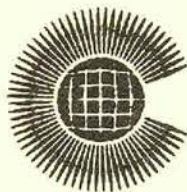


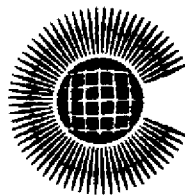
An Environmental Impact Assessment

Framework for Africa



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An Environmental Impact Assessment Framework for Africa

June 1994

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Livingstone EIA Training Workshop Team

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Foreword

The Environmental Impact Assessment (EIA) framework presented here is a by-product of the six-weeks EIA Training Workshop which was held in Livingstone, Zambia from 7 March - 15 April 1994.

The EIA Training Workshop was attended by twenty-one participants from Eastern and Southern African Commonwealth countries. It was sponsored by the Commonwealth Secretariat, London and co-sponsored with UNEP Environment and Economics Unit, Nairobi in collaboration with Earthcare Africa, a Pan-African policy and environment monitoring institute based in Nairobi, also organized the Workshop.

The Workshop objectives were to provide the participants with an intensive and practical treatment of the principles, processes, procedures and uses of EIA, both as a management and policy tool in the context of sustainable development, and to enable participants develop frameworks of EIA methodologies appropriate to their respective national development needs.

The Workshop brought together persons from diverse backgrounds with varied experience and expertise. The participants were senior-level government officials and NGO leaders. They represented these countries: Botswana, Kenya, Lesotho, Malawi, Seychelles, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. Resource persons came from within the sub-region and outside Africa.

Training methods included a variety of instructional approaches such as lectures, field exercises, case studies, group discussions, films, field trips, simulation games. Short lecture presentations were given by resource persons who provided the theoretical aspects of EIA. These were enhanced with examples drawn from real life experience provided by the participants. The participants also later acted as resource persons during the Workshop.

Prior to the Workshop, each participant was asked to prepare in advance an environment profile of their country through documentation, posters, films, case studies, etc. Every participant had the opportunity to present these at the Workshop. This sharing of information and experience enriched participants in perceptions of the environmental issues, and in appreciating both the commonality and peculiarity of each issue. Thus participants acted as discussion facilitators, presenters of case studies, of group reports, or of their own experiences, field trips within the environs of Livingstone Municipality, and others in the last week of the Workshop to Kafue river and industries, to the copperbelt industrial and mining area enriched greatly the participants' understanding and appreciation of the importance of EIA. At the end of the Workshop, participants developed the outline of an Environmental Impact Assessment framework for Africa.

With the support of the Environment & Economics Unit of UNEP, this outline was developed into its present form in the hope that it be of use to policy-makers and decision-makers in the region. The framework was put together by a team of seven resource persons who were drawn out of the participants of the Livingstone EIA Workshop, as was recommended by them. See Annex I for list of resource persons.

The production of this EIA framework is not an end itself. It is hoped that through further collaborative efforts it will be possible to move from here to develop a generic document for EIA. This will bridge the gap between the framework and anticipated EIA-cum-development activities at national level. It will also set in motion a train of activities that will eventually result in the institutionalization and internalization of the EIA process both as a policy and decision-making tool to enhance development efforts to uplift the living standards of the African people.

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1.0 INTRODUCTION

This environmental impact assessment (EIA) framework attempts to provide broad guidelines to help African countries integrate environmental concerns in their National Development Strategies (NDS) through appropriate political, social and economic structures. In some cases, NDS may need to be completely overhauled to give equal considerations to the environment in the march towards sustainable livelihoods and development.

It is envisaged that this framework will provide the necessary direction in the mobilization of national human, institutional and technical capacities and resources. The focus of this framework is on development approaches that address sustainable livelihoods of Africa's populations within the context of sound environment management. It is hoped that each African country will critically and creatively examine this framework in order to incorporate in its environmental laws specific elements suitable to it. This would enrich the national EIA processes and procedures.

African countries share a border with at least one other country. However, often, sustainable utilization and management of the shared resources to the benefit of both or all countries concerned, has not been sufficiently promoted. A framework such as this provides an opportunity and basis on which to build and implement joint sustainable development activities.

This framework is based on the issues and concerns that emerged during the six week EIA Workshop in Zambia. In designing it, insight has been employed to capture those elements peculiar to Africa:

- i) relatively higher fragility and variability of ecosystems;
- ii) dependence on the resource-base for creation of national wealth;
- iii) high direct dependence rate on the resource-base by the majority;
- iv) active roles of traditional values, institutions and knowledge systems in sustaining the resource-base;
- v) the imperative of popular participation; and
- vi) insufficient mobilization of the available human resource-base.

2.0 CONCEPTUAL FRAMEWORK

2.1 Sustainable development

The World Commission on Environment and Development (WCED) provided a global working definition of the concept of sustainable development. The Commission defined sustainable development as development that meets the needs of today's generation without compromising those of future generations.

Environment and development complement each other. With a carefully nurtured environment, we can be assured of increased yields from the natural resource-base which supports or facilitates further development. With proper re-investment of capital generated from projects, sustainability could be achieved.

In Africa, environment is a source of livelihoods for its majority as well as being a source of national wealth. It is important, therefore, that Africa's development be based on environmentally sound management of her natural resources and ecosystems.

Environmental problems in Africa today are caused more by lack of appropriate policies to guide development than by development itself. Most development models have encouraged the means of production and control over national wealth to be concentrated in the hands of a few, leaving the larger sections of the population impoverished. Such institutionalized poverty leaves the victims with no choice but to exert even greater pressure on their natural-resource base, resulting in accelerated degradation processes. Development planning also requires that decisions and strategies be based upon realistic and accurate data. Often, the lack of such data, for example accurate population size, may lead to inadequate appreciation of the rates of resource abstraction. This leads to under-estimation or over-estimation of resources available and rates of utilization. While industrial and technological advancements are vital components of development, the over-consumption which goes with them leads to wasteful resource utilization and greater rates of waste generation and pollution of the environment.

Certain features of sustainable development as it is practiced now are:

- ◆ macro-dominated
- ◆ externally driven
- ◆ associated with a long process with many stages
- ◆ associated with the stakeholders who are not clearly defined; and
- ◆ highly subject to vagaries of the market.

Present development pathways do not benefit the majority in most African countries. Therefore, people are calling for other strategies that will ensure the sustainability of resources on which their lives depend. It is in this light that there is a shift towards sustainable livelihood security.

2.2 Sustainable livelihood

Sustainable livelihood starts with people at grassroots levels. It considers where they are and what resources they have. Some of the features of sustainable livelihood security are:

- ◆ ownership of and access to capital assets as defined by the people.
- ◆ equity and participation.
- ◆ meeting of basic needs.
- ◆ resource management and utilization with long-term view.
- ◆ utilization of traditional knowledge systems.

Security of livelihoods depends on sustainability of the resource-base. As stakeholders, people would employ sound management practices blending their traditional systems with modern technologies. They will be encouraged by the knowledge that their livelihoods depend on the natural resource base.

Sustainable livelihood security must satisfy the basic needs of the people. Emphasis should be on small and medium-scale development projects. Large-scale projects could be undertaken where necessary.

2.3 The need for an African EIA framework

The existing EIA guidelines as applied within the current planning systems are relatively alien in approach. Existing economic evaluation methods of EIAs disregard the social and cultural aspects and the value systems of the African people. African value systems respect nature and such respect is embedded in traditional practices by way of rituals, taboos, folklore and other cultural rites which remain strong where they are still being governed by traditional authority.

Such adherence to cultural norms and values has ensured the continued availability of resources, hence the benefits to society are still being realized. Where such practices are still observed, the resources have been utilized sustainably. Therefore, an EIA of any development project must reflect the true African values of the resources during the cost-benefit analysis. A crucial corollary to this is popular participation.

There are shifts in mainstream environment movement towards the African view, among others, of the people-nature relationship. However, this is not clearly reflected in EIA guidelines and practices. This framework integrates African values of resource management and puts upfront those elements which could make this management a success.

3.0 THE CONTEXT

These are steps which have been taken by global, regional, sub-regional and national institutions to show the need to link development to sound environmental management.

3.1 Global

At the global level, the 1972 Stockholm Conference on Human Environment laid the foundation for a global mechanism to monitor the environment. A foundation was laid for catalyzing national efforts to include environmental dimensions into educational programmes, increasing public awareness about the environment and equipping individuals and institutions with requisite knowledge to take care of the environment. The agenda focused largely on three interrelated sets of issues: pollution, natural resources and human settlements. Several management issues were also discussed. However, this agenda dealt with development effects which were better suited to industrialized countries.

The WCED emphasized the link between ecology and economy, thus putting environment and development as two complementary elements of the development process. The Commission also highlighted the issues of equity, including intergenerational, as basic to sustainable development.

The UNCED process which culminated into the Rio Summit produced a detailed green plan, Agenda 21. This contained over 2,500 recommendations for making national and global development socially, economically and ecologically sustainable. In addition, the Rio Summit produced four other documents:

The Rio Declaration on Environment and Development containing 27 principles regarding the respective rights and reciprocal responsibilities on nations.

A statement of principles on Forests to guide management, conservation and sustainable development of all types of forests.

The Convention on Biological Diversity on how best to conserve the variety of life forms and ensure that benefits are equitably shared.

The United Nations framework Convention on Climate Change aimed at stabilizing greenhouse gases in the atmosphere at levels which would not dangerously upset the global climate system.

In addition, a decision was taken for the elaboration of an International Convention to Combat Desertification (ICCD) in countries experiencing serious drought and/or desertification, particularly in Africa.

Agenda 21 represents a consensus on global issues. Nonetheless, it is at the national level that Agenda 21 can be translated into concrete actions. This is where the knowledge, experience and required capacity are to be found or need to be established.

3.2 Regional

For Africa, especially Sub-Saharan countries, the 1980s was a decade of falling standards. About one-third of its people were struggling to survive below the minimum poverty line. During the 1970s, for example, Africa's non-oil export earnings grew an average 13 per cent a year. In the early 1980's this reversed with export earnings falling from \$50 billion to \$35 billion by 1986. Prices for Africa's export commodities also fell to their lowest since 1945. During the first half of 1980's Africa's terms of trade fell by 35 per cent. Correspondingly, Africa's capacity to import fell, so did its GDP and its national savings. There was a negative GNP growth of 2.8 per cent per year from 1980 to 1987 and it has continued to decline.*

Many African countries entered the 1990s confronted by multiple crises in major areas of concern and public policy such as food security, education, public health, housing, employment, energy, industrial production and international trade, debt and environment. The several and critical problems include: declining soil fertility and erosion; deforestation; desertification; loss of biological diversity; inadequate water supplies and sanitation; fuel shortages; pollution of land, air and water; and growth of informal settlements.

These problems and the prospects of growing poverty and further economic decline have pressurized governments to continue the pursuit of short-term development policies and remedies. This has shifted the ecological and economic costs to the next generation.

The UNCED process enabled African countries to come up with the African Common Position aimed at alleviating the above problems. It presented a new environment and development agenda to influence international policies. This position recognized the need to make significant changes in the major economic, sectoral and environmental policies in African countries, and also in the foreign aid, trade and investment policies of industrialized countries.

In preparation for the 1992 Earth Summit, African Ministers and experts met in Abidjan in November 1991 to set a new African Environment and Development Agenda (AEDA). Various aspects of AEDA had gradually emerged over the years. Benchmarks during the 1980s included the 1980 Lagos Plan of Action, the 1985 African Ministerial Conference in Environment (AMCEN) and the 1989 Kampala Declaration and Agenda for Achieving Sustainable Development in Africa. These were followed in 1991 by the Bamako Pan-African Conference and Declaration on Sustainable Development.

The AEDA focused on 24 priority issues and goals:

1. Food self-sufficiency and food security.
2. Efficient and equitable use of water resources.
3. Management of marine and coastal resources.
4. Securing greater energy self-sufficiency.
5. Managing demographic change and population pressures.
6. Development of human settlements planning and management.

7. Optimizing industrial production with pollution prevention and control.
8. Management of biodiversity and biotechnology.
9. Mitigating global warming and climate change.
10. Rational management of forest resources.
11. Reversing desertification.
12. Environmentally sound development of mineral resources.
13. Popular participation and enhancement of the role of NGOs, youth and women.
14. Development of environmental legislation.
15. Capacity-building, environmental education, training and public awareness.
16. Management of hazardous and solid waste.
17. Additional resources for environmental rehabilitation.
18. Poverty eradication.
19. Drought monitoring.
20. Development of science and technology.
21. Health implications of development.
22. Prevention of natural disasters and reconstruction and rehabilitation.
23. Opening up of land-locked countries and development.
24. Mitigating the impacts of refugees on environment and development.

The new AEDA offers several significant advantages over the former standard agenda. The AEDA shifts the primary focus to development goals and sectors that are the primary concerns of people and governments, (e.g. water, food, health, housing, etc). It also directly involves new and critically important audiences and players such as decision-makers in key government agencies and industry whose policies and investments have significant impact on the environment. The new agenda also encourages approaches that are anticipatory and preventive by requiring that the environment be taken more fully into account at the earliest possible stage in policy formulation, development planning and decision-making processes. Here is the critical entry point for environmental impact assessment (EIA).

3.3 Sub-regional

Many environment and development activities are being undertaken by sub-regional and inter-governmental bodies, e.g. IGADD, SADC, PTA, ECOWAS and COMESA, to name some. All these initiatives synergize to alleviate poverty.

3.4 National

Many African countries, through donor influence or on their own initiative, have undertaken work at the national level to put in place their respective National Conservation Strategies (NCS). The NCSs have facilitated countries to inventory, manage, and assess the potential for the development of natural resources.

Other countries through donor influence, especially from the World Bank, have embarked on the process of producing National Environment Action Plans (NEAPs) and Environmental Investment Programmes of their development programme. In addition, environmental legislation is being formulated. Some countries have already set up statutory bodies to enforce environmental laws and implementation of environmental policies.

However, if the above initiatives have to be realized at grassroots level, there is need for mechanisms at national level for their translation into programmes capable of being implemented at the grassroots. Moreover, NDSs must reflect the needs and aspirations of the grassroots communities in order to provide sustainable livelihoods.

It is against the background of these various initiatives, and with the object of building on them that this EIA framework for Africa is being presented. It is hoped that it will find ready acceptance by African governments and other development agencies. Most importantly, it is intended to link grassroots development commitments in their diverse forms to these and other international environment and development initiatives.

4.0 GOAL AND OBJECTIVES

4.1 Goal

To promote environmentally sustainable livelihoods and development.

4.2 Objectives

4.2.1 Long-term objectives

- a) Conservation and sustainable use of natural resources.
- b) Protection and enhancement of the quality of all life forms.
- c) Promotion of public awareness on environmental issues.
- d) Strengthening and building capacities to carry out EIA
- e) Integration of environmental considerations in development planning processes.
- f) Generation, storage and dissemination of environmental information.
- g) Linking grassroots development strategies to global and international initiatives.

4.2.2 Short-term objectives (project specific)

- a) To assess the nature, intensity and duration of impacts, positive and/or negative, of proposed development projects.
- b) To assist in decision-making with regard to costs and benefits of proposed development projects.
- c) To promote local-community and public participation in the EIA processes.
- d) To promote social and cultural considerations in project design.

5.0 GUIDING PRINCIPLES

- 5.1** Adoption of appropriate policies and legislation to guide the EIA process.
- 5.2** All development projects to be subjected to EIA process.
- 5.3** Equity in allocation of and access to resources, poverty elimination, and promotion of social justice.
- 5.4** Popular participation of all affected and interested parties including grassroots communities, in the EIA process.
- 5.5** Accountability of all participating parties to the public.
- 5.6** Transparency throughout the EIA process.
- 5.7** Decision-making based on authentic and objective information.
- 5.8** Information relating to proposed projects and EIA study to be accessible to any affected and interested parties including grassroots communities.
- 5.9** The EIA process to take special consideration of the role played by women and children in resource management.
- 5.10** The EIA process to take into consideration the impacts of development projects on women and children.
- 5.11** The EIA process to be a tool in the promotion of sustainable livelihoods and sustainable living.

6.0 CONSIDERATIONS OF ENVIRONMENTAL ISSUES IN PROJECT PLANNING

6.1 Approach

Section 2 mentioned the need for the integration of environmental considerations into project planning as an essential component to achieve sustainable livelihoods and development. The environment should be seen as having the following components:

- physical, infrastructure and facilities
- biological
- socio-cultural
- economic
- political

If all of the above are considered in the planning process, the need for an EIA as a separate activity within project planning can be obviated. However, current planning procedures in African countries are neither comprehensive enough nor integrated. In such cases, there is still a need for EIA where a complete EIA report must be prepared.

In preparing an EIA report, it is imperative to outline the methodology of gathering, compiling, and analyzing data. Finally, the report is presented to decision-makers for consideration.

6.2 The EIA process

Several questions may be asked and issues raised in this process:

6.2.1 What is EIA?

It is a process used to predict and consider both positive and negative environmental and social consequences of a proposed development project. The main objective is to promote ecological and social balance within such development.

6.2.2 Why EIA?

EIA is undertaken for the following reasons:

- (a) To integrate environmental considerations in development planning.
- (b) To ensure that potential negative impacts are foreseen and addressed at an early stage in the planning process.
- (c) To identify and enhance the positive impacts of the proposed development activities.
- (d) To examine the trade-offs and the possible alternatives.

- (e) To ensure that all the affected and interested groups (grassroots communities, government authorities, developers, investors, NGOs, etc) participate in the process.
- (f) To promote social and economic equity and the empowerment of people at grassroots level to participate in decision-making.
- (g) To ensure that development projects promote sustainable livelihoods.
- (h) To provide an eco-friendly and people-centred management tool.
- (i) To set up a machinery to carry out mitigation measures and monitoring.
- (j) To promote inter-sectoral linkages.

6.2.3 Essential elements in the EIA process

- (a) The EIA process should be open and involve all affected and interested groups (i.e. it should be transparent). All developers must be compelled to publicize their project proposals to concerned parties.
- (b) Focus on the major positive and negative impacts of the project to facilitate decision-making, based on the range of alternative courses of action. It is essential that both social and technical issues are considered in the decision-making process.
- (c) Identification of different affected and interested groups. It should be recognized that groups with different vested interests will identify and perceive major issues differently.
- (d) Creating effective co-ordination and communication avenues amongst planners, project proponents, government, private sector, NGOs, community groups, etc.
- (e) In-built environmental monitoring and auditing to ensure adherence to the selected options and performance standards.
- (f) Quantification and valuation of identified impacts, where possible, for resource accounting purposes.

6.2.4 Major players in the EIA process

For EIA to be meaningful, it must allow for the participation of all affected and interested parties.

These parties include, but not limited to:

- ◆ Project proponents
- ◆ Investors
- ◆ Government ministries and departments
- ◆ Private sector
- ◆ Local community/ies and community groups
- ◆ NGOs

- ◆ Politicians
- ◆ Traditional leaders and institutions
- ◆ General public
- ◆ Consultants

7.0 PRE-REQUISITES FOR EIA

7.1 Political will

Political support and endorsement are vital if EIA procedures are to be accepted. The commitment of political leadership to create an enabling environment for sustainable development is a pre-requisite for successful EIA policies and other associated activities. This requires the integration of environmental concerns in all major economic and social policies, plans and in decision-making. The broadening of the base for decision-making requires transparent and participatory systems of governance whose major guiding principles are pro-active and preventive approaches.

7.2 Legal framework

Policies and legal frameworks should be formulated where they do not exist, and strengthened where they do. Strengthening environmental law involves a major review and streamlining of existing environmental laws in each country. Priority requirements include the need to update and bring the laws in line with current scientific and technical knowledge and social needs; to reduce overlap and conflicts and to clarify and harmonize the responsibilities of ministries, departments and local governments. This will ensure the identification and filling in of significant gaps.

The legal review should take into account the relevant global, regional and sub-regional conventions and treaties on the environment. Appropriate steps should be taken to ensure that countries fulfill their main obligations under the conventions and treaties which they have ratified.

7.3 Funding mechanisms

It should be a legal obligation for project proponents, be they government, donors, companies or parastatals, or NGOs, to bear the funding of an EIA study.

7.4 Human resource development

It is imperative that African countries build and strengthen their EIA capacities. Countries, through governments, NGOs and other institutions should create training programmes and avail themselves of the various opportunities at national, sub-regional, regional and international levels. In addition, national inventories of EIA expertise should be compiled. This pool of expertise, together with others within and outside the region, can be utilized to build competent national capacities in EIA through exchange programmes and networking.

7.5 Popular participation

Public participation in development activities is crucial if development is to be driven by the needs and aspirations of those it is supposed to benefit and who often bear the associated socio-economic and environmental costs. Women and children, in particular, are the most affected and ignored. Yet, they are the major resource users and managers. Historically, public participation has been understood to encompass four distinct yet closely interrelated concepts - public, participation, consultation, and involvement. It is only when all these factors are considered and redressed that development can be sustainable and livelihoods secured.

7.6 Institutional set-up

The EIA process requires the establishment and strengthening of competent national environment authorities through an Act of Parliament. A central authority will co-ordinate and advise on all environmental issues, including EIA procedures and requirements. It must establish mechanisms to facilitate, oversee and enforce implementation of EIA regulations. Furthermore, it should collaborate with existing institutions and help to strengthen them and improve their competence in carrying out EIAs. The ultimate goal is to have each sector integrate environmental concerns in their activities. There should be enhanced accessibility and communication amongst sectors and between the sectors and central environment authority. The central environmental authority will be responsible for co-ordination and networking at institutional, national, sub-regional and regional levels.

8.0 EIA PROCESS IN THE PROJECT CYCLE

The common practice has been for EIA studies to be conducted as an activity separate from the project cycle and after the project proposal has been prepared. In an effort to achieve sustainable livelihoods and development, it is necessary to integrate the EIA study within the project cycle. This integration should be based on national laws, taking into account country peculiarities in the project design practices.

The EIA in the project cycle should consist of the following components:

8.1 Project brief

A developer prepares and submits a project brief to the national authorizing body. The submission of the project brief must follow the laid down legal procedures. The brief should contain the following:

- ◆ the nature of the project
- ◆ aims and objectives of the project
- ◆ the source of funding and predicted cost
- ◆ the proposed activities at all stages in the project life-span
- ◆ types and sources of materials used
- ◆ products and by-products
- ◆ target groups
- ◆ socio-economic benefits and disadvantages to the affected community.
- ◆ location
- ◆ duration of the project
- ◆ any other relevant information to the project

8.1.1 Project brief review

After receiving the project brief from the developer, the authorizing body considers and sends the brief to the lead agency. The authorizing body further considers the brief with comments made by the lead agency and makes a decision within a specified period. In making the final decision, consideration should be given to public comments.

8.2. Project preparation

8.2.1 Screening

Screening will be minimized due to the integration of environmental considerations in the project cycle. However, sectoral guidelines will be a pre-requisite for screening to be successful. For example, if a project falls within the agricultural sector, then guidelines will be used to ascertain whether communities will be displaced, what the impacts of agro-chemicals used, if any would be, etc. As a preliminary step, screening is necessary to estimate general impacts, compare and measure them against set thresholds and criteria. Screening, therefore, considers whether project impacts need further consideration.

8.2.2 Scoping

All the principal issues for decision-making identified in screening, are addressed at the scoping stage. Scoping determines the extent of and approach to these issues. It is performed by a project preparation team which comprises a leader and a multi-disciplinary team of experts. The team should ensure that all concerned and affected preparation parties are consulted and participate fully in the project preparation stages.

8.2.3 Detailed project preparation report

The integration of environmental concerns in project planning is expected to reduce the wide use of detailed EIA studies. Nevertheless, the 5 major phases of the traditional EIA study will still apply. These are:

Phase	Question
1. Identification	What will happen as a result of the project?
2. Prediction	What will be the extent of the change brought about by the project?
3. Evaluation and Interpretation	Do the changes matter?
4. Mitigation	What can be done about the changes?
5. Report, i.e. Documentation	How can decision-makers be informed of what needs to be done, given the various alternatives?

8.2.3.1 Identification

- i) Naming all project sources of impacts e.g. smoke emissions, water consumption, construction jobs, using checklists or questionnaires. Match this with a list of possible receptors of the impacts e.g. crops, communities using the same water for drinking.
- ii) Identifying impacts through use of checklist, matrices, networks, overlays, models, simulations, etc.

8.2.3.2 Prediction

This characterizes the impacts, causes and effects, on the environment and the local community. This phase draws on biological, social, economic, physical, anthropological data and various analytical techniques. In so doing, many models, which include physical, socio-cultural, mathematical, economical as well as photomontage, experiments and/or expert judgement, are employed.

8.2.3.3 Evaluation and interpretation

This phase involves determining the importance of impacts relative to one another. The degree of severity of these impacts can be assessed in economic terms. Techniques such as cost-benefit analysis must take into account both qualitative and quantitative aspects.

8.2.3.4 Mitigation

Once the adverse effects have been identified, possible measures to address them should be instituted. The efficacy of these measures to achieve the desired objectives should be assessed. A wide range of options could be proposed to prevent, reduce, remedy or compensate for the various adverse impacts. Possible mitigation measures include:

i) Changing:

◆ project sites	◆ raw materials
◆ routes	◆ operating methods
◆ processes	◆ disposal routes
◆ locations	◆ timing
◆ engineering designs	◆ etc.

ii) Introducing:

◆ Pollution control	◆ phased implementation
◆ waste treatment	◆ landscaping
◆ monitoring	◆ personnel training
◆ special social services	◆ public education
	◆ etc

iii) Compensating and Offering:

◆ restoration of damaged resources
◆ money to affected persons, concessions on other issues
◆ off-site programmes to enhance some other aspects of the environment or quality of life.

For mitigation measures to be effective, an action plan is required. This action plan may include:

- technical control measures
- an integrated management scheme
- monitoring
- contingency measures

- operating practices
- project scheduling
- joint management with affected groups
- cost-benefit analysis
- use of matrices of environmental parameters versus mitigation costs
- value judgements

8.3. Project report

This is the last stage of the project preparation phase. The report typically contains:

- i) An executive summary of the main issues
- ii) A project description
- iii) An elaboration of economic and socio-cultural issues
- iv) How the issues in (iii) above were identified and predicted
- v) Options for mitigating adverse impacts and analysis of trade-offs
- vi) An overview of gaps or uncertainties in the information.
- vii) A summary of the report that will be released to the general public.

All this should be contained in a clear, concise, and easy-to-read document. The major technical documents should be attached as an appendix.

8.4 Implementation

Having submitted the report to relevant authorities and interested and affected parties, the report should be revised once their recommendations have been considered. Implementation of the project, if it is approved, should only go ahead once the report is revised to reflect recommendations.

Once the project goes into operation, timely environmental audits should be instituted to ensure compliance with performance standards.

9.0 CONCLUSION

The EIA framework for Africa presented above has introduced and integrated in the development process two important concepts - sustainable livelihoods and popular participation. When people participate in their own development they are able to achieve sustainable livelihoods. Participation is possible in a democratic, accountable and transparent socio-economic and political system.

To be sustainable, development projects must address economic, socio-political and environmental issues. At the economic level, projects should create and improve employment opportunities; increase incomes of the people in the project area in an equitable manner; diversify growth; improve and sustain food security. At the socio-political level, development projects should alleviate poverty and meet basic needs; increase local participation in decision-making; help protect basic human rights; maintain and enhance rural and cultural values; and improve the conditions of women and children.

At the environmental level, projects should have a transparent policy; carry out minimal extraction of resources and employ sustainable methods of resource utilization; generate minimum waste and recycle it; enhance productivity of the environment; correct past errors of environmental damage; have EIAs in which public participation is prominent.

Once the above are in place, EIA will be so fully integrated in development projects that it will cease to exist as a separate process outside of the project cycle.

Annex I
Resource Persons

Annex 1

RESOURCE PERSONS

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Addendum

Annex 1

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