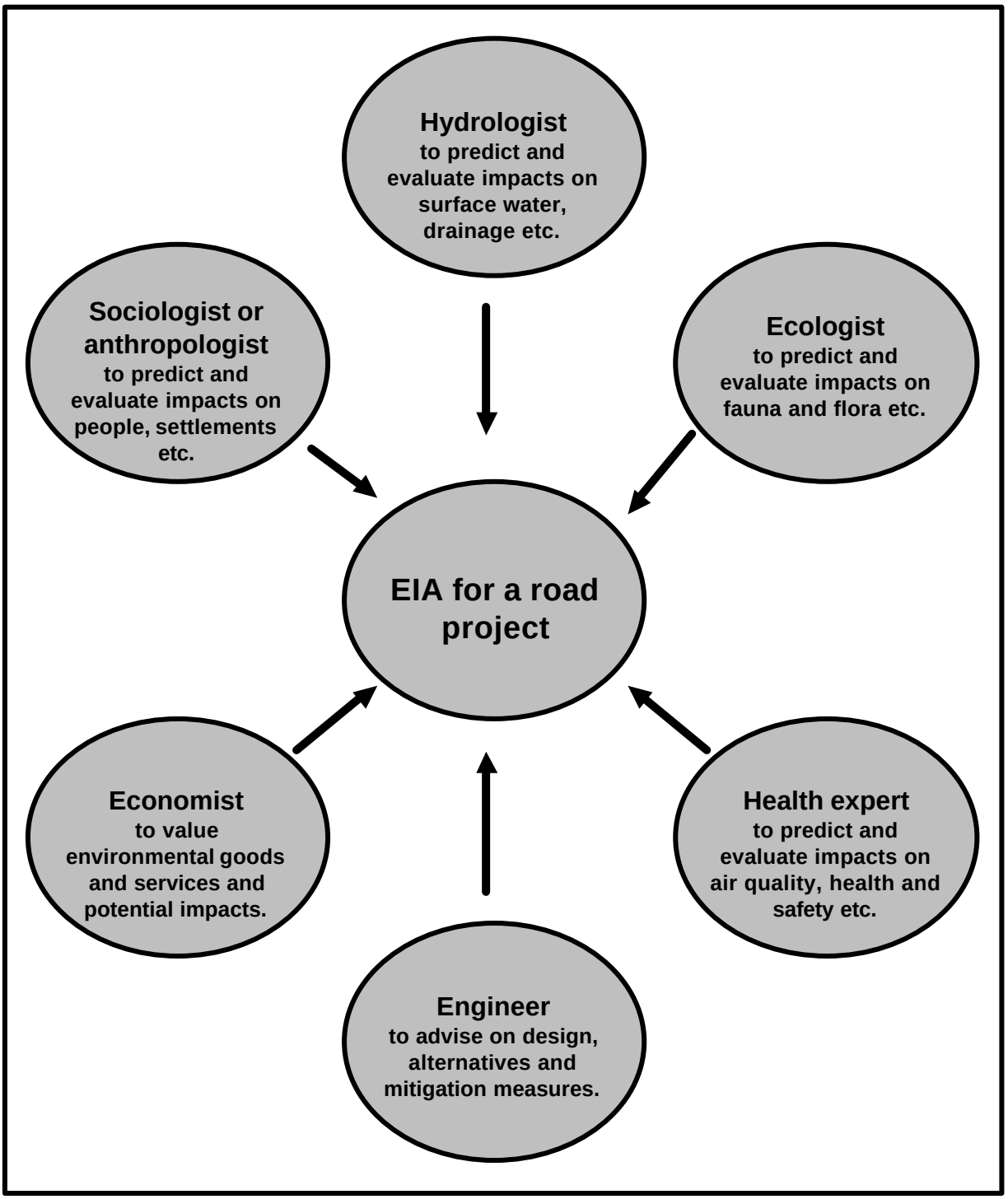
  ◊ **EIA teams often lack expertise crucial to the issues under consideration.**

For example:

- **the EIA team for an irrigation project was dominated by biodiversity experts and lacked social, health and hydrological expertise. The EIS focused on biodiversity management issues, whilst other crucial issues (e.g. impacts on downstream hydrology and water users, and health) were given less prominence.**

- **an EIA on graphite mining project in Arusha Region, prepared by engineering consultants, lacked the appropriate socio-economic and ecological assessment, and issues such as storage and disposal of spoil, site restoration and socio-economic impacts on local people were under-assessed.**

MAKING THE EIA PROCESS EFFECTIVE
Interdisciplinary concept for an EIA of a road project



C1/8 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Finanical cost of EIA studies

Type of project	Cost of EIA (000, US$)	Project cost (000, US$)	% of total project costs
Thermal power generation, Ghana	250	400,000	0.06
Forest management, Tanzania	131	44,200	0.28
Energy sector development, Kenya	510	1,000,000	0.05
Energy sector development, Malawi	180	231,300	0.08

Adapted from Mercier, 1995

C1/9 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Definitions of public and stakeholder involvement

- ***STAKEHOLDERS*** **are people and institutions who have an interest in the design, implementation and sustainability of a project. This includes those positively and negatively affected.**

- ***STAKEHOLDER INVOLVEMENT*** **involves processes whereby all those with a stake in the project participate in decisions on planning and management.**

- ***PUBLIC INVOLVEMENT*** **is the participation of "public" stakeholder groups or individuals in planning and management e.g. a village or community group.**

It is important to realise that while public involvement is closely related to stakeholder involvement - the latter does not necessarily mean the same, e.g. the Ministry of Agriculture may involved as stakeholder but this does not mean that public involvement has occurred.

C1/10 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Benefits from (public) stakeholder involvement

- **Helps the EIA to address relevant issues, including those seen as important by local communities.**
- **Helps to harness traditional knowledge which conventional approaches may overlook.**
- **Improves information flows between proponents and stakeholders and increases the understanding and 'ownership' of a project.**
- **Enables local communities to influence project design, so that it responds to their needs.**
- **Helps to identify important environmental characteristics or mitigation opportunities that might be overlooked.**
- **Helps to ensure that the magnitude and significance of impacts has been properly assessed.**

C1/11 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Costs from lack of (public) stakeholder involvement

- **Conflicts between different levels of government, or between different governmental agencies and failure to gather local support for project.**
- **Risk of marginalising potentially valuable contributors to the decision-making process.**
- **Failure to tailor projects to meet local needs and priorities.**
- **Lack of accountability can lead to ineffective or inefficient working practices and corruption.**
- **Failing to draw on local expertise represents a potential lost opportunity for making a good project better.**
- **Can lead to important and locally specific impacts being overlooked in project design.**
- **Communication problems can create divisions within local communities, and breed resentment between local communities and project proponents.**
- **Reliance on interventions by outside experts, limiting the learning of new possibilities by local stakeholders.**
- **Inability to prevent the concentration of project benefits accruing to a small number of influential beneficiaries.**

C1/12 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Tanzania experiences - conflict

A mining project in Merelani has been affected by:

- **conflicts between the mine operator and local artisanal miners over disputed mining claims and concessions;**
- **this has led to physical fights and deaths;**
- **this has resulted in social division and disruption, and an increase in security costs for the commercial mine.**

These problems may have been avoided if the original EIA had involved local stakeholders.

C1/13 *IRA/IIED*

MAKING THE EIA PROCESS EFFECTIVE
Tanzania experiences - raised expectations

A common problem with many projects is the raised or false expectations form local stakeholders.

- **An EIA of a forestry plantation project in Kilombero involved local stakeholders.**
- **Expectations of the project from villagers and district officials were different from those proposed.**
- **The EIA helped change the project design to meet these expectations, and also helped provide a better understanding of the project by local stakeholders.**
- **Thus the involvement of local stakeholders in the EIA can be seen to have both benefited local groups and the project proponents, and avoided potential conflicts between the two.**

MAKING THE EIA PROCESS EFFECTIVE
Summary of the ingredients for an effective EIA system

1. Institutional and Political

- **Clear procedural guidelines**
- **Commitment**
- **Adequate resourcing**
- **Effective review process**

2. Human Resources

- **Awareness**
- **Capacity development**
- **Building teamworking skills**

3. Financial

- **Usually a small proportion of project costs**

4. Timing

- **Start early and don't stop too soon!**

5. Environmental standards and guidelines

- **National standards and guidelines; or**
- **Access to, and acceptance of international standards and guidelines**

6. Public Involvement

- **Involve all stakeholders ASAP**
- **The use of participatory and adaptive approaches**

Topic D: Overview of the EIA process

Session D1: Introduction and overview of EIA process

Session D2: Preliminary assessment.

Session D3: The “Full” EIA study.

Session D4: Review, decision making, and follow up.

Session D1: Introduction and overview of EIA process

Slide 1: Topic objectives and outline
Slide 2: Flowchart of the EIA process

D1/1 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Topic objectives and outline

Objectives:

- **To develop an understanding of the EIA process**

Topic outline:

- **D1: Review of different stages of EIA.**
- **D2: Preliminary assessment – registration, screening and scoping.**
- **D3: Full EIA - impact assessment, prediction, evaluation and mitigation.**
- **D4: Review, decision-making, and follow up.**

D1/2 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Main stages in the EIA process

Actions		Outcomes
Review of projects to assess if an EIA is necessary.	**(Registration) Screening**	**Decision to proceed with environmental assessment**
Identification of major environmental issues and areas of impacts of project, and project alternatives.	**Scoping**	**Potential and/or impacts of project to assessed and evaluated. ToR for study.**
Assessment of impacts, and identification of mitigation measures, and alternative options	**Impact prediction and evaluation**	**Magnitude and significance of impacts & mitigation or enhancement measures**
Preparation and consultation of draft and final EIS.	**Environmental Impact Statement**	**Environmental Impact Statement**
Public and statutory review of EIS, and decision on whether to proceed.	**Review and decision making**	**Yes or no to project**
Monitoring of key environmental variables, & auditing against standards/plan	**Environmental monitoring & auditing**	**Public reports (part of environmental management system/plan)**

Session D2 - Preliminary assessment

Slide 1: The first step – registration.

Slide 2: The purpose and role of screening in EIA.

Slide 3: Screening in Tanzania.

Slide 4: Definition and role of scoping.

Slide 5: Project planning and alternatives.

Slide 6: Example of alternatives.

Slide 7: Definition of boundaries for EIA study.

Slide 8: Example of spatial boundaries.

Slide 9: Example of temporal boundaries.

Slide 10: Example of institutional boundaries.

Slide 11: Format of ToR for further EIA studies.

D2/1 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
The first step - registration

- **It is the first step in any project planning process.**
- **It is undertaken when a project proponent registers a project with the planning authority(ies).**
- **It is part of the standard process for obtaining official permission for a project to proceed.**
- **It is often the responsibility of the planning authority to refer the project to other regulatory authorities.**
- **This should include the authority responsible for environment assessment regulation and review.**
- **The environment assessment regulator will then screen the project.**

OVERVIEW OF THE EIA PROCESS
The purpose and role of screening in EIA

Screening is:

- **the initial review of projects to determine if an EIA is required, and to avoid the unnecessary expense of a full EIA for a project which does not need it; and**
- **undertaken to ensure all projects with potentially significant impacts are subject to an EIA, and to focus resources on those projects most likely to have significant impacts.**

Screening is undertaken:

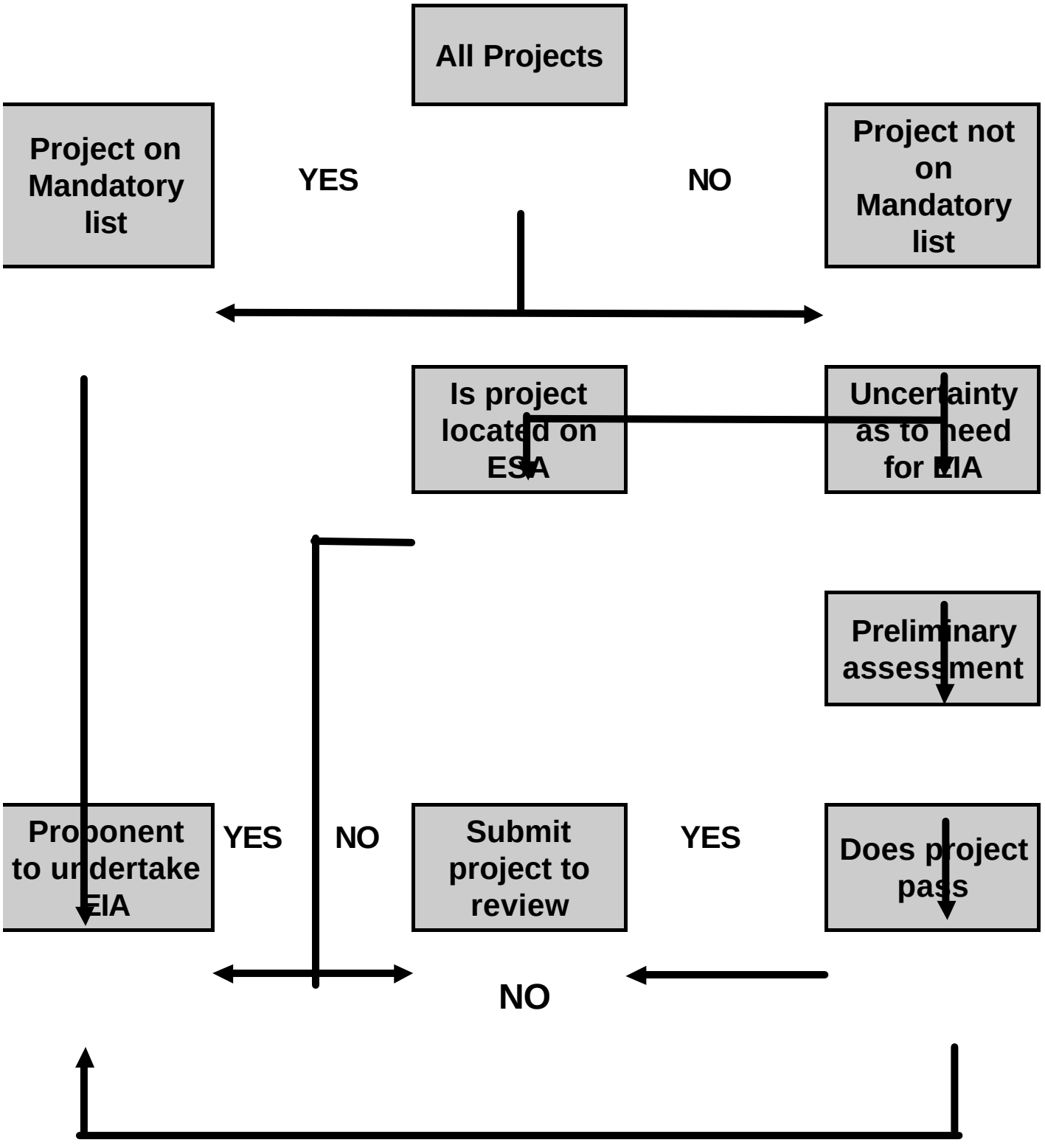
- **by the government regulator or environmental agency (e.g. NEMC).**

Four decisions are possible:

1. **Project can proceed without an EIA.**
2. **Further studies are needed before a decision on whether an EIA is needed can be taken.**
3. **The project definitely requires an EIA, or it is a mandatory requirement.**
4. **To reject the project outright for completely inappropriate projects, e.g. a multi-storey hotel in a national park. This is usually very rare.**

D2/3 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Proposed screening process for Tanzania



OVERVIEW OF THE EIA PROCESS
Scoping

Scoping is a key stage in the EIA process in that it:

- **Reject projects that have major adverse impacts without any possibility of mitigation.**
- **Allows projects with no major or significant impacts to proceed to implementation without a full EIA.**
- **Ensures that no potentially significant impacts are missed, and are included in the ToR for the main EIA.**
- **Ensures that resources are not wasted by assessing small or insignificant impacts in the main EIA.**

It also:

- **Identifies information needs and assessment methods.**
- **Identifies project alternatives.**
- **Provides the first, and most important, opportunity to identify and involve stakeholders.**
- **Determines the spatial, temporal and institutional boundaries of the EIA study.**

Responsibilities:

- **Scoping is usually the responsibility of the proponent, and is often undertaken by consultants.**

D2/5 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Project planning and alternatives

Some points:

- **The objectives of a project can nearly always be achieved using different alternatives or designs.**
- **The consideration of different alternatives or designs is routine in project planning processes - or should be!**
- **Always consider the without project situation - this can then be used as a baseline to determine the incremental effects and impacts of a project.**
- **Environmental assessment should consider all project alternatives - different alternatives are unlikely to have the same set or degree of impacts.**
- **The assessment of alternatives should occur as early as possible in EIA (and all other aspects of project planning).**

D2/6 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Example of alternatives

Project proposed	*Alternative*	*Category*
A. Coal fired power station near a major city.	**1. Hydropower station in highlands.**	**Input & location**
	2. Located away from city near river	**Location**
	3. Energy efficiency programme.	**Demand**
B. Upgrading of a road to a dual carriageway.	**1. Investment in public transport.**	**Activity**
	2. Construction of relief road	**Location**
	3. Phased construction of road.	**Scheduling**
C. 5000 ha irrigation scheme to increase food production.	**1. Rehabilitation of existing small-scale irrigation schemes**	**Activity & location**
	2. Improved rainfed agricultural systems.	**Process & location**

D2/7 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Definition of boundaries for EIA study

- ***Spatial boundaries:***

These indicate whether impacts are likely to occur at a local, regional, national or international level.

- ***Temporal boundaries:***

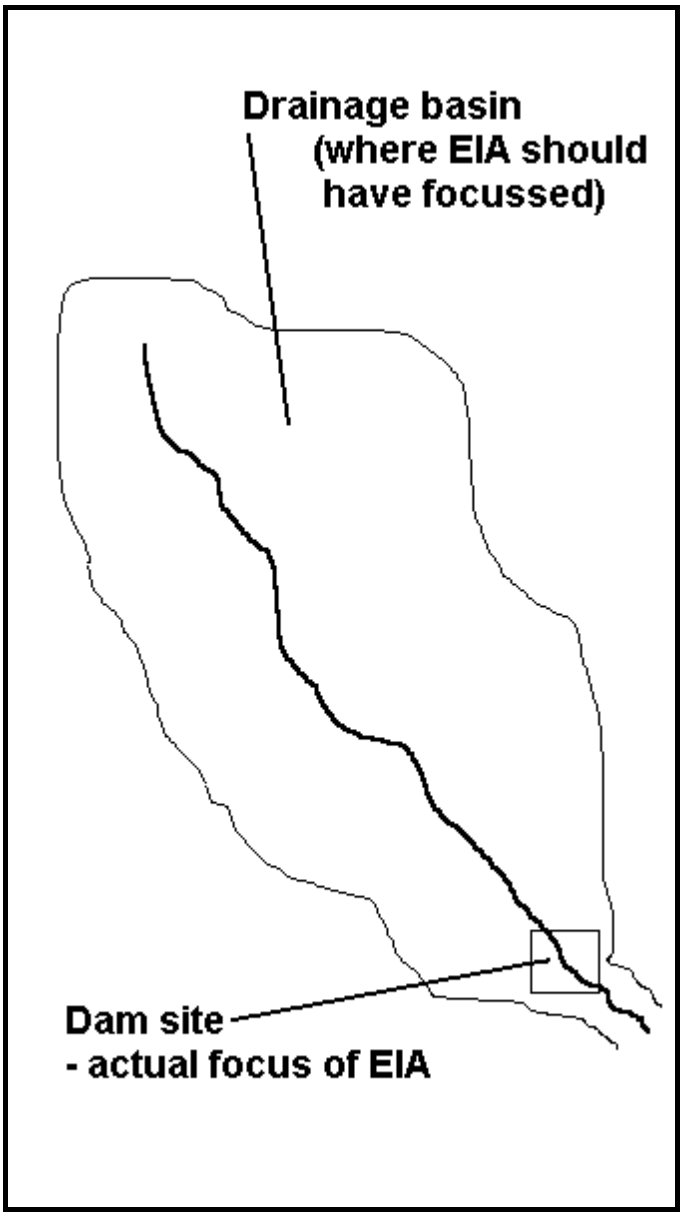
These refer to project lifespan (construction, operation and decommissioning) and the reversibility of impacts. For example, impacts may be short-lived or long-term.

- ***Institutional boundaries:***

These refer to political boundaries, acts and regulations, and ministerial or departmental mandates.

OVERVIEW OF THE EIA PROCESS
Example of spatial boundaries

This example is based on the case of the Pangani Falls Hydropower Scheme (not to scale).



D2/9 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Example of temporal boundaries

The temporal boundaries for a mining project would be:

- **Construction.**
- **Mining operations.**
- **Decommissioning and site restoration.**

D2/10 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Example of institutional boundaries

***Example of the Makuyuni to Ngorongoro and Oldeani Road Access Project*:**

- **Arusha Regional Development Directorate**
- **Four District Authorities (Mbulu, Ngorongoro, Monduli, Arumeru)**
- **Tanzania National Parks**
- **Wildlife Department**
- **Ngorongoro Conservation Area Authority**
- **Lake Manyara National Park authority**
- **Tarangire National Park Authority**
- **National Livestock Authority**
- **Ministry of Public Works**
- **Ministry of Agriculture**
- **Local institutions**

OVERVIEW OF THE EIA PROCESS
Format of ToR for further EIA studies

- ***Introduction:*** **background on the proponent, the project proposal, and the objectives of the study.**
- ***Project information:*** **description of project and alternatives.**
- ***Specific EIA requirements*****: environmental issues and impacts likely to be relevant to the project; the need for the EIA to address measures for avoiding, mitigating and managing impacts.**
- ***Field versus desk work:*** **expectations regarding the level of field work e.g. updating existing information sources, or requirements for new surveys etc.**
- ***Working relationships:*** **nature of relationship between EIA team, the proponent, and other stakeholders.**
- ***Stakeholders:*** **indicate the need to identify and involve all stakeholders identified during scoping.**
- ***Time:*** **duration and schedule for undertaking and reporting on the EIA process should be specified.**
- ***Reporting requirements:*** **ToR should specify the format and main headings for the EIA study report.**

Session D3: "Full" EIA study

Slide 1: Key components of a full EIA study.

Slide 2: Impact identification, prediction and evaluation.

Slide 3: Impact identification example of a checklist.

Slide 4: Example of significance of impacts of the Stiegler's Gorge Hydropower Project.

Slide 5: Example of matrix for Dakawa Irrigation Project.

Slide 6: Mitigation measures.

Slide 7: Example of impacts and mitigation measures for the Songo Songo Gas development project.

Slide 8: The Environmental Impact Statement (EIS).

Slide 9: Typical headings of an EIS.

D3/1 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Key components of a detailed/full EIA study

- **Impact identification***
- **Impact prediction***
- **Impact evaluation and significance (importance)***
- **Development of mitigation options and plans***
- **Preparation of environmental impact statement (EIS) and its dissemination.**

**** - For different project alternatives/designs***

D3/2 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Impact identification, prediction and evaluation

Definitions:

Impact identification **- listing of all potential positive and negative impacts of a project.**

Impact prediction **- determining the magnitude and effect of a particular impact or set of impacts.**

Impact evaluation **- determining the significance or importance of a predicted impact.**

D3/3 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Checklist for the Pangani Falls Redevelopment Project

Activity	*Impacts*
Land clearance, bulldozing	**Visual intrusion, acceleration of run-off, dust, noise, diesel fumes, soil erosion, soil compaction, exposure of sub-soil, silt to river, destruction of vegetation.**
Stone crushing	**Dust, noise, soil erosion, lethal hazard to workers.**
Traffic	**oily waste run-off, noise, hazard to pedestrians and animals, dust to roadside.**
Impoundment of the headpoint	**Inundation of swamp, loss of wetland vegetation, loss of habitat for wildlife especially passerine birds; desiccation of the riverbed between the headrace and tailrace, alteration of the aquatic and riparian ecology, scoring of riverbed downstream - changing the environment for aquatic life.**
Road making, trenching	**Noise, visual intrusion, dust, fumes, hard surfacing causing alteration of drainage, acceleration of run-off and reduced infiltration, soil erosion, soil compaction, exposure of sub-soil, silt to river, contamination of groundwater.**

(source:TANESCO, 1994)

D3/4 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Example of significance of impacts of the Stiegler's Gorge Hydropower Project

ACTIONS / *TOPIC*	Primary Development	Reservoir Operation	Operation of Construction Camp	Road & Power Transmissio n in Game
Energy Production	**+3**	**+2**	**0**	**0**
Tourism	**-3**	**-1**	**-3**	**+3**
Floodplain Agriculture	**-3**	**+1**	**-3**	**0**
Floodplain Fisheries	**-3**	**-2**	**-3**	**0**
Delta Fisheries	**-2**	**-2**	**-2**	**0**
Reservoir Fisheries	**+2**	**+2**	**+2**	**0**
Health	**-1**	**-1**	**0**	**0**
Image of Project	**+2**	**0**	**+2**	**0**

Legend:

+3 Very significant positive impact
+2 Significant Positive impact
+1 Lightly positive impact
-3 Very significant negative impact
-2 Significant negative impact
-1 Slightly negative impact
0 No impact

OVERVIEW OF THE EIA PROCESS
Example of rating matrix for Dakawa Irrigation Project

Impact	Development options			
	Without project	Rehabilitation for NAFCO only	Rehabilitation for NAFCO & smallholders	Rehabilitation for NAFCO & new scheme for smallholders
Biophysical environment				
1. Hydrology				
• **flooding**	**-2**	**0**	**0**	**0**
• **downstream water availability**	**0**	**-2**	**-2**	**-3**
• **groundwater availability**	**0**	**0**	**0**	**0**
• **pollution from agrochemicals**	**0**	**-2**	**-2**	**-2**
2. Soil				
• **alkalinity (increase in soil pH)**	**-1**	**-2**	**-2**	**-2**
• **soil erosion**	**0**	**0**	**0**	**-1**
3. Ecology				
• **deforestation**	**-1**	**-1**	**-1**	**-2**
• **fauna (land)**	**-1**	**-2**	**-2**	**-3**
• **fish**	**+1**	**+2**	**+2**	**+3**
Socio-economic environment				
1. Land tenure and use rights				
• **settlement and in-migration**	**+/-**	**+/-**	**+/-**	**+/-**
• **pastoral rights**	**-1**	**-2**	**-2**	**-3**
• **land values**	**+1**	**+2**	**+4**	**+4**
• **fishing rights**	**+1**	**+2**	**+3**	**+3**
• **grazing rights**	**-1**	**-1**	**-1**	**-3**
• **fuelwood**	**-1**	**-1**	**-1**	**-2**

NB Uses ratings from –5 to +5

OVERVIEW OF THE EIA PROCESS
Mitigation measures

***Mitigation measures* aim to avoid, reduce, and remedy significant adverse effects of development activities.**

***Enhancement measures* aim to increase and maximise the positive environmental impacts of development activities.**

***Mitigation* seeks to:**

- **find better ways of doing things;**
- **maximise project benefits by eliminating or minimising significant negative impacts;**
- **make sure that the public/individuals do not bear costs which are greater than benefits; and,**
- **enhance benefits by integrating mitigation measures and costs into the overall design.**

***Types* of mitigation measures (in order of priority):**

- ***Avoiding* the impacts altogether;**
- ***Reducing* or minimising the degree/magnitude of the action;**
- ***Rectifying* the impact by rehabilitating, or restoring the environment after the impact has occurred; and,**
- ***Compensation* for damaged or lost resources.**

D3/7 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Example of impacts and mitigation measures for the Songo Songo Gas development project

Development Activity	*Potential Impacts*	*Mitigative Measures*
Clearing before construction	• **Surface erosion** • **Sedimentation in water bodies**	• **Dry season construction** • **Drainage and erosion control measures, reclamation**
Pipeline ditching, grading and backfilling	• **Interruption of surface & subsurface drainage,** • **Sedimentation,** • **Prevention of fish movement**	• **Dry season construction,** • **Drainage and erosion control measures**
Construction machinery	• **Fuel spills could damage aquatic habitats**	• **Careful handling of fuel,** • **Spill contingency plan**
Surface run-off from gas and power plants during operation	• **Liquid hydrocarbons (both plants) or fuel spills (gas plant only)**	• **All surface run-off directed toward a retention pond,** • **Water testing and treatment before release,** • **Employee awareness,** • **Spill contingency plan**

D3/8 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
The Environmental Impact Statement (EIS)

- **Findings of the EIA process need to be communicated and accessible to a wide range of stakeholders - from the public to decision-makers.**

- **This is usually in the form of a written EIA report termed *The Environmental Impact Statement (EIS)*.**

- **The EIS should:**

  - ◊ **identify, predict and interpret the likely impacts of the proposed project and alternatives (inc. the no project option);**
  - ◊ **provide information that can be used to improve decision-making;**
  - ◊ **include a plan for impact mitigation and management;**
  - ◊ **include a plan for environmental monitoring and auditing; and,**
  - ◊ **help the public and stakeholders to understand the proposal and its impacts on the community and environment.**

D3/9 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Typical headings of an EIS

I. Executive Summary

II. Introduction

III. Project Description

IV. Project stakeholders and public involvement

V. Description of Institutional, Policy and Legislative Environment

VI. Description of Existing Social and Biophysical Environment

VII. Environmental Planning and Design

VIII. Assessment of Environmental Impacts

IX. Impact Mitigation Planning and Management

X. Economic and Financial Evaluation

XI. Summary and Recommendations

Appendices

Session D4: Review, decision making and follow up

Slide 1: Objectives of EIA review

Slide 2: Types of EIA review

Slide 3: Flowchart of the EIA review process

Slide 4: Review decisions

Slide 5: EIA and decision-making - overview

Slide 6: Decision points in the EIA process

Slide 7: Final decision-making in the EIA process

Slide 8: Environmental monitoring.

Slide 9: Environmental auditing.

D4/1 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Objectives of EIA review

- ***Quality of the EIS***
  - ◊ **to determine if the EIS provides an adequate assessment of the potential impacts of a project;**
  - ◊ **to ensure EIS addresses all key issues and considers alternative options and designs;**
  - ◊ **to ensure that the EIS complies with the Terms of Reference (ToR).**
- ***Adequacy of the report for decision-making***
  - ◊ **to ensure that the EIS presents key findings clearly, logically and explicitly;**
  - ◊ **to identify gaps and further information needs required for decision-making.**
- ***Opportunity for stakeholder and public involvement***
  - ◊ **to ensure that stakeholders have not only been consulted, but also participated in the EIA process;**
  - ◊ **to allow stakeholders and public to comment and voice opinions on EIS.**

D4/2 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Types of EIA review

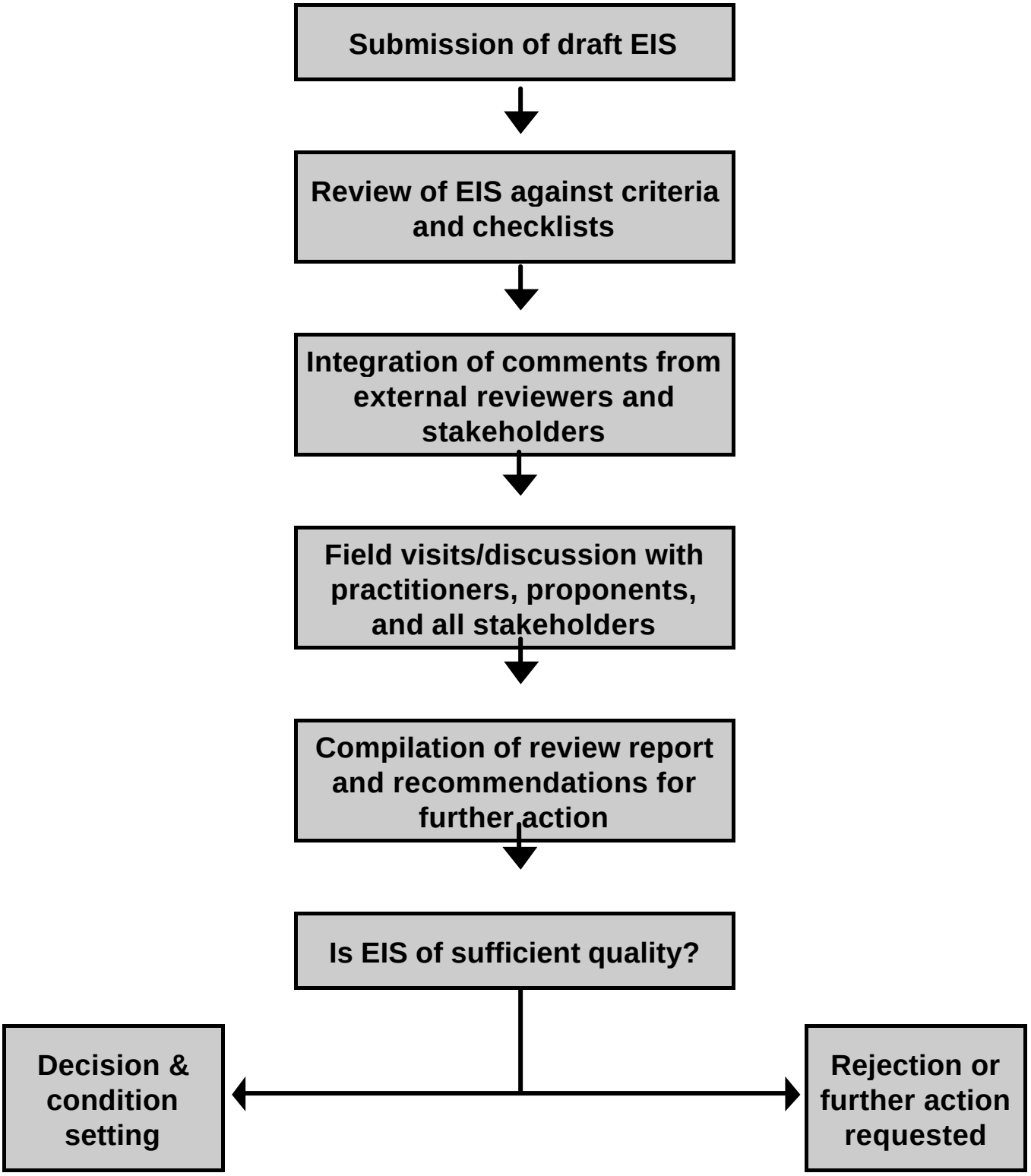
- ***Formal Review:*** **undertaken by government, independent authorities, independent experts, review panels and makes formal recommendations on EIS and future of project.**

- ***Stakeholder Review:*** **undertaken by stakeholder and public groups as part of the formal review process, or as an independent review for stakeholders to then make their opinions known through a formal review.**

- ***Proponent Review***: **undertaken by proponents during the preparation of the EIS to ensure that their work is of an appropriate standard before it is subject to external review. This can save considerable costs and time.**

D4/3 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Flowchart of the EIA review process



D4/4 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Review decisions

***Possible decisions from an EIA review are*:**

- **APPROVAL**
- **approval with conditions**
- **approval subject to ongoing investigation**
- **further investigation prior to consideration**
- **request for a supplementary EIA report**
- **REJECTION**

D4/5 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
EIA and decision-making - overview

- **Decision-making takes place throughout the EIA process.**
- **Many decisions are made by the proponent (e.g. choices between various project alternatives).**
- **Some decisions may be made jointly by the proponent and the government (e.g. screening and scoping decisions).**
- **The main decision whether or not to allow a project with a government agency.**

D4/6 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Decision points in the EIA process

Decision-maker	*Action*	*Outcome(s)*
Proponent	**Selection of project alternatives to be considered**	**Preferred project alternative**
EIA agency/ regulator	**Screening of project proposal**	**No EIA; preliminary EIA; or, Full EIA required**
Proponent and/or EIA agency/regulator	**Approval of scoping report or ToR.**	**Approval of report and/or ToR**
EIA agency/ regulator	**Review and acceptance of EIS**	**Approval; approval with conditions; or, rejection of EIS**
Planning authority and/or relevant Ministry	**Consideration of EIS, review report, and other planning issues.**	**Approval of project (with conditions); or, rejection of project.**

D4/7 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Final decision-making in the EIA process

- **EIA agency submits review report and recommendations to planning authority;**
- **Planning/authorising agency determines decision on project.**
- **Decision taken at this stage is usually a choice between authorisation, authorisation with conditions, or refusal.**
- **This final decision is usually political and can involve a broad range of trade-offs.**
- **Decisions on large or controversial projects are often taken by Ministers or by Cabinet.**

D4/8 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Environmental monitoring

Roles:

- **provides the basis for ongoing impact management during the implementation phase and during environmental audit;**
- **involves the measuring and recording of physical, social and economic variables associated with development impacts;**
- **involves assessment of compliance and adherence to environmental standards and guidelines;**
- **establishes the effectiveness of the prescribed mitigation measures and the occurrence and magnitude of impacts;**
- **provides an `early warning 'system for harmful trends.**

Common types of monitoring:

- **Base-line monitoring**
- **Impact/effect monitoring**
- **Compliance monitoring**
- **Mitigation monitoring**

D4/9 *IRA/IIED*

OVERVIEW OF THE EIA PROCESS
Environmental auditing

Definition of environmental audit:

> ***"independent and objective examination of whether practice complies with expected standards"*** Sadler, 1988

Objectives:

- **to establish the record of change associated with a project.**
- **to compare actual and predicted impacts of the project to assess the effectiveness of impact mitigation measures and procedures.**
- **to check that the project is meeting agreed standards.**
- **to act as a tool to ensure changes are made to project where impact mitigation is not working and/or standards are not being met.**

Resource Notes

1. **Policy, legal framework and institutional arrangements for the proposed EIA system in Tanzania.**
2. **Experience of screening and screening guidelines for Tanzania**
3. **Draft scoping guidelines for Tanzania**
4. **Proposed Review System in Tanzania**
5. **Definitions of Impact Assessment Methods**
6. **Typical Contents of an EIS**

POLICY, LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS FOR THE PROPOSED EIA SYSTEM IN TANZANIA

Paper presented by Mrs. Esther J.C. Kerario at the first EIA training course, March 1998

1. POLICY ISSUES

1.1 Introduction

Tanzania Economic development in Tanzania will continue to rely on the natural resource base and the productivity of natural systems. Both renewable and non-renewable resources such as land, soil, forests wildlife, fisheries, water minerals and other elemental resources are the resource base on which the state and her people rely for survival and prosperity. Hence, the sustainability of the economic and social development depends ultimately on proper and responsible management of the natural resource base and environment in general.

However, for many years economic development activities in Tanzania have not shown sufficient concern for integrating environmental concerns. Many of the environmental problems that are witnessed today are to a large extent a result of man's own creation to satisfy his/her basic needs for livelihood and socio economic growth. The land degradation and continued decline of agricultural production in our rural society; the massive deforestation and continued loss of biodiversity on land and aquatic environment; the mishandling and mismanagement of solid and liquid wastes from domestic and industrial sources in out cities and municipalities, the pollution of water sources, air and land with severe effects on public health and persistent drought and drying of our water sources and bodies - are a manifestation of increased environmental stress that impact negatively on the national economy and peoples well being. It is therefore clear that environmental quality deterioration and natural resource degradation is an outcome of among other poverty and economic growth.

The current debate about environment and development has therefore received greater attention recently due to this realisation that patterns of development in the past has had significant and far reaching negative effect on the environment. A need to reverse the trend is therefore necessary, so as to conduct development activities is a -way that preserves the natural capacity of renewable resources to replenish their stock and honouring the environment's limited capacity to receives wastes.

That is why we are concerned about SUSTAINABLE DEVELOPMENT. The concept that takes into consideration the current and future generation by integrating environmental concerns in the development process, in addition to the economic social and cultural dimension.

1.2 National policies and strategies

The National Conservation Strategy for Sustainable Development (NCSSD), The National Environmental Action Plan (NEAP), the draft National Policy on Environment and several sectoral policies have recognised the role of EIA in sustainable development.

The ultimate goal of the national environment policy is therefore to attain sustainable socio-economic development for the present generations without compromising the ability of future generations to meet their own needs.

The overall objectives of the national environment policy are:

- to ensure sustainable, secure and equitable use of natural resources to meet needs of present and future generations.
- to prevent and control degradation of land, water, vegetation and air which constitute our life support systems.
- to conserve and enhance natural resources, including biological diversity and their ecosystems.
- to raise public awareness and understanding on close linkages between environment and development and promote their participation in environmental action.
- to promote regional and international co-operation on environmental matters.

One of the policy instrument to achieve the above goal is through the use of Environmental Impact Assessment (EIA).

The need to ensure sustainable development is particularly pertinent and perhaps more important now than before in view of the rapid changes in macro-economic policies.

These changes include a shift from state monopoly to market oriented economies.

- Trade and economic liberalisation including industrial reforms.
- Privatisation and mushrooming of private enterprises which include haphazard developments to alleviate poverty,
- Restructuring of public enterprises e.g. parastatal engaged in commercial production and marketing being sold or made to enter into joint venture arrangement.
- Reform of the financial sectors, reduce inflation and liberalise foreign exchange regime.
- Improve social and infrastructure services.
- Lessening government monopoly on agriculture production, tourism, natural resources and industrial investments.

All these reform certainly will be translated into actions or activities that will consequently result in likely negative implications. Hence, in view of the above, the need to develop clearly understood country specific procedure and guidelines to follow when conducting ElAs for proposed activities is imperative.

1.3 Other Sectoral Policies

A number of sectoral policies such as lands, energy, minerals, tourism, industries advocate the use of EIA in project planning. For example the land policy require EIA studies prior to every major project and changing of land uses. The issuance of an industrial license is subject to an environmental permit. However neither of these policies have detailed specific sectoral guidelines.

There are nevertheless notable initiatives to incorporate EIA in sectoral policies and planning. Tanzania National Parks (TANAPA) has a policy that requires an EIA for all development activities within and adjacent areas to the national park boundaries, proposed by private or public agencies. The Department of Wildlife draft policy also require that development proposals within the protected areas including the game controlled areas, game reserves and forest reserves to be subjected to EIA.

TANESCO has already made EIA mandatory for all power generation projects and construction of transmission lines.

2 WHAT IS ENVIRONMENTAL IMPACT ASSESSMENT

2.1 Definition

EIA has been defined by many is a process or procedure to ensure that environmental consequences of development proposals (of public or private activities)are understood and adequately internalised in the planning process before implementation is undertaken. It is both a process and tool for project planning and decision making to ensure that during development planning, biophysical, economic and socio-cultural aspects are considered, negative impacts are avoided or mitigated and potential benefits are realised.

2.2 The purpose of undertaking EIA

The overall purpose of undertaking EIA is to ensure that:-

- The development options consideration are environmentally sound and sustainable (i.e. to support the goals of environmental protection of sustainable development), and,
- That any environmental consequences are recognised early in the project cycle and taken into account in project design and implementation, (as it is shown in the attachment 1, EIA and the project cycle.)

Specifically, purpose of EIA is as follows:

- is an aid to decision - making, it provides a systematic examination of the environmental implications of a proposed action, with alternatives, before a decision is taken. In other worlds the EIA clarify some of the trade-offs associated with a proposed development action - which lead to more rational and accountable structured decision making.

- It provided opportunity for public, specialist affected and interested parties consultation in decision making, thus forming the basis for negotiating between the developer, public interest groups and planning regulators in an open (transparency) and participatory approach (i.e. to provide avenue for the involvement of the public, proponents, private and government agencies) in the assessment and review of the proposed action.
- To predict the consequences of a proposed development from the environmental. socio, economic and cultural perspectives and develop plans **to** mitigate adverse impacts, resolve conflicts and enhance positive aspects.
- To compare various alternative which are available for a particular project/activity and determine the optimum mix of environmental and economic costs and benefits. In other worlds its attempts to ensure that "social costs" of development proposal (those borne by society, rather than the developer) are outweighed by the "social benefits".
- Ultimately, EIA improves project design and implementation.

2.3 The objectives

As a rule of thumb, the objectives of carrying out an EIA are therefore:-

- To identify and incorporate into the project plan appropriate abatement and mitigation measures.
- To predict any significant residual environmental impact for which amelioration is not possible.
- To identify the environmental costs and benefits of the project to the community.

3 WHO IS INVOLVED IN THE EIA PROCESS

As a tool for collecting and assembling information to improve project design, and to be able to effectively achieve the above goals and objectives; EIA need to be interactive participatory and multidisciplinary in nature, to come up with a better understanding of linkages between ecological, social, economic and political systems.

There are five principals groups of stakeholders (or individual) who should be involved in the EIA process. These are:-

i. The developer (or investor/project proponent)

These are project initiators, and are responsible for commissioning and incurring the cost of undertaking the EIA process, on the basis of "developer pays" arrangements. These may be public (or include ministries and their departments or parastatals), or private sectors and companies and development agencies (multilateral, bilateral, donors or international/ national or non-government organisations).

ii. Assessors (service providers)

These are those individuals or a group of multidisciplinary specialists of scientists, economists, engineers, policy makers, ecologist who will undertake the study or provide input to the EIA statement. Local people though not listed contribute much in terms of local knowledge of the environment. These may be individuals drawn from various sectors as a multidisciplinary team, or organisation; research and academic institutions, NGOs, local and international consulting companies.

iii. Stakeholders

These are people (individual/communities) who are impacted by the proposed - They are the most important stakeholder or target group, failure to identify and involve them in the process may jeopardise the whole undertaking and may render project to public criticisms and conflicts. Interest groups may - include local and/or international environmental organisations, labour unions, profession societies and local associations.

iv. Reviewers

These are responsible for providing an evaluation of the strengths and weaknesses of a proposal or assessment report; and assess the content, comprehensives, and adequacy or reports as well as organisational and presentational qualities.

Also reviewers are charged with identification of issues not covered, inaccuracies in information, problem with logic or any conflicts apparent in the assessment process.

Review may be undertaken by an authority responsible for enforcing the need for ElAs and which will oversee the preliminary screening and scoping. Apart from authority reviews there may be specialist reviewers - a qualified specialist who may be required the report of the a assessment and check on the adequacy and completeness of the information in the report particularly if the proposal is controversial or where there is public concern and/or uncertainly over specific issues.

Others may be public reviews and review terms. A review team may consist of authority, public, specialists, and NGOs reviewers.

Public reviews could be done by affected and interested parties themselves, their representative or a panel appointed by the themselves. These should not be seen as delaying tactic but rather a way that affected parties can be sure that their concerns have been adequately addressed and factual information is adequate.

v. Decision taker

Is a person or group . of persons or a body responsible for making decisions once the EIA has been submitted and reviewed. This can be a head of state, minister, elected body or authority or a single designated individual.

4 THE PROPOSED NATIONAL EIA GUIDELINES AND PROCEDURE AND GUIDELINES

The development of a national policy on environmental impact assessment is underway, awaiting the approval of the proposed national EIA procedure and guidelines that will provide the basis for the EIA policy.

The overall objectives of EIA in addition to maintaining long-term ability of natural resources and their ecosystem; to support humans, plant and animal life; and to conserve the social, historic and cultural values of people is to encourage environmentally responsible investments and development in the country.

The underlying principles of the EIA frameworks are: -

i) Sustainability of development activities for present and future generation

ii) Integrated and multi-sectoral approach to resource planning and environmental management be instituted.

iii) Project impacts, must be monitored and managed throughout the life of the development.

iv) The involvement and participation of government agencies with a mandated in the project in the review and approval of EIA documents through a cross sectoral technical review committee (TRC).

v) Particular attention must be given to fair and equitable distribution of project costs and benefit. Development projects/investments should support national growth as well as local benefit. As a minimum, local people in a project area must be no worse off than they were before a project was implemented.

vi) Public participation in the EIA process is mandatory to provide opportunities to individuals, communities, NGOs, interested and affected parties to provide inputs to the process of identifying, reviewing and accepting EIA reports.

4.1 Administration of EIA

The national EIA framework is administered by the Ministry responsible for environment under the office of Vice-President. The Director General of the National Environment Management Council (NEMC) has the responsibility for overseeing the implementation of EIA.

Both public and private sector development activities are subject to EIA. The proposed guidelines has provided a list of projects that require mandatory EIA; those that may require EIA and a list of environmental sensitive areas (See appendix).

An "EIA acceptance" or "Environmental Approval" is granted when the technical review committee has been satisfied that the proposal undertaking has adequately identified the impact as well as the mitigation measures for managing then.

The proponent / developer is responsible for the preparation of EIA reports according to the terms of references approved by the government and fund the EIA studies. The government is responsible for reviewing EIA reports to assess their adequacy. Guidelines on report writing and technical advice to proponents on how best to comply with EIA requirements ?we to be provided by NEMC.

4.2 Stages in the EIA Process

(i) **Registration -** the proponent is required to register his activity by submitting dully filled in a special application form together with a proposal concept to the NEMC to assess whether or not EIA is required.

(ii) **Screening -** this is the classification stage to determine the level at which EIA will be carried out. In making the decision whether full preliminary EIA is required the consideration of the following factors is taken: location of project, technology used concern of public, land use consideration, environmental impacts and any other relevant factors. NEMC then submits a screening report to the proponent.

(iii) **Impact Assessment -** If the classification indicates that a full EIA is required then identification of main issues of concern through scoping will be done by consulting all the relevant concerned parties. Terms of reference will then be prepared to guide the impact assessment study. A public consultation programme ought to be submitted for verification of issues raised by concerned parties.

The preparation of EIA study follows after approval of TOR, to identify likely impacts, assess and evaluate their severity and magnitude and proposed mitigation measures to minimize potential negative impacts and enhance positive benefits.

An EIA report includes an environmental management plan which outlines proposals for monitoring and management of anticipated impacts, especially those which affect local communities. Public consultation is mandatory when conducting an EIA and at a minimum the proponent must meet key stakeholders to solicit their views.

(iv) **Review:** Once an EIA report (or EIS) has been submitted by the proponent a review process will be undertaken by the cross sectoral technical committee (TRC). The TRC is composed of members from sectors responsible for environment and resource management, those that are currently the focus for investment and relevant research institutions. TRC is crucial in enhancing required technical credibility, institutional interagency coordination, accountability and transparency in deciding the fate project.

Depending on the complexity and scope of the project, an independent review panel may be formed for a specific project. The public is notified of the EIS to present their views and comments and these are collated by the NEMC for the TRC consideration.

If more information is required the proponent/his consultant will be informed of the need for a more detailed analysis of certain impacts proposal or any other information to adequately

assess the proposal. Additional public consultation may be required as well. Once the additional information has been submitted a further review may be necessary.

Public bearing: as part of the review process may be necessary whenever a strong public concern over the undertaking has been raised and impact are far reaching. Other critical factors that may necessitate public hearing are sensitivity of the site location, type and scale of project, technology used, multiple land use considerations, project impacts and any other factors related to a particular project.

(v) **Environmental Decision Making**

The outcome of the review could be "EIS acceptance" and the proponent will be served with a provisional environmental permit (PEP) together with terms and conditions of approval or could be "EIS rejection" and is signed by the Chief Executive of NEMC.

The proponent may be required to re-submit a revised statement or conduct further studies on the project. The validity of PEP is two years from the date that the proponent is advised of the decision. If a project has not started within that period a fresh re-assessment will be needed.

(vi) **Appeals.** Both the proponent and the affected or interested parties have the right to appeal. If there is dissatisfaction of the decision reached, he/she has the right to appeal to the Minister responsible for Environment. The Minister shall appoint an appeal panel of not more than 5 people 3 experts, one member from public and a high court judge and the results shall be communicated to NEMC for necessary action.

(vii) **Project implementation -** this is to be conducted according to the terms and conditions of approval guided by the environmental management plans.

(viii) **Monitoring and Auditing.** Both the proponent and the government have the responsibility to undertake monitoring. Monitoring include the verification of impacts, adherence to approved plans and mitigation measures and general compliance of terms and conditions. Environmental audits should be undertaken to provide feedback on the EIA process and effectiveness of the management plan.

(ix) **Decommissioning:** This is and of the project life. The decommissioning report shall be prepared by the proponent and submitted to NEMC for record.

4.3 Other Important Considerations

EIA Fees

The proponents is required to pay the following fees

- Environmental Assessment Registration fees payable at NEMC Office
- Environmental Permit

Penalties

Proponents who fails to comply with the requirements of the EIA procedures shall be subject to appropriate penalties.

Time Frame

The total period for the determination of an application at all stages by NEMC is at most 120 working days. Screening - 30 days. approval of ToR - 30 days, Review - 45 days (inclusive of 21 days for public review) and issuance of Provisional Environmental Permit - 1, 5 days.

Environmental Units (EUs)

Environmental units at sectoral and district level shall be the collaborating partners in the EIA process. The linkages between NEMC and these units shall be legally binding to ensure clear lines of command.

5. THE LEGISLATIVE AND INSTITUTIONAL FRAMEWORK FOR EIA

Not withstanding the current efforts in developing guidelines and a clear procedure for the institutionalisation of EIA, an effect EIA process in the country is constrained by the lack of a legal backing. An effective implementation of the policy objectives need to be backed up by an appropriate legislation.

Currently there are numerous pieces of environmental related legislation's that are yet to be streamlined. The situation is further complicated by the existence of the National Environmental Management Council, the national body that advises the government on all matters pertaining to EIA and co-ordinate environmental issues but lack supervisory and regulatory legal powers.

There is therefore a need of:-

i) Providing for an environmental impact assessment process in law; i.e. a specific EIA legislation and

ii) Establishing an environmental protection agency to administer the EIA process or

iii) Enacting a framework environmental protection legislation which often contains an EIA component

In the later case, this is an "umbrella" legislation which lays down the basic legal principles without any attempt at codification. It entails the declaration of national environmental objectives and policies, establishment of relevant environmental management institutions and definition of common procedural principles for environmental decision making applicable to all sectors. In the later respect, the legislation often covers such cross sectoral issues as environmental impact assessment, environmental quality criteria and public participation in decision making and implementation etc.

However, recognising that the process of law formulation takes time, there are initiatives to seek "an administrative directive" from the Minister responsible for environment while awaiting for the formalisation of the legislative framework.

6. CONSTRAINTS TO IMPLEMENTATION OF EFFECTIVE EIA AND POSSIBLE SOLUTIONS.

i) Lack of legal backing for EIA and enforcement tools

To make EIA effective, supervisory, regulatory and compliance monitoring powers be provided for the institutionalisation of EIA in the country. Lack of an EIA legislation may render the process of developing guidelines and procedure to a useless exercise. Up to now, EIA is still be performed on voluntary basis. Appropriate sanctions for enforcement must be available and effective. In addition to provision of mechanisms which include critical penalties for non-compliance, punishment should also include rehabilitation of the actual damage.

On the other hand concerning administrative mechanisms, public agencies responsible for licensing activities may exercise the option of suspending or cancelling the granted permit's. The threat of withdrawing a permit is a more effective implementation tool than, for example, the imposition of a fine.

ii) Inadequate capacity building at all levels.

The Capacity and expertise to manage the EIA process is extremely limited and is thinly spread across different institutions in the country. Experience in undertaking EIA is limited due to inadequate EIA specific training expertise. This implies that specific training will be required to improve the capacity even at the level of commissioning ETA studies.

iii) Inadequate Stakeholder involvement in EIA process.

Effective ElAs require the active involvement and participation of all the stakeholder to ensure that all the relevant concerns are integrated.

iv) Institutional arrangements and processes

Effective implementation of environmental legislation presupposes the existence of appropriate institutional arrangements and processes and the provision of adequate resources (human, financial and technical) for the operation of these institutions. This is not the case, and as a result because of minimal resources - there is continued sectoral approaches to environmental management with effects of diffusing powers and responsibilities, in diverse government departments and local authorities and jurisdictional overlaps and conflict. A need to streamline institutional arrangement effective EIA implementation is of paramount importance.

7. CONCLUSION

Agenda 21 emphasises the need to develop capacity for sustainable development in developing countries. Appropriate environmental policies and legislation and related institutions is conceived of as part of the critical element in the building of overall capacity to deal with challenges of sustainable development. The proposed national EIA guidelines and procedure that have been developed to suit the local specific conditions which will form the basis for the EIA legislation will be among the most important instruments for transforming the environment and development policies into action. There is therefore a need to review and strengthen environmental legislation and institutions with a view to enhancing their capacity to meet challenges of sustainable development.

Moreover, there will be need to evolve strategies that promote compliance and ensure effective enforcement. The capacity of enforcement agencies to inspect and monitor compliance, to investigate violations, and to compel compliance need to be enhanced.

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EXPERIENCE OF SCREENING IN TANZANIA

Paper presented by Mrs. Esther J.C. Kerario at the first EIA training course, March 1998

1. WHAT IS SCREENING

Screening is the process of classifying a proposal to determine the level at which an environmental assessment will be carried out i.e. whether a full EIA study is required, or a preliminary assessment, or no assessment. It is the first stage undertaken within the EIA process after registration of the project proposal.

The responsibility for screening lies with the national environmental body that is charged to oversee the implementation of environmental impact assessment (EIA) issues. Sectoral and district environmental units with assistance from the national environmental regulatory body may screen project of local importance.

2. PERSONAL EXPERIENCES WITH SCREENING PROJECTS

Different approaches have been used by different agencies world-wide in determining whether or not a proposal requires a full-scale EIA and the level at which that assessment should occur.

Some of the most common criteria used are screening projects are as follows:

i) Past experience in implementation of projects has indicted that certain types of projects have serious adverse impacts than others.

ii) Preliminary assessment. The subjection of projects to initial environmental examination may indicate the scale of impacts and their importance.

iii) Use of checklists and matrices.

iv) Sensitive are criteria - areas that are environmentally fragile or valuable ecosystems.

v) Use of exclusion list criteria.

2.1 Some examples of categorisation of project

i) *World Bank* has identified project categories based on the nature, magnitude and sensitivity of the environmental issues. It has 3 categories of projects:

Category A: requires full EIA; have significant impacts that may be sensitive, irreversible and diverse. Impacts results from a major component of project and affect the area as a whole or an entire sector. e.g. Dams and reservoir; industrial plants and estates river basin development etc.

Category B: initial environmental examination required. Here impacts are less significant than in class I e.g. small scale agro-industries, watershed projects, rural electrification etc.

Category C: No EIA needed. Education, Health, Nutrition, Technical assistance etc.

ii) *Commission of European Community* have proposed two fists, those require mandatory EIA and those that may be subjected to EIA.

iii) *Ghana* has a list of mandatory EIA projects, those that may require EIA; those that can be exempted outright from proceeding and those that need to observe existing laws and regulation.

iv) *South Africa* has two categories of activities, those that are of national transboundary importance and those that are of provincial/local in nature. In either case, there are those which require mandatory EIA, initial assessment or do not require EIA.

In summary, the determination of the level at which an environmental assessment can occur is basically dependent on local circumstances and conditions and therefore may be country specific.

3. THE PROPOSED SCREENING PROCEDURE FOR TANZANIA

3.1 Screening Procedure

The NEMC with the assistance of a cross-sectoral technical review committee (TRC) is responsible for screening projects. Screening is undertaken using information on the registration form "EIA F1", and additional information provided from the submitted proposal.

Projects of national interest or highly risks and contentions projects with potentially serious and multidimensional environmental concerns are screed by NEMC, while the more localised projects by the district sub-offices. No projects shall be screened or reviewed by environmental units at sectoral level as these cannot form cross-sectoral technical review committees.

EIA is mandatory for projects known from previous experience to have the potential of causing significant impacts. These are listed in the proposed national EIA guidelines, Appendix 1. Other projects on a mandatory list are those to be developed within or near environmentally sensitive/critical areas (ESAs). ESA are critical area that are fragile or contain valuable environments/ecosystem that can easily be harmed by the effects of development. The proposed EIA procedure and guidelines have a list of ESA (see Appendix 2).

Figure 1 gives a flowchart of the screening procedure proposed for Tanzania.

3.2 Criteria used for screening projects not on a Mandatory list

for those projects not on the mandatory list the following criteria will be used to determine if an EIA is required:

i) *Key project parameters*. e.g. type, size, sitting of project, resource demand, technical production processes, infrastructure needs, expected effluents/emissions etc. Using

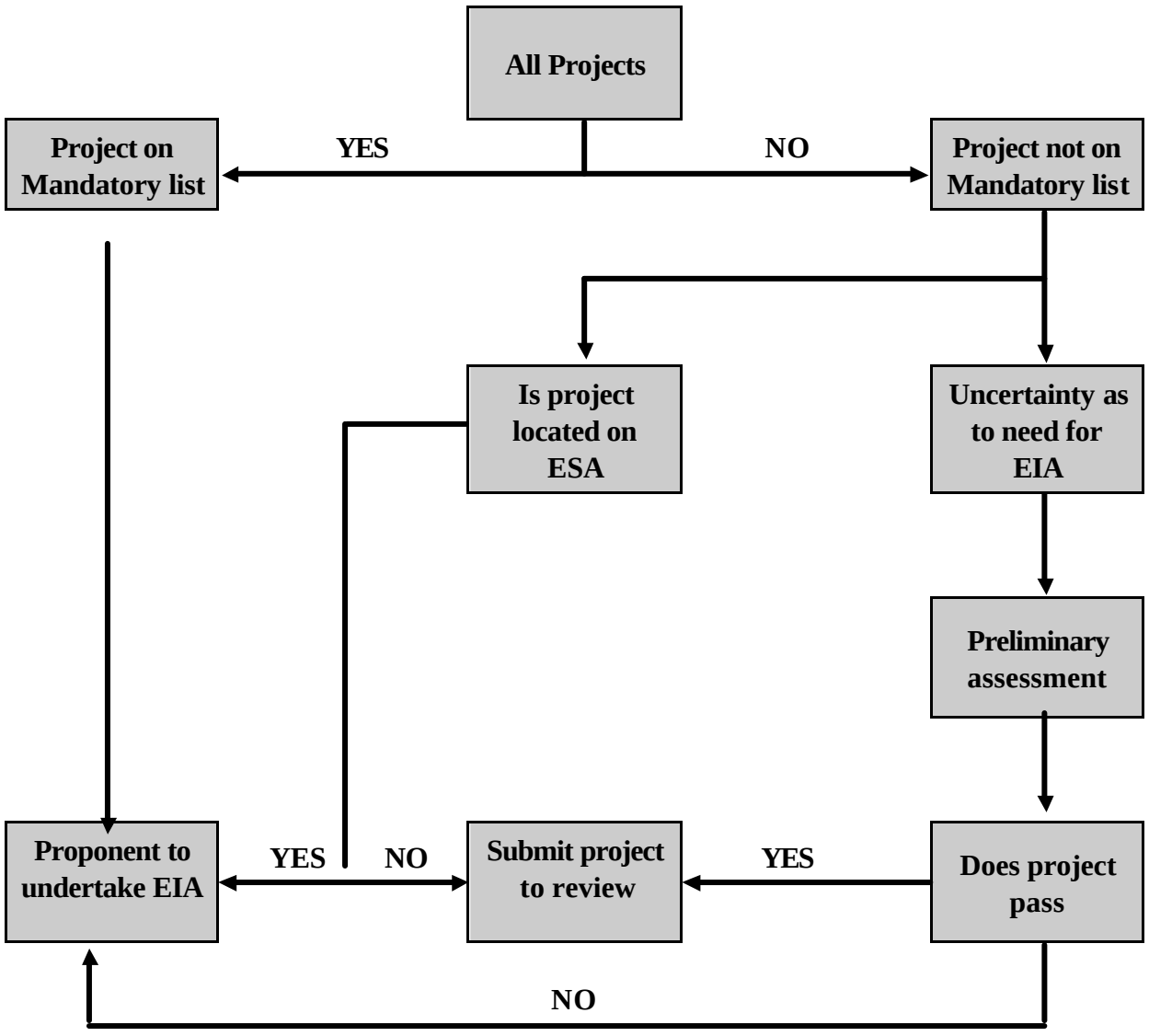
information on such method of development, the potential environmental consequences will be appraised.

ii) *Affected Area:* This include the ecological importance, people, land use, value, fragility and dynamics of development.

iii) *Importance and scale of potential environmental impacts***:** Scale of impacts include such issues likes area of influence; duration of disturbance, effluent/emission of quality resettlement requirements, cumulative effects, reversibility, infringement of any laws, regulations or directives etc. Importance of impacts will be appraised after establishment of scale of impacts.

iv) *Public opposition/concern.* 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 etc. may render the project under detailed scrutiny and assessment.

Figure 1 Proposed screening process for Tanzania



3.3 Conditions for exempting protects from EIA

The proposed national guidelines have set conditions for exempting projects from subjection to EIA if all of the following are satisfied. These are:

i. The activity will not substantially use a natural resource in a way that pre-empts the use, or potential use of that resource for any other purpose.

ii. Potential residual impacts on the environment are likely to be minor, of little significance and easily managed.

iii. The type of activity, its environmental impacts and measures for managing them are well understood in the country.

iv. Reliable means exist for ensuring that impact management measures can and will be adequately planned and implemented.

v. The activity will not displace significant number of people, families or communities.

vi. The activity is not located in and will not affect, any environmental sensitive areas as.. national parks, reserves; wetlands, prime agricultural land; important archaeological and cultural sites; areas protected by law; areas containing rare or endangered flora or fauna and areas containing unique or outstanding scenery. .

vii. The activity will not cause emission of pollutants or create by - products, residual or waste materials which require handling and disposal in a manner that is not regulated by existing authorities.

viii. The activity will not cause significant public concern because of potential environmental changes.

ix. The activity will necessitate further development activity which is likely to have significant impact on the environment.

3.4 Screening decisions

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).
- *Preliminary EIA* is required

APPENDIX I A LIST OF PROJECTS REQUIRING EIA

A. MANDATORY LIST

1. Agriculture

Cultivating natural and semi-natural not less than 50ha.; Water management projects for agriculture (drainage, irrigation); Large scale mono-culture (cash and food crops); Pest control projects (i.e. tsetse, army worm, quelea quelea, locusts, Rodents weeds) etc. Fertiliser and nutrient management; Agricultural programmes necessitating the resettlement of communities, Introduction of new breeds of crops.

2. Livestock and Range Management

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

3. Forestry Activities

Timber logging and processing. Forest plantation and afforestation and introduction of new species; Selective removal of single commercial tree species; Pest management.

4. Fisheries activities

Medium to large scale fisheries; Artificial fisheries (Aqua-culture for fish, crustaceans shrimps, lobster or crabs); Introduction of new species in water bodies.

5. Wildlife

Introduction of new species; Wildlife catching and training, Hunting. Wildlife ranching and farming, Zoo and sanctuaries.

6. Tourism and Recreational Development

Construction of resort facilities or hotels along the shorelines of lakes. river; islands and oceans; Hill top resort or hotel development; Development of tourism or recreational facilities in protected and adjacent areas (national parks, marine parks, forestry reserves etc.) on islands and in surrounding waters; Hunting and capturing; Camping activities, Walk ways and trails etc; Sporting and race tracks/sites; Tour operations.

7. **Energy Industry**

Production and distribution of electricity; gas; steam and hot water; Storage of natural gas; Thermal power development (i.e. coal, nuclear); Hydro-electric power - electric power; Bio-mass power development; Wind-mills power development; Solar (i.e. Impact due to pollution during manufacture of solar devices; acid battery spillage and improper disposal of batteries) and Nuclear energy.

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 and conserving of meat; manufacture of dairy product; brewing distilling and malting; fishmeal factors; slaughter - house. soft drinks; tobacco processing; caned fruits, and sources; sugar factories; other agro-processing industries.

10. Textile in Industry

Cotton and Synthetic fibres; dye for cloth; ginneries.

11. Leather Industry

Tanning; tanneries; dressing factors; other factories.

12. Wood, Pulp and Paper Industries

Manufacture 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 estate; major urban projects (multi-storey building, motor terminals, markets etc.); tourist installation; construction and expansion/upgrading of roads, harbours, ship yards, fishing harbours, air fields and ports, railways and pipeline; river drainage and flood control works; hydro-electric and irrigation dams. reservoir; storage of scrap metal; military installations; construction and expansion of fishing harbours. 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; varnishes, etc.,

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-fibre, grass - wool; processing of rubber; plastic industry; lime manufacturing. tiles. ceramics.

17. Metal and Engineering industries

Manufacture and assembly of motor - vehicles, manufacture of other means of transport (trailers, motor - cycle, motor-vehicle, 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 plant. 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) Municipal 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) Municipal 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 transfer scheme; Abstraction or utilisation of ground and surface water for bulk supply; Water treatment plant.

20. Health Projects

Vector control projects (malaria, bilharzia, trypanosomes etc.)

21. Land Reclamation and land development

Rehabilitation of degraded lands; coastal land reclamation; dredging of bars; Greyones, dyes, estuaries etc.; spoil disposal.

22. Resettlement/relocation of people and animals

Establishment of refugee camps

23. Multi-sectoral Projects

Agro-forestry. dispersed field - tree inter-cropping. Alley cropping. Living fences and other linear planting. Windbreak/shelterbelts; Taungya system- Integrated conservation and development programmes e.g. protected areas; Integrated Pest Management (e.g. IPM); Diverse construction - public health facilities schools, storage building, tree latrines, small enterprises, logging mills, manufacturing furniture carpentry shop, access road, wen digging, camps, dams, reservoirs; River basin development and watershed management projects; food aid, humanitarian relief

24. Trade: Importation and Exportation of the following

Hazardous Chemical Waste; plastic; petroleum products; vehicles; used materials; wildlife and wildlife products; pharmaceutical; food and beverages,

25. Policies and Programmes

Decision of policies and programmes on environment and development; decision to change designated status; family planning; technical assistance; urban and rural land use development clans e.g. master plans, etc.

A LIST OF SMALL - SCALE ACTIVITIES AND ENTERPRISES THAT REQUIRE REGISTRATION (MAY OR MAY NOT REQUIRE EIA).

Fish 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

Wooden furniture and implement making

Basket and other weaving

Nuts and seeds for oil processing

Bark for tanning processing

Brewing and distilleries

Bio-gas plant

Bird catching and trading

Hunting

Wildlife ranching

Zoo, and sanctuaries

Tie and dye making

Brick making

Beach sailing

Sea weed farming

Salt pans

Graves and cemeteries

Urban livestock keeping

Urban agriculture

Fish landing stations

Wood carving and sculpture

Hospital and dispensaries

Schools, community centres and social halls, play ground

Wood works e.g. boat building

Market places (livestock and commodities)

Technical assistance

Rain water harvesting

APPENDIX 2 ENVIRONMENTALLY SENSITIVE AREAS AND ECOSYSTEMS

1 Area prone to natural disasters (geological hazards, floods rain storms, earthquakes, landslides, volcanic activity, etc)

2. Wetlands:- (flood plans, swamps, lakes, rivers etc.) water bodies, characterised by one or any combination of the following conditions.
(a) Tapped for domestic purposes brick making
(b) Within the controlled and/or protected areas;
(c) Which support wildlife and fishery activities
(d) Used for irrigation agriculture, livestock grazing

3 . Mangrove swamps characterised by one or any combination of the following conditions;
(a) With primary pristine and dense growth
(b) Adjoining mouth of major river systems;
(c) Near or adjacent to traditional fishing grounds;
(d) Which act as natural buffers against shore erosion strong wind and storms floods

4. Areas susceptible to erosion e.g.
(a) hilly areas with critical slopes
(b) 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
- Intertidal zones
- Marine reserves

11. Areas declared as:-
National parks, Watershed reserves, forest reserves, wildlife reserves and sanctuaries, sacred areas, wildlife corridors, hot-spring areas.

12. Mountainous areas, water catchment 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

DRAFT SCOPING GUIDELINES FOR TANZANIA

Presented by NEMC at the National Workshop on the development of procedures and guidelines for instituting EIA in Tanzania in June 1997, and discussed during the EIA training course March 1998

1. INTRODUCTION

Scoping is defined as a procedure for determining the extent and approach to an impact assessment. 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.

The objectives of scoping are:-

- To provide an opportunity for the proponent, his/her consultants, the relevant authorities interested and affected parties to exchange information and express their views and concerns regarding the proposal before an Impact Assessment is undertaken.
- To focus the study on reasonable alternatives and relevant issues to ensure that the resulting Impact Assessment is useful to the decision makers and address the concerns of interested and affected parties.
- To facilitate an efficient assessment process that saves time and resources and reduces costly delays which could arise where consultation were not to take place.

Scoping determines the Terms of Reference (ToR) and boundaries of the EIA study.

2. RESPONSIBILITY FOR SCOPING

The proponent and his/her consultants, have final responsibility for scoping. In cases where the proponent or consultant lack the expertise it may, be appropriate to appoint a multidisciplinary team or advisory group to guide the scoping process.

3. TASKS INVOLVED IN SCOPING

Scoping involves the following tasks:

3.1 Background Information and Proposal

Background information on the nature of proposal (including the purpose and need for the project, proposed actions, bcation, 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 from an informed position during the scoping process.

The information should be clear and concise, so that It can be easily understood by the general public.

3.2 Involvement of Authorities, interested and affected parties

The proponent or his/her consultant will prepare a scoping programme indicating the following:-

3.2.1 Authorities, Affected and Interest Parties

The proponent or his/her consultant's first task is to establish who is the responsible decision making authority or authority with delegated responsibilities, the affected and interested parties or special expertise relevant to the proposal should be directly contacted for information and comments.

This form of scoping will enable the proponent/consultation to identify, policies, legal and local administrative constraint that may exist, as well as determining the major consensus of these various groups whose interests may be affected by, the proposal.

3.2.3 Methodologies for Public Participation Involvement

The proponent/consultant should establish a list of interested and affected parties as well as developing methods of notifying then of the proposal. Consultation with the public should be a two - way process, in which information about the proposals disseminated and useful local/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
- 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.

<u>Public Meetings:</u>

A public meeting is a gathering of interested and affected parties to present and exchange information and views on a proposal. There are several functions which meetings serve. These function may be fulfilled in different meetings. These functions include:

- to provide background information on the proposal

- to identify, other interested and affected parties and
- to respond to any question or concerns regarding proposals
- to actively seek information which could include perceptions of needs, attitudes to
- specific aspects of the proposals and issues of concern
- to identify reasonable alternatives and/or significant issues associated with the proposal
- to provide feedback to the public (e.g. progress of investigations, or completion of impact Assessment)
- to seek consensus on problems 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 or his/her consultant. Displays of posters and other illustrative material 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/record should be made of the proceedings of the meeting.

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 minimising or avoiding these limitations by:-

- Organising small-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 be taken 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 meetings does not ensure that all views are heard because only those with time available can participate.

<u>Newspaper advertisement:</u>

Advertisement in 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. Most newspapers are able to handle the distribution of inserts for a modest cost . 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. 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, interviews and questionnaires:

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

- self administered questionnaire
- personal interview

A rigorous methodology must be employed to ensure that the findings of the surveys represent the sentiments of the communities being sampled. Survey must therefore be designed by somebody who is experienced in survey design.

The purpose of survey must be clear and an indication of how the information will be used once it has been obtained must be given. Survey can provide an expression of the feeling from the 'total' public, not just those individuals who are most directly affected. They also gather opinions front 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 opinion at a given time.

The limitation in surveys is that they are time consuming; they also convey public views 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 which 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 important to identify activities which will lead to the desired result/product

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.

- they provide a cross-sampling of public views and concerns and members of the group have a chance to become informed about the issues before coming to conclusions and have a better understanding of the consequences of decisions.
- personal relationships are established which result in members of the group developing deeper understanding of the concerns of other Interests and establish relationships which serve as a moderating influence on more extreme ideas.
- they can serve a communication link back to the communities they represent
- they can assist in determining the terms of reference for the Impact.

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

4. SCOPING REPORT

The proponent/Consultant 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 investigations.

The report should at least indicate:-

- how Scoping was undertaken,
- the authorities and interested and affected parties consulted
- alternatives which should be examined in the Impact Assessment
- the issues of concern and
- the specific guidelines for undertaking and preparing the Impact Assessment.

5. TERMS OF REFERENCE (ToR)

Following an identification of key environmental issues of concern and how various stakeholders will be involved, the proponent and/or his consultant prepares the Terms of Reference for the EIA. First the proponent will prepare a draft Terms of Reference and submit twelve (12) copies to NEMC. The ToR should be accompanied by the Scoping Reports.

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

process. The draft Terms of Reference (ToR) must indicate that the Environmental Impact Statement will include:

- 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 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.
- proposals for a programme of public information.

The draft Terms of Reference will be studied by NEMC for approval. Where necessary a visit to the site(s) will be made. The outcome of the study, which could either be a rejection or revision/modification or approval should be communicated to the proponent or his/her consultant in a period not exceeding thirty (30) days.

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

PROPOSED REVIEW SYSTEM IN TANZANIA

1. Introduction

The National Environmental Management Council (NEMC) assisted by the cross-sectoral technical review committee (TRC) will be responsible for the review.

2. The Technical Review Committee

- Members of the TRC will be drawn from key sectors dealing with environment and resource management, those that are currently the focus of investment and relevant research institutions:
    - Ministry responsible for environment
    - Ministry responsible for natural resources and tourism
    - Ministry responsible for urban and rural planning
    - Ministry responsible for water
    - Ministry responsible for minerals
    - Ministry responsible for works
    - Ministry responsible for industries and trade
    - Institute of Resource Assessment
    - NEMC 2 Members (shall be the secretariat)
- TRC may coopt specialists in relevant disciplines to assist whatever required
- Depending on the scope and complexity of the activity an independent review panel may be formed
- The importance of the TRC is central in enhancing:
    - appropriate technical credibility
    - institutional inter-agency co-operation
    - accountability and transparency in deciding the fate of a proposal
    - minimisation of subjectivity and bias.

3. Tools used for the review and Review criteria

These will include:

- approved terms of reference
- General environmental checklists
- project specific checklists
- expert opinion

- public review
- adapted standard review criteria

The adopted review criteria for use in Tanzania are those of the UK's Institute of Environmental Assessment (1990) with minimal modifications to suit our local circumstances. The criteria has 4 main review areas:

1. Description of the development, local environment and baseline conditions
2. Identification, analysis and assessment of the impacts
3. Consideration of alternatives and mitigation of the impacts
4. Public involvement and communication of the results

- In review area one, the focus is more on the purpose and objective, design, size and scale of development, raw materials used in construction and operation phase.
    - Site description of the affected area is clearly shown and land required specified in relation to existing land use
        - The baseline information the interest is whether there is sufficient information on the description of the study area environment which could be the basis for impact prediction and monitoring

- In review area two, consideration is given to:
    - methodology used in the analysis
    - the logic used to identify potential impacts for all phases of the project
    - scoping methods are adequately described and justified
    - affected groups by the project clearly identified

- In review area three, the focus is on:
    - other project alternatives have been considered
    - all significant adverse impacts have been considered for mitigation
    - an effective environmental monitoring and management plan is in place
    - commitment of mitigation measures

- In review area four, we focus on:
    - whether there were genuine and adequate consultation with all stakeholders and their issues integrated
    - presentation of the information is appropriate and logical
    - the balance of the report, no emphasis or prominence of bias
    - there are no gaps and conflicting statements

- the non-technical summary of the analysis and main findings are clear and justified

- Basing on the above, the overall assessment of the EIS is made whether the report:

  A is excellent, no tasks left uncompleted

  B is good, only minor omissions and inadequacies

  C is satisfactory despite omissions and inadequacy

  D parts are well attempted, but generally unsatisfactory because of omissions and/or inadequacies

  E poor, significant omissions or inadequacies

  F very poor, important tasks not attempted.

If the rating is below C, the proponent is required to revise the report.

4. Public review

Further to the review by the TRC, it is proposed that the public will be given 21 days notice for their reaction to the proposal. This involves putting up notices in newspapers, radio and public places about the receipt of the EIS and placing them in libraries and information centres for the larger public to comment upon. The comments will be collated by the NEMC for the TRC.

5. Public Hearings

It is proposed that public hearings will be conducted for projects which have a strong public concern and impacts are extensive and far reaching. Factors that necessitate a public hearing may include:

- sensitivity of project site
- type and scale of the project
- technology used
- multiple land use considerations
- degree of public concern
- any other factor related to that particular project

In case there is dissatisfaction on the outcome of the review, there is room for Appeal to the Minister responsible for environment. He/she will appoint an appeal panel of 5 members chaired by the high court judge, 3 technical experts and one member from the public. The results of the appeal shall be communicated to NEMC for action.

DEFINITIONS OF IMPACT ASSESSMENT METHODS

A number of other specialist disciplines fall under the umbrella terms of 'environmental assessment' or 'impact assessment'. In some cases, these techniques maybe incorporated as part of an EIA. Some of the more prominent of these techniques are as follows:

1. Social Impact Assessment

Social impact assessment (SIA) identifies and quantifies the impacts on human populations resulting from changes to the natural environment. The technique has now developed as a discipline in its own right and is applied in many countries.

2. Environmental Health Impact Assessment

Environmental health impact assessment (EHIA) provides a comprehensive and rigorous mechanism for identifying, predicting and appraising environmental factors which might affect human health. Factors can include geology, vegetation, demography, economics, pollutants (physical, chemical or biological) as well as the availability of health services.

3. Risk Assessment

Risk assessment addresses risks to human and ecosystem health and welfare posed by development initiatives. Risk assessment has been widely adopted by, for example, the chemical industry as a process to help avoid major disasters.

4. Strategic environmental assessment

Strategic environmental assessment (SEA) is a process for identifying and addressing the environmental consequences (and associated social and economic effects) of policies, plans and programmes (PPPs). It can also be applied to enable cumulative impacts between projects, policies and programmes to be taken into consideration. It provides a mechanism to ensure that plans, programmes and policies are more sustainable and helps avoid costly impacts or problems at the project level. The technique is still in its infancy, and it will be some years before there is sufficient experience to implement SEA effectively, especially in developing countries.

5. Cumulative effects assessment (CEA)

Cumulative effects assessment (CEA) is used to predict the combined effects of multiple activities, rather than the effects of specific development activities. For example, it might be used to predict, and find ways of addressing the environmental and social implications of power generation or tourism policy. Most elements of the process are similar to 'conventional' EIA. The most important difference is the inclusion of larger spatial scales in the analysis. These may translate into regional patterns of change. Examples of cumulative effects include the long-range transport of environmental

pollutants, groundwater depletion and pollution, and linkages between fisheries declines and wetland losses.

TYPICAL CONTENTS OF AN EIS.

1. Non-Technical Summary

This should be a short but comprehensive summary of the report, with an emphasis on expected impacts and management measures. Where relevant, this should be made available in local languages. The executive summary should also be produced as a separate, "stand-alone" document which also provides details of where the full report can be obtained or referred to. Alternative communication media should also be considered.

2. Introduction

This should identify the type of project proposed (e.g. road project; forest plantation); its location (or various site alternatives), and if the project is part of a larger proposal. The project proponent must be clearly identified as must the team which carried out the EIA. It should outline the background to the project and the reasons or necessity for it.

3. Project Description

This should indicate the status of the project in the project cycle e.g. pre-feasibility, feasibility, detailed engineering and design - so that the level of detail and available planning or design options can be understood by reviewers of the report. The description of the project and its alternate sites, designs and implementation strategies should be given in enough detail so that impact forecasts and management measures can be understood and appreciated. In most cases, it will not be necessary to include detailed process information or market-sensitive information which a proponent might want to remain confidential.

In most cases, the description should include:

- inputs (raw materials), outputs (products), processes and major types of equipment;
- maps, flow diagrams and photographs where necessary; and
- a summary of technical, economic and environmental features essential to the project.

Different design options should be discussed and compared. The principal features of each option should be given and the economic, technical and environmental disadvantages of each option should be discussed and evaluated.

4. Environmental Planning and Design

A discussion of the environmental planning that has gone into the project should be discussed. Issues that have been taken into account for avoiding or minimising impacts, for capturing potential benefits, for compensating for residual impacts, and for impact management have to be discussed. The design and management features to which the proponent is committed must be highlighted as these form a

key part of the project design on which the impact analysis is carried out. The objectives, methods and results of involving the public in project planning should also be discussed.

5. Existing Environment

This section describes the existing environmental setting in enough detail to allow for an understanding of the analysis and assessment of impacts. It includes:

- spatial and temporal boundaries within which the environment is going to be considered;
- environmental conditions in qualitative and quantitative terms of the physical, biological and human environment before the implementation of the project, as well as projected conditions over the time horizon of the project should the project not go ahead; and,
- environmentally-sensitive areas of special or unique scientific, socio-economic or cultural value.

6. Assessment of Environmental Impacts

This should include a description of how both beneficial/adverse impacts and direct/indirect, are expected to occur. This is required for each feature of the environment identified as important during scoping. Possible cumulative or synergistic effects will be highlighted. In each case, the report should discuss:

- the source(s) or cause(s) of the impact(s);
- the severity of impact (e.g. magnitude, direction, etc.) as well as the likelihood of its occurring;
- a clear statement of residual impacts, i.e. those which cannot be avoided or minimised, and recommendation for how these shall be managed;
- a description of methods used to forecast impacts, of how environmental data was gathered, and the methods and criteria used to judge impact significance;
- the assessed significance of the impacts; and
- possible measures for avoiding or mitigating the impact.

7. Impact Management

This section should summarise the planning and design measures adopted in the project plan to reduce or eliminate potential environmental impacts. It must also outline a plan to reduce or eliminate potential environmental impacts. It must also outline a plan for monitoring and managing impacts during project implementation, and outline which activities will e undertaken by the proponent and which should be the responsibility of the government.

8. Resource Evaluation

Where possible, the report will include an economic valuation of the environmental costs and benefits of the project, and identify those which cannot be evaluated in monetary terms. The distribution of costs and benefits (Who benefits? Who pays?) should also be discussed.

9. Summary and Conclusions

It is useful to have the conclusions summarised in a series of brief statements referring to relevant sections of the report. The section should focus on significant impacts, the measures proposed avoid or mitigate them, and the impact management proposals during project implementation.

10. Appendices

These should include information not directly useful in the text of the report but needed for reference or detailed review by technical experts. These could include:

- The Terms of Reference for the study;
- Sources of data and information;
- Detailed data reduced for use in the main body of the report;
- Detailed technical analysis of particular impacts (e.g. pollution dispersion, soil erosion, demands for social services).
- Names and qualifications of team members who carried out the study

Appendix I: Course programme and evaluation

1. **Example of course programme.**
2. **Example of course evaluation form.**

INTRODUCTION COURSE PROGRAMME

This is included as a guide for trainers in developing their own programme. It should not be used as a blueprint as each course programme should be prepared to meet the particular requirements of course participants and available resources.

Time	Activity	Responsible Person(S)
28thSept. 1998		
08.00 - 08.30	Participant Registration	Secretariat/Organizers
08.30 - 08.35	Welcoming remaks	R. Mwalyosi
08.40 - 08.50	Statement from the Organizers	British Council
08.55 - 09.10	Opening Address	RC/Mbeya Region
09.15 - 09.30	Participants'introductions	Chairperson
09.30 - 09.50	What is EIA?	R. Mwalyosi
09.55 - 10.10	Evolution of EIA worldwide	D. Howlett
10.15 -10.30	EIA in Tanzania	I. Kikula
10.30 - 11.00	Discussion	Chairperson
11.00 - 11.20	Tea/coffee	
11.25 - 11.40	Registration and Screening of proposals	R. Mwalyosi
11.45 - 12.05	Scoping and Determination of alternatives	D. Howlett
12.10 - 12.25	Scoping and defining EIA boundaries and Terms of Reference	I.Kikula
12.30 - 12.50	Discussions	Chairperson
13.00 - 14.00	Lunch break	

	Organising and undertaking EIA	
14.00 - 14.25		R. Mwalyosi
	EIA review and decision-making	
14.30 -14.55		D. Howlett
	Post EIA follow-up: monitoring and	
15.00 - 15.20	auditing	I. Kikula
	Discussion	
15.20 - 15.40		Chairperson
	Coffee/tea	
15.40 - 16.00		
	Making EIA effective	
16.05 -16.25		R. Mwalyosi
	Discussion	
16.30 - 16.50		Chairperson
	Housekeeping remarks	
16.50 - 17.00	End of days proceedings	R. Mwalyosi
<u>29th Sept. 1998</u>		
	Brief introduction to the case study	
08.30 - 08.50	project: *The Mbeya Cement Factory*	R. Mwalyosi/Municipal Health Officer (MHO)
	Drive to Mbeya Cement Factory	
09.00 - 09.30		All trainers/MHO
	Briefing from the Hosts at Mbeya	
09.30 - 10.00	Cement	
	Coffee/tea at Mbeya Cement	All trainers
10.05 - 10.30		
	Field work: tour of the factory area,	D. Howlett/Chairperson
10.30 - 12.30	the quarry, identifying	
	environmental, socio-economic and cultural impacts	I. Kikula
	Lunch at Mbeya Cement	
12.30 - 13.30		
	Group presentations and plenary	
13.30 -14.30		All trainers
	Workshop evaluation	
14.30 - 15.20		All trainers

15.20 - 15.50 16.00	Closing formalities Return to Mbeya town	

EXAMPLE OF AN EVALUATION FORM FOR INTRODUCTION COURSE

This evaluation form is included as a guide for trainers in developing their own. It should not be used as a blueprint as each course evaluation should be prepared to meet the particular requirements of course participants and course environment.

As you are aware this is the second of the first introduction and awareness courses on EIA given at the Regional and District level. We would very much like to receive your comments on the course in order to make improvements to following courses which are to be given in other regions in Tanzania, and to whether the course met its objectives:

- to raise awareness among participants about EIA and its role in decision making and integration into project planning in Tanzania;
- to develop an understanding of the EIA process itself;
- to investigate the conditions for the effective adoption of EIA in Tanzania; and,
- to present and discuss the proposed EIA system for Tanzania, and its implementation at the Regional and District levels.

Please can you complete and return this form before you leave the course.

Thank you

---

1. What was your overall assessment of the course? Please check one of the boxes below and make any comment you would like to make.

Very Poor	Poor	Satisfactory	Good	Very Good

Comment _____

_____

_____

2. How well did the course achieve its objectives? Please check one of the boxes below and make any comment you would like to make.

Very Poor	Poor	Satisfactory	Good	Very Good

Comment _____

_____

_____

3. Please comment on the presentation of the workshop. Please check one of the boxes below and make any comment you would like to make.

Very Poor	Poor	Satisfactory	Good	Very Good

Comment _____

_____

_____

4. What part of the course did you find most useful or relevant and why?

_____

_____

5. What part of the course did you find least useful and why?

_____

_____

6. What, if anything, would you like to have been included in the course?

_____

_____

7. Please make any other comments on the course you would like to make.

_____

_____

_____

_____

_____

_____

Appendix II: Contacts and further information on EIA

1. **Tanzanian and UK contacts.**
2. **International contacts and organisations.**
3. **Useful web pages for information on EIA.**

TANZANIAN AND UK CONTACTS

The following organisations have developed this training manual. Further details on the manual and accompanying courses can be obtained from these institutions.

Institute for Resource Assessment, University of Dar es Salaam, P.O. Box 35097, Dar es Salaam, Tanzania. Tel : 051 410393 Fax 051 410393. Email: ira@udsm.ac.tz. Contact Raphael Mwalyosi.

International Institute for Environment and Development (IIED), 3 Endsleigh Street, London, WC1H 0DD, UK Tel: +44 (0)171 388 2117 Fax: +44 (0)171 388 2826. Contact Ross Hughes or Barry Dalal-Clayton (ross.hughes@iied.org).

Development and Project Planning Centre, University of Bradford, Bradford, West Yorkshire, BD7 1DP, UK. Tel +44 (0)1274 235286 Fax +44 (0)1274 235280. Contact David Howlett (email: d.howlett@brad.ac.uk).

EIA Centre, University of Manchester, Manchester, M13 9POL, UK. Tel +44 (0)161 275 6873 Fax +44 (0)161 275 6893. Contact Chris wood (email: Chris.wood@man.ac.uk).

INTERNATIONAL CONTACTS AND ORGANISATIONS

The following is a list of useful international organisations who can provide useful information relating to EIA. The EIA Centre of the University of Manchester provided information for the compilation of this list.

United Nations Organisations

Environment and Economics Unit, The *United Nations Environment Programme (UNEP)*,Post Box 30552, Nairobi, Kenya. Tel: 254 2 6233 72 Fax: 254 2 2268 90

Infoterra (global environmental information exchange network of UNEP) (at above address) Tel: 254 2 62 1234 Fax: 254 2 62 4269

Industry and Environment Office, UNEP, 39-43 quai André Citroën, 75739 Paris Cedex 15, France. Tel: 33 1 44 37 14 50 Fax: 33 1 44 37 14 74

United Nations Educational Scientific and Cultural Organisation (UNESCO), Division of Science, Technology and Vocational Education, Place de Fontenoy, F-75700 Paris, France.

United Nations Industrial Development Organisation (UNIDO), P.O Box 300, A-1400 Vienna, Austria.

Food and Agriculture Organisation (FAO), Programmes Coordinating Centre, Environment and Energy, Via delle Terme di Caracalla, 00100 Rome, Italy.

International Labour Office (ILO) Focal Point for Environment and Sustainable Development, 4 route des Morillons, CH 1211 Geneva 22, Switzerland. Tel: 41 22 779 7456 Fax: 41 22 798 86 85

*The World Health Organisation (WHO),*Environmental Hazards and Food Protection, 20 Avenue Appia, 1211 Geneva 27, Switzerland.

Multi-national aid agencies and development banks

Organisation for Economic Co-operation and Development (OECD), - Development Co-operation Directorate; and Environment Directorate both at: 2 rue Andre Pascal, 75775 Paris Cedex 16, France.

African Development Bank, B.P.V. 316, Abidjan, Cote D'Ivoire Tel: 225 20 4199 Fax: 225 20 4907

Asian Development Bank, Office of the Environment, P.O. Box 789, 1099 Manila, The Philippines Tel: 632 711 3851 Fax: 632 741 7961

World Bank, Environmental Economics and Pollution Division, Environment Department, 1818 H. Street N.W., Washington D.C. 20433, U.S.A. For country & project specific EA summaries etc: Public Information Center (PIC), Room G C1-310, World Bank, Washington DC, 20433 USA (requests to PIC need country, project name & year) Fax:202/477-6391

International NGOs

Institute for European Environmental Policy (IEEP), 158 Buckingham Palace Road, London, SW1W 9TR, UK Tel: 0171 824 8787 Fax: 0171 824 8145 e-mail: ieeplodon@gn.apc.org.uk

International Institute for Environment and Development (IIED), 3 Endsleigh Street, London, WC1H 0DD, UK Tel: 0171 388 2117 Fax: 0171 388 2826 e-mail: resource.centre@iied.org.

The World Conservation Union (IUCN), Conservation Services Division, IUCN, Rue Mauverney 28, CH-1196 Geneva, Switzerland. Tel: 41 22 999 00 01 Fax: 41 22 999 00 02

International Association for Impact Assessment (IAIA)

IAIA is the International Association for Impact Assessment, organised in 1980 to bring together researchers, practitioners, and users of various types of impact assessment from all parts of the world. IAIA involves people from many disciplines and professions. Its members include corporate planners and managers, public interest advocates, government planners and administrators, private consultants and policy analysts, university and college teachers and their students. IAIA activities seek to:

1. develop approaches and practices for comprehensive and integrated impact assessment;

2. improve assessment procedures and methods for practical application;
3. promote training of impact assessment and public understanding of the field;
4. provide professional quality assurance by peer review and other means; and,
5. share information networks, timely publications, and professional meetings.

IAIA members now number more than 2,500 and represent more than 100 countries. Organisations are active in Brazil, Cameroon, Central and Eastern Europe, Japan, New Zealand, Ontario, Portugal, Quebec, South Africa, South Korea and the United States. International conferences are held annually. Regional conferences are organised to make information exchange and networking opportunities available to those who might not be able to attend the international conferences, as well as to focus attention to specific issues.

Training programs are held regularly in conjunction with IAIA international conferences. These range from one day to one week in duration and deal with a variety of impact assessment issues.

The IAIA quarterly journal, Impact Assessment and Project Appraisal, contains a variety of peer-reviewed research articles, professional practice ideas, and book reviews of recently published titles. IAPA provides a one-source link to the latest ideas in the wide-ranging field of impact assessment. The IAIA newsletter, published 4 times annually, provides members with current information concerning association activities and events.

For information about membership or answers to questions about IAIA, contact Rita Hamm, IAIA Executive Office, North Dakota State University, PO Box 5256, Fargo, ND 58105-5256, USA. Phone +1 701 231 1006. Fax +1 701 231 1007.
Email rhamm@ndsuext.nodak.edu.

USEFUL WEB PAGES FOR INFORMATION ON EIA

This section includes the details and summaries of useful web pages on the Internet that may be of interest to readers in Tanzania. While many may not have access to the internet there are increasing numbers of connections in Tanzania and readers are advised to try to make use of these if at all possible as there is a wealth of up to date information on EIA available. This list has been adapted from a more comprehensive list of web sites developed jointly by the Canadian International Development Agency (CIDA) and the International Association for Impact Assessment (IAIA). This list can be found at *http://IAIA.ext.nodak.edu/IAIA/eialist/*.

University of Manchester, EIA Centre

http://www.art.man.ac.uk/eia/EIAC.htm

email: abarker@man.ac.uk

The EIA Centre's homepage contains EIA newsletters, an EIA leaflet series, various papers, EIA Centre publications, a list of Centre training activities, and documents regarding developing country initiatives in EIA.

Envirolink

http://envirolink.org/

email: info@envirolink.org

Envirolink is a compilation of comprehensive, up-to-date environmental resources available on the web. Its many links encompass almost all topics related to the environment field. The EIA search produces U.S. Senate Bills on risk assessment as well as analytical papers.

IUCN (The World Conservation Union)

http://w3.iprolink.ch/iucnlib/

email: mail@hq,iucn.org

The IUCN homepage is divided into categories for information, people, places and themes related to the organisation's work. Available in French and Spanish, as well as English, this site provides contacts to access the IUCN Library, as well as other resources.

World Bank Homepage

http://www.worldbank.org.

email: comments@www.worlkbank.org

In its "Topics in Development" section, the World Bank's Global Environment Facility contains environmental information, documentation, and publications. It also describes environmental programs and includes many relevant links. A search for environmental assessment provides quite a few documents.

Canadian Environmental Assessment Agency (CEAA)

http://www.ceaa.gc.ca/

email: info@ceaa.gc.ca

Information on the CEAA is provided on the homepage. There is a public registry of information, links to other environmental assessment sites, and study reports of environmental assessment effectiveness.

International Institute for Environment and Development

http://www.oneworld.org/iied/resource/

email: resource.centre@iied.org

The Directory of Impact Assessment Guidelines contains bibliographies and summaries of many different resources and provides information as to how to obtain the resources. There is also an International Environmental and Natural Resource Assessment Information Service (Interaise) which contains national conservation strategies, and sustainable development strategies.

Legal Information Institute, Cornell - Environmental Law Materials

http://www.law.cornell.edu/topics/environmental.html

email: lii@lii.law.cornell.edu (for general feedback)

This website provides an extensive list of legislation on varying environmental topics such as insecticides, pesticides, tropical forests, the Clean Water Act, Noise Pollution, etc. It also provides other links to Federal Agencies and key internet sources.

Environmental World Wide Web Servers

http://iridium.nttc.edu/env/env_links.html

email: no email address indicated

This is an alphabetical listing of sites to connect to various environmental information sources. It is divided by government, corporate, military, universities, and others. Found under Industrial Opportunity Assessment Databases is information about the Industrial Assessment Center (IAC) Program.

Directory of Environmental Resources on the Internet

http://www.envirosw.com/

email: scottj@envirosw.com

This website contains an extensive number of listings and links to various environmental resources on the internet such as seminars, courses, education resources such as libraries and reports, consultants and services, links to a handful of environmental sites, and links to legislative information.

ECONET

http://www.igc.org/igc/en/index.html

email: no email address is indicated

There are many helpful links at this website including a global environmental law link, headlines of current events every two weeks, and a corporate watchlink. This watchlink is a watchdog website dedicated to monitoring transnationals.

International Institute for Sustainable Development (IISD)

http://iisd1.iisd.ca/

email: info@iisd.ca

The IISD homepage contains many documents regarding sustainable development, including ISO14000 information. There is a search function with the ability to choose a specific country, and an environmental impact assessment database.

Environmental Impact Assessment Legislation: year around the world

http://shum.huji.ac.il/~bennun/muky/EIALeg.htm

This website contains two maps illustrating the diffusion of the project level EIA at the national level. The two maps are (1) world countries by EIA legislation year, and (2) area covered by EIA legislation. Unfortunately, it takes a very long time to load the maps (composed in GIS).

EnviroLink Library

http://www.envirolink.org/EnviroLink_Library/

email: support@envirolink.org

EnviroLink is a comprehensive resource of environmental information. A search for "Environmental Impact Assessment" provides many helpful resources.

UNEP EIA training manual

http://www.environment.gov.au/portfolio/epg/eianet/manual.htm

This site contains the full version of the UNEP training manual on EIA.

UNEP - Industry and Environment

http://www.unepie.org/

email: unepie@unep.fr

Located in Paris, the centre's mission is to promote cleaner and safer industrial production and consumption. This site provides information about the following program areas (as well as others): prevention of industrial accidents and minimisation of impacts (APELL), environmental management and pollution control of selected high-risk sectors, preventative strategies for cleaner and more efficient production, environmental technology assessment, outreach to industry to stimulate dialogue and initiatives on sustainable development. There are two databases available, one of which is called the International Cleaner Production Information Clearinghouse, which provides information about clean technologies. One can obtain answers to questions by fax (33-1) 44 37 14 74, mail, or e-mail (unepie@unep.fr). Allow 1 - 2 weeks for a response as there is minimal staff assigned to this activity.

International Association for Impact Assessment (IAIA)

http://IAIA.ext.NoDak.edu/IAIA/

This website contains information regarding IAIA, as well as direct links to professional internet sites (such as the Australian EIA Network, International Rivers Network, Econet, etc.), the Impact Assessment Journal, and the IAIA Newsletter. Its resources section covers ten areas in impact assessment, including risk assessment, social impact assessment, policy assessment and training.

Australian EIA Network

http://www.erin.gov.au/net/eianet.html

email: eianetwork@dest.gov.au

The EIA Network contains many resources. There is information regarding legislation and agreements, case studies, contacts for practitioners in the commonwealth and state/territory governments, information about EIA in Australia, EIA training resources, and links to other environmental servers.

Earth Council

http://www.ecouncil.ac.cr/

email: eci@terra.ecouncil.ac.cr

The Earth Council mandate includes the development of an international network that promotes collaborative action supporting sustainable development in all sectors. This exceptional website fulfils the mandate in its provision of a wide range of information relating to the recent 1997 Rio+5 forum, as well as on-line databases, and NGO exchange, and an electronic forum. It features topics related to EIA, such as participatory mechanisms for decision-making, mechanisms for mediation and problem-solving, the implementation of sustainable development and various other subject areas.

Southern Africa Environment Project

http://www.ru.ac.za/departments/law/SAenviro/eia/eia.html

email: editor@iwr.ru.ac.za

This page, part of the Southern Africa Environment page, includes links to Swaziland EIA regulations, International EIA agreements and Integrated Environmental Management (IEM) Guideline documents.

Institute of Environmental Assessment

http://www.greenchannel.com/iea

The Institute of Environmental Assessment's page contains a listing of available publications, extracts from EA magazine (which provides a discussion of a wide range of EIA topics), as well as membership information, links to conference proceedings and a link to the Green Channel which is a more general environmental site.

Electronic Development and Environment System

http://nt1.ids.ac.uk

This site is posted by the British Library for Development Studies. This site allows the visitor to search for EIA online material, to access recent EIA publication listings and to link to hundreds of environmental organisations. Contact people for specific issues are also identified. This site provides an excellent source of environment related and EIA material.

Asian Development Bank

http://www.asiandevbank.org/index.html

email: adpub@mail.asiandevbank.org

This page consists of a link to a listing of Environmental Assessment Reports of ADB projects. These reports are available to the public free of charge upon request.

Environmental Organisation Web Directory

http://www.webdirectory.com

This site contains links to sites on a large variety of environmental issues. The search function for Environmental Assessment yields a number of references to consulting firms, government agencies and Universities who deal with EA.

EIA Unit, Aberystwyth, UK

http://www.aber.ac.uk/~eiawww/

This page is the homepage for the EIA Unit in Aberystwyth. The site includes EIA course information for fulltime and distance learning classes. It is possible to access faculty information and information about consultancy and research services. The unit also releases an EIA newsletter.

OECD- Organization for Economic Co-operation and Development

http://www.oecd.org

email: webmaster@oecd.org

This site contains useful information about sustainable development and international development assistance. There is a search function on the site that will display several documents regarding environmental assessment. There is also an "environmental issues" section under "Activities" that includes a long list of information on various environmental topics.

Report on Environmental Assessment

http://www.erin.gov.au/portfolio/epg/eianet/eastudy/final/main.html

This page contains the Final Report on an international study on Environmental Assessment. The report is entitled Environmental Assessment in a Changing World: Evaluating Practice to Improve Performance and was prepared by Barry Sadler.

Impact Assessment Unit at Oxford Brookes University

http://www.brookes.ac.uk/iau/

The Impact Assessment Unit at OBU is a well-established centre for research, training, and consultancy in the field of EIA in the UK. The IAU site provides details of the centre's research activities, EIA publications, training courses and EIA practice updates. Details of postgraduate EIA courses at OBU and links to EIA resources on the web are also provided.

Strategic Environmental Assessment (SEA) Primer

http://fred.csir.co.za/www/sea/primer/primerf.htm

This document, issued by CSIR in Africa, defines what SEA is, identifies what makes SEA strategic and different from EIA, and describes opportunities and constraints to the application of SEA. It aims to contribute to the development a nd application of SEA methods appropriate to South Africa.

Enviromine- Environmental Technology for mining

http://www.enviromine.com/env_main.html

email: email: infodata@info-mine.com

This is a comprehensive site dealing with many environmental aspects of mining such as mining environmental publications, mining environmental technology and much more. It includes the Enviromine mailing list intended to stimulate discussions on mining- related environmental issues.

Environment Canada

http://www.ec.gc.ca/envhome.html

'The Green Lane on the Information Highway' homepage offers the user information on climate change, clean air and water, and nature. This site also informs you of environmental products and services and provides links to other environmentally-related sites

EIA Section, DGXI, European Commission

http://europa.eu.int/en/comm/dg11/eia/home.htm

This site provides relevant information about environmental impact assessment (EIA) at the community level. It also provides information on EIA legislation, training material, and links to good contacts for information exchange.

United States Environmental Protection Agency (EPA)

http://www.epa.gov/

The United States Environmental Protection Agency (EPA) strives to "protect human health and to safeguard the natural environment". The user will be able to access information on news and events, projects and programs, law and regulations, and publications.

Greenpeace International

http://www.greenpeace.org/

The Greenpeace International webpage provides lots of information on environmentally-related issues, such as toxins, climate, forests, and genetic engineering. On this site you will also find the latest news and a chat site.