

15.1 Constitutional Requirement for Environmental Protection in Zambia

The Zambian Constitution (as amended by Act Number 18 of 1996), does not specifically state that citizens have the right to a clean and healthy environment. However, it pledges:

“... to ourselves that we shall ensure that the State shall respect the rights and dignity of the human family, uphold the laws of the State and conduct the affairs of the State in such a manner as to preserve, develop, and utilise its resources for this and future generations.”¹

15.2 Institutional and Administrative Structure for EIA in Zambia

15.2.1 The Ministry of Tourism, Environment and Natural Resources

The Ministry of Tourism, Environment and Natural Resources (MTENR) was created in January 2002 by merging the two former Ministries of Tourism and that of Environment and Natural Resources. This merger arose from the need to integrate tourism, environment and natural resources considerations in Zambia’s sectoral and socio-economic planning processes. The MTENR is charged with the responsibility of providing guidance in tourism, environment and natural resources sectors of the economy of Zambia. The Ministry has three core functions: Tourism, Environment and Natural Resources Management and Development where the main focus is to ensure the provision of an appropriate legislative and policy framework that guides the management and development of the three sectors by the Ministry and other partners. The Ministry’s mission is:

"To provide a policy framework for the management and development of tourism, heritage and natural resources and the environment in order to contribute to sustainable socio-economic development for the benefit of present and future generations."

The Ministry consists of five Departments each headed by a Director. These are:-

- Department of Human Resources and Administration;
- Planning and Information Department;
- Environment and Natural Resources Management Department;

¹ Government of the Republic of Zambia, 1996. *Constitution of the Republic of Zambia*. Lusaka, Zambia.

- Tourism Development Department;
- Forestry Department; and
- The Human Resources and Administration Department also coordinates the activities of the Zambia Forestry College in Kitwe, Copperbelt Province.

There are also six Statutory Bodies that fall under the Ministry. These include:

- Zambia Wildlife Authority (ZAWA);
- Environmental Council of Zambia (ECZ);
- Zambia National Tourist Board (ZNTB);
- National Heritage Conservation Commission (NHCC);
- National Museum Board (NMB); and
- Hotel and Tourism Training Institute (HTTI) Trust.

15.2.2 The Environmental Council of Zambia

The Environmental Council of Zambia (ECZ) is a statutory body created under an Act of Parliament, the Environmental Protection and Pollution Control Act of 1990, Cap 204 of the Laws of Zambia. The Council, established in 1992, is mandated to protect the environment and control pollution so as to provide for the health and welfare of persons, and the environment.²

The EPPCA is the supreme environmental law in Zambia and it prescribes the functions and powers of the ECZ as a corporate body. Membership of the board of the ECZ is drawn from specified stakeholders who have a bearing on the protection of the environment and natural resource use. The Minister of Tourism, Environment and Natural Resources appoints the Chairperson of the board. The board appoints the Director, who is the Chief Executive Officer. The Director executes the policies and directives of the board through the inspectorate.

The vision of the ECZ is to attain a rich and pollution-free environment in Zambia. Its mission is:

“to regulate and coordinate environmental management, promote awareness, and ensure environmental protection through the enforcement of regulations, and the prevention and control of pollution in support of sustainable development, so as to provide for the health and welfare of persons, animals, plants and the Environment of Zambia.”³

² ECZ website.

³ Op. cit. Footnote 2.

By administering the Environmental Protection and Pollution Control Act, No 12 of 1990 as amended⁴ (EPPCA), the Environmental Council of Zambia (ECZ) is the major environmental institution in Zambia and the main lead agency on matters pertaining to environmental impact assessment (EIA). It is empowered by the EPPCA to identify projects, plans and policies for which EIA is necessary. Through Statutory Instrument No. 28 of 1997, the ECZ is responsible for facilitating the EIA process and for quality control of environmental assessment statements. The ECZ is further responsible for the supervision of the implementation of the Environmental Management Plans (EMPs).

The ECZ has a number of units which control various aspects of environmental pollution planning and environmental management (see Figure 15.1). These have been organised under two departments:

- The Pollution Control Inspectorate, which is responsible for all pollution and regulation issues pertaining to waste, emissions and toxic substances. This Inspectorate also has a dedicated unit responsible for EIAs, staffed with one Principal Inspector and four Inspectors.⁵
- The Planning and Information Management Department, which comprises units in charge of planning, monitoring, education, communication, information, documentation and data management.

One of the goals of the ECZ is to devolve some powers and functions to regional offices to improve levels of compliance and increase environmental awareness. To this end, the Northern Regional Office has been established, staffed with a Regional Manager supported by a team of inspectors and support staff, as well as smaller offices at Livingstone and Chirundu (see Figure 15.1).

15.2.3 Roles and Responsibilities

Environmental Council of Zambia

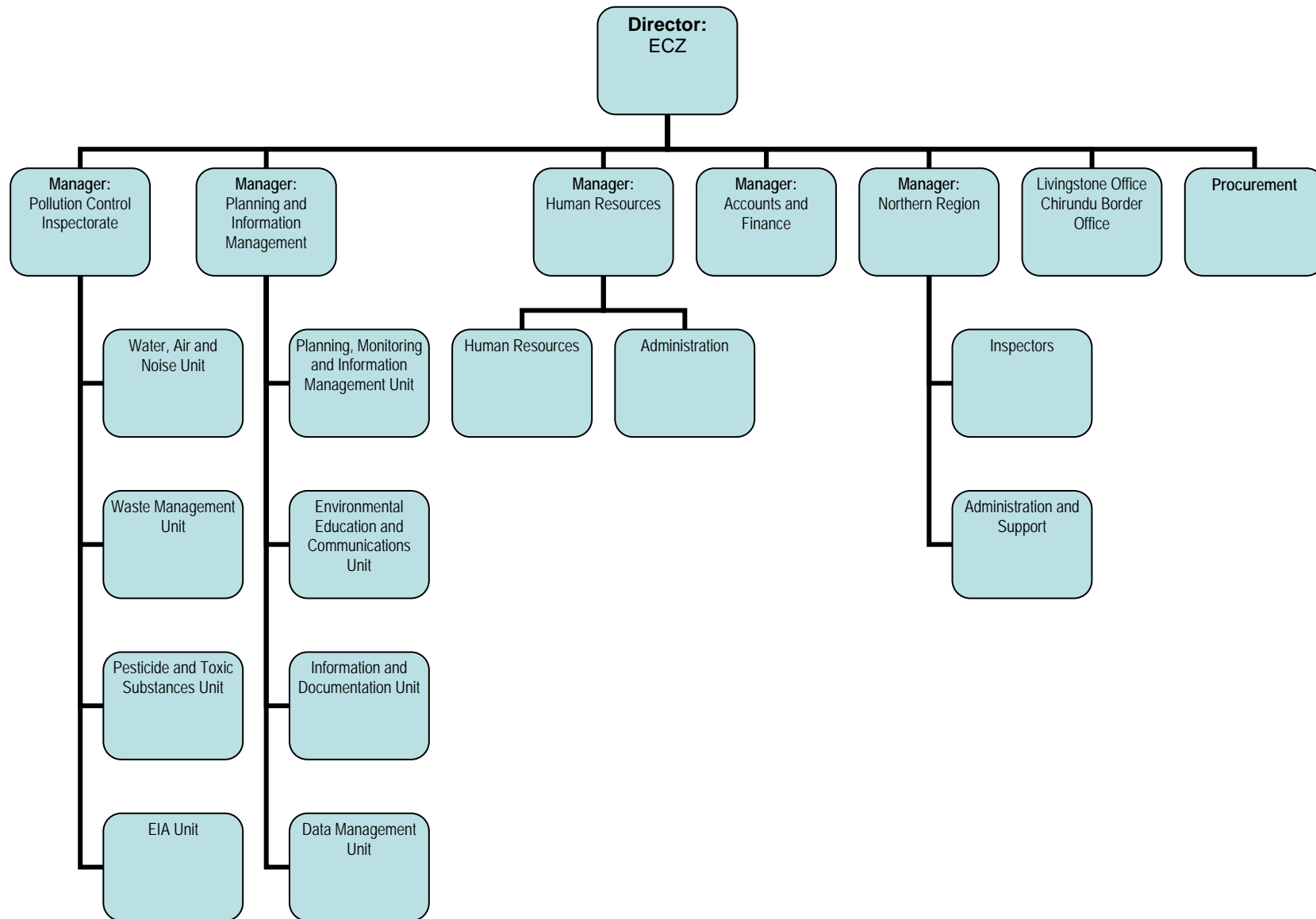
The general functions of the ECZ are to protect the environment and control pollution. However, more specifically, the ECZ serves to:

- Draw up and enforce regulations related to water, air and noise pollution, pesticides and toxic substances, waste management and natural resources management;
- Advise the government on the formulation of policies related to good management of natural resources and environment;
- Advise on all matters relating to environmental conservation, protection and pollution control, including necessary policies, research investigations and training;

⁴ The EPPCA of 1990 was amended by the Environmental Protection and Pollution Control Amendment Act, No 13 of 1994.

⁵ Op. Cit. Footnote 2.

FIGURE 15.1: ORGANISATIONAL STRUCTURE OF THE ENVIRONMENTAL COUNCIL OF ZAMBIA



- Conduct studies and make recommendations on standards related to improvement and maintenance of sound ecological systems;
- Identify projects, plans and policies that need environmental impact assessment;
- Monitor trends in the use of natural resources and their impact on the environment; and
- Request information on the quality, quantity and management methods of natural resources and environmental conditions in Zambia.

The services provided by the ECZ in relation to EIA studies include:

- Assisting the developer to determine the scope of EIA studies;
- review of project briefs, terms of reference, and environmental impact statements (EIS) and decision making;
- disclosure of the EIS to the public through the media;
- holding public meetings to discuss the EIS;
- conducting verification surveys of the affected environment;
- monitoring the project once implemented;
- conducting compliance audits of the project between 12 and 36 months after implementation; and
- general administration of the EIA Regulations.

The ECZ Inspectors have wide-ranging powers of inspection, including sample collection and seizure, at any business premises where they reasonably believe that pollution may be occurring. The inspectors may also arrest persons who have been caught committing an offence in terms of the EPPCA, or who are suspected of committing an offence (Part XI of EPPCA, as amended).

Other Line Ministries

Environmental issues cut across a wide variety of sectors and there are a number of government institutions and agencies outside of the ECZ, which are involved in environmental management. Some of the sectoral agencies and planning authorities who may have to be contacted include⁶:

- Ministry of Lands;
- Department of Forestry in the Ministry of Tourism Environment and Natural Resources;
- Ministry of Energy and Water Development;
- Zambian Electricity Supply Company Ltd (ZESCO);
- Ministry of Mines and Minerals Development;
- National Heritage Conservation Commission (heritage sites);

⁶ Chapman, K and Walmsley B (2003). Country Chapter on Zambia in *'Environmental Impact Assessment in Southern Africa'*. Southern African Institute for Environmental Assessment, Windhoek, pp 267-295.

- Zambia Wildlife Authority;
- Fisheries Department, Ministry of Agriculture and Co-operatives;
- Zambezi River Authority;
- Ministry of Health;
- Radiation Protection Board;
- Ministry of Local Government and Housing.

Some of these agencies have their own environmental units e.g. the Environmental and Social Management Unit in the Road Development Agency, the Director of Mines Safety in the Ministry of Mines and Mineral Development, and the Environmental and Social Affairs Unit in ZESCO. These are known as 'Authorising Agencies' and typically project briefs and environmental impact statements have to be submitted to these authorising agencies first, who in turn submit the EIA documents to the ECZ with their comments attached (see Figure 15.2).

Public

Given the socio-economic implications of most investment projects, it has become established practice to involve potentially affected people during the implementation of the environmental assessment process. Public participation in project formulation and implementation is also a legislative requirement under the Environmental Protection and Pollution Control Act (1990).

Participation of the public is important to ensure that projects are not only economically viable and environmentally sustainable but also that they are socially acceptable. The public brings local knowledge relevant to the project and can assist in designing mitigation measures that prevent social disruption and maximize human welfare.

In addition to the role the public has to play in the EIA process, it is incumbent upon the public to report any pollution to the ECZ inspectorate or the police or local authority (section 86 of EPPCA).

Developer

The developer is responsible for the following in relation to environmental issues:

- Appointing a qualified and experienced environmental consulting team;
- Identifying alternatives;
- Submitting the required EIA documentation to ECZ or the authorising agency;
- Implementing the required mitigation measures through design, technology, layout, route and site selection optimisation studies;
- All remedial actions relating to pollution, or where the pollution has to be cleaned up by the State, paying the costs of such clean-up (section 90 of EPPCA);
- Appointing and paying for post-assessment audits;
- Responding to all directives issued by the ECZ

15.3 Policy and Legal Framework for EIA

15.3.1 Environmental Policy

The first attempt to establish a policy framework document, the National Conservation Strategy, was undertaken by the former Ministry of Water, Lands and Natural Resources in 1985⁷. The aim was to:

- set out an overview of the status of environmental resources in Zambia;
- identify key environmental problems; and
- make recommendations for policies, programmes and actions to address these problems.

Among other things, the National Conservation Strategy proposed draft environmental legislation, and as a result, the Environmental Protection and Pollution Control Act, No. 12 of 1990 (Chapter 204) was enacted in 1990, and in 1992, the ECZ was established.

Following up on the United Nations Conference on Environment and Development in Rio de Janeiro in June 1992, Zambia sought assistance from the UNDP, the World Bank and the Norwegian Agency for Development Cooperation (NORAD) to update the Zambian National Conservation Strategy by preparing a National Environmental Action Plan.⁸ The plan was completed and adopted in 1994⁹.

15.3.2 The Environmental Protection and Pollution Control Act

The Environmental Protection and Pollution Control Act (EPCCA) (CAP 204) was enacted in 1990 (Act 12 of 1990) and was amended by the Environmental Protection and Pollution Control Amendment Act in 1994 (Act 12 of 1999). The EPCCA is divided into twelve parts under the headings:

Part I	Preliminary
Part II	The Environmental Council
Part III	Administration
Part IV	Water
Part V	Air
Part VI	Waste

⁷ Government of the Republic of Zambia (1985). *National Conservation Strategy*. Ministry of Environment and Natural Resources, Lusaka.

⁸ Government of the Republic of Zambia (1994). *The National Environmental Action Plan*. Ministry of Environment and Natural Resources, Lusaka.

⁹Op. Cit. Footnote 6..

Part VII	Pesticides and toxic substances
Part VIII	Noise
Part IX	Ionising radiation
Part X	Natural resources conservation
Part XI	Inspectorate
Part XII	General

The aims of the Act are to provide for the protection of the environment and the control of pollution; to establish the Environmental Council and to prescribe the functions and powers of the Council; and to provide for matters connected with or incidental to the foregoing.

The Act provides the legal framework for the formulation of regulations. It should be noted that the Act and its regulations are currently under review by ECZ with the aim of harmonising environmental decisions with the pollution control and licensing system. This will culminate in an Integrated Licensing System for facilities (pers. comm. E Zulu). In the meantime, all developers must continue to comply with the existing EIA licensing process and described hereunder.

15.3.3 Regulations

In terms of sections 6 and 96 of this Act, the EIA process has been formalised in the Environmental Protection and Pollution Control (Environmental Impact Assessment) Regulations, which were promulgated through Statutory Instrument No 28 of 1997. The EIA process as required by the EIA Regulations is described fully in section 15.4 below.

The other relevant environmental regulations which have been made in terms of EPPCA are:

- The Water Pollution Control (Effluent and Waste Water) Regulations, 1993
- The Air Pollution Control (Licensing and Emission Standards) Regulations, 1996
- The Waste Management (Transporters of Waste/Operation of Waste Disposal Sites) Regulations, 1993
- The Hazardous Waste Management Regulations, 2001
- The Pesticides and Toxic Substances Regulations, 1994
- Ozone Depleting Substances Regulations, 2000

15.3.4 Permits and Licences

Before a developer can commence with an activity listed in the schedules attached to the EIA Regulations, he/she must obtain an **Environmental Authorisation** from ECZ. In addition, various permits are needed for specific aspects of development planning and EIA (see Table 15.1). Permits and licences are issued in accordance with the various regulations listed above.

Table 15.1: Permits in the context of development planning and EIA

Regulation, Act, Byelaw	Permit or licence	Requirements	Implementing authority
The Air Pollution Control (Licensing and Emission Standards) Regulations, 1996	Air pollution monitoring permits	Submission of quarterly reports to the Environmental Council of Zambia (ECZ)	Air and Noise Pollution Directorate, ECZ
The Water Pollution Control (Effluent and Waste Water) Regulations, 1993	Water effluent discharge licences	Submission of half-yearly reports that detail the quantity and quality of effluent discharged	Water (Effluent Discharge) Pollution Directorate, ECZ
Water Supply and Sanitation Act, No 28 of 1997	Water abstraction licences	Annual licence renewal	Water Rights Investigators from the Water Board, Ministry of Energy and Water Development; the requirement for licences is provided for in the Water Act, Chapter 312, 1949.
The Pesticides and Toxic Substances Regulations, 1994	Pesticides and toxic substances licences	An application for a licence needs to be submitted prior to importing any pesticide or toxic substance listed in the Pesticides and Toxic Substances Regulations.	Pesticides and Toxic Substances Directorate, ECZ
The Waste Management (Transporters of Waste/Operation of waste Disposal Sites) Regulations, 1993 The Hazardous Waste Management Regulations, 2001	Waste management	An application for a licence needs to be submitted prior to the transport of wastes or operation of a waste disposal plant and for the generation and storage of hazardous waste.	ECZ
Local Authority byelaws	Building permits	Currently, the ECZ has no authority in urban areas. Thus, although EIAs should precede any such authorisations, building permits are being issued without referring developments to the ECZ.	Ministry of Local Government and Housing

15.3.5 Penalties

Part IX of the EIA Regulations specifies the penalties for non-compliance with any of the provisions of the regulations, including:

- Failure to prepare and submit a project brief;
- Failure to prepare and submit an EIS;
- Making false statements in any environmental documentation;
- Non-compliance with any of the conditions contained in the authorisation permit.

The remedial costs associated with the repair of any environmental damage caused through the violation of any of the provisions of the regulations or through any non-compliance with the authorisation permit must be borne by the person responsible for such violation (Regulation 35).

15.3.6 Fees

Regulation 36 states that the Council will charge fees to cover the costs of reviewing all relevant EIA documentation and reports. The fees are set out in the Fifth Schedule to the Regulations and are revised from time to time. The fees as of the last review in 2000 are summarised in Table 15.2 below.

Table 15.2: EIA Fees

Item	Fee
Review of project briefs	2778 fee units ¹⁰
Review of EIS (including post-implementation audits and monitoring) is based on project value ¹¹ :	
<US\$100,000	US\$1,000
US\$100,000 – 500,000	US\$10,000
US\$500,000 – 1,000,000	US\$25,000
US\$1,000,000 – 10,000,000	US\$50,000
US\$10,000,000 – 50,000,000	US\$100,000
>US\$50,000,000	US\$150,000
Search Fees for access to EISs	278 fee units

15.3.7 Guidelines

The ECZ is in the process of developing sector guidelines for reviewing EIA applications. To date, five sets of guidelines currently exist in draft format for the following sectors: energy, fisheries, forestry, social impact assessment and tourism. Guidelines on mining, although complete, still require improvement.

Once the various sector guidelines have been finalised, the ECZ will use them for reviewing EIAs, as well as for developers and consultants undertaking an EIA in one of the sectors concerned. Some of the authorising agencies have been proactive in developing their own guidelines, for example, the Zambia Wildlife Authority has developed its own EIA guidelines to review developments in protected areas; the National Heritage Conservation Commission has developed guidelines for development near heritage sites and the Road Development Agency has recently

¹⁰ 1 Zambian Kwacha = 180 fee units

¹¹ Project 'value' means the total capital cost of the project

completed a Procedures Manual for Environmental and Social Management in the Roads Sector¹², which includes guidance on road development EIAs.

15.3.8 Environmental Standards

Emission standards have been established for water quality, ambient air quality and air emissions. The latter, however, are considered too stringent. The authorities are in the process of developing noise standards as well and regulations are in draft.¹³

Table 15.3 presents information on air emission requirements in Zambia and Table 15.4 provides information on effluent standards for water. There are no Zambian standards yet for noise and solid waste and the WHO, World Bank or donor country standards apply.

Table 15.3: Air Emission Requirements - Zambia

Pollutant	Concentration (as mg/Nm ³)
Sulphur Dioxide	1000
Arsenic	0.5
Cadmium	0.05
Copper	1.0
Lead	0.2
Mercury	0.05
Particulates- Smelter	50
Particulates- Other sources	50

The Air Pollution (Licensing and Emission Standards) Regulations, 1996

Table 15.4: Effluent Discharge Requirements – Zambia

Pollutant	Concentration (as mg/l)
pH	6-9 units
BOD	50
COD	-
Oil and grease	20
Total suspended solids	100
Dissolved solids	3000
Heavy metals- total	-
Arsenic	0.5
Cadmium	0.5
Chrome, total	0.1
Copper, total	1.5
Copper, dissolved	-
Iron, total	2
Iron, dissolved	-
Lead	0.5
Manganese	1
Mercury	0.002
Nickel	0.5

¹² Zambian Ministry of Works and Supply (2007): *Procedures Manual for Environmental and Social Management in the Roads Sector in Zambia*. Road Development Agency. In prep.

¹³ Op. Cit. Footnote 6 and pers. comm. E Zulu.

Pollutant	Concentration (as mg/l)
Selenium	0.02
Zinc	10
Chlorine, total residual	-
Sulphide	-
Temp, at point of entry	40°C
Temp, at edge of mixing zone	-

The Water Pollution Control (Effluent and Waste Water) Regulations 1993

15.3.9 Certification of Environmental Consultants

There are no formal procedures in place for the certification and registration of environmental practitioners in Zambia.

15.4 EIA Procedural Framework in Zambia

The EIA process to be followed is clearly set out in the EIA Regulations, 1997. This process is shown schematically in Figure 15.2 and is described in the following sub-sections.

15.4.1 Screening

The first step in the EIA process is to determine whether the project is listed in the First or Second Schedules attached to the EIA Regulations, 1997. This will determine whether the developer has to undertake a Project Brief or a full EIA.

In terms of Regulation 3(2), a **project brief** is required if:

- a. A developer of any project set out in the First Schedule (see Appendix 15-1), whether or not the development is part of a previously approved project;
- b. Any alterations or extensions of any existing project which is set out in the First Schedule;
or
- c. Any project which is not specified in the First Schedule, but for which the Council (ECZ) determines a project brief should be prepared.

Where the ECZ determines that the project is likely to have a significant impact on the environment, it shall require an environmental impact statement to be prepared in accordance with the EIA Regulations (Regulation 7(1)). Regulation 7(2) sets out the circumstances under which an **environmental impact statement** (EIS) is required:

- a. A developer of any project specified in the Second Schedule (see Appendix 15-2) regardless of whether it is part of a previously approved larger project;

If the proposed project is not listed on either Schedule, then the developer is not required to complete a project brief or EIS.

15.4.2 Project Brief

A project brief means a report made by the developer including preliminary predictions of possible impacts of a proposed project on the environment and constituting the first stage in the environmental impact assessment process.

Once a developer has determined that he needs to prepare a project brief, he must conduct such studies that will enable him, or his consultant to compile a document which states the following in a concise manner (Regulation 4 of the EIA Regulations, 1997):

- (a) the site description of the environment;
- (b) the objectives and nature of the project and reasonable alternatives;
- (c) the main activities that will be undertaken during site preparation, construction and after the development is operational;
- (d) the raw and other materials that the project shall use;
- (e) the products and by-products, including solid, liquid and gaseous waste generation;
- (f) the noise level, heat and radioactive emissions, from normal and emergency operations;
- (g) the expected socio-economic impacts of the project and the number of people that the project will resettle or employ, directly, during construction and operation etc;
- (h) the expected environmental impact of the project, taking into account the provisions of paragraphs (c) to (g);
- (i) the expected effects on biodiversity, natural lands and geographical resources and the area of land and water that may be affected through time and space; and
- (j) A description of adverse mitigation measures and any monitoring programmes to be implemented.

Regulation 5 of the EIA Regulations relates to the submission of the project brief to the ECZ:

- (1) A developer shall submit **six copies** of the project brief to the Council.
- (2) If the Council considers the project brief to be complete, the Council shall transmit the project brief to the authorising agency for comments within **seven** days of receiving the project brief (see Table 15.5).
- (3) The authorising agency referred to in sub-regulation (2) shall make comments and transmit them to the Council within **thirty** days of receiving the project brief.
- (4) Where the agency fails to make comments or transmit the project brief to the Council within the period specified in sub-regulation (2), the Council shall proceed to consider that project brief.

Regulation 6 of the EIA Regulations relates to the consideration of the project brief and the ECZ's decision:

- (1) The Council shall consider the project brief and the comments received.
- (2) If the Council is satisfied that the project will have no significant impact on the environment, or that the project brief discloses sufficient mitigation measures to ensure the acceptability of the anticipated impacts, the Council shall within the **forty** days of receiving the project brief from the developer, issue a decision letter, with conditions as appropriate, to that effect, to the authorising agency (see Figure 15.2).

However, if the ECZ determines that a project is likely to have a significant impact on the environment, it will inform the developer within **forty** days of receiving the project brief, that an environmental impact statement (EIS) must be prepared in accordance with the EIA Regulations, 1997 (see Figure 15.2).

Table 15.5: Review Times for a Project Brief

Step	Action	No of days ¹⁴	Comment
1	Developer submits Project Brief to ECZ		
2	ECZ sends to Authorising Agency for comment	7	
3	Authorising Agency sends comments to ECZ	30	
4	ECZ to inform developer of decision	40	From date of original submission (step 1)
	TOTAL REVIEW TIME FOR PROJECT BRIEF	40	

15.4.3 Terms of Reference for an Environmental Impact Statement

If the project is listed on the Second Schedule (see Appendix 15-2), an EIA is required. The first step of the EIA process is to develop the terms of reference (ToR) for the study. The requirements for developing a ToR are set out in Regulation 8 of the EIA Regulations, as follows:

- (1) An environmental impact statement shall be prepared and paid for by the developer in accordance with **terms of reference** prepared by the developer in consultation with the Council.
- (2) To ensure that public views are taken into account during the preparation of the terms of reference, the developer shall organise a public consultation process, involving Government agencies, local authorities, non-governmental and community-based organisations and interested and affected parties, to help determine the scope of the work

¹⁴ A 'day' means an official **working** day

to be done in the conduct of the EIA and in preparation of the environmental impact statement (EIS).

- (3) The developer shall prepare a draft ToR taking into account issues contained in the Third Schedule (see Appendix 15-3) and the results of the consultations undertaken under sub-regulation (2) and submit these to the ECZ for approval.
- (4) On receipt of the draft ToR, the Council shall determine, within a period of **five** days from receipt of the draft, whether the ToR are acceptable, and if the ToR are unacceptable, the developer shall, with the assistance of the Council, prepare the final ToR.
- (5) A developer shall not begin work on preparing the EIS until the Council has approved the ToR.
- (6) The ToR shall include a direction that those responsible for preparing the EIS to provide all the information in the report as specified in Regulation 11 (see section 15.4.4 below) together with such other matters as are deemed necessary by the Council.

15.4.4 Public Consultation Process

In Zambian law, public consultation is not formally required at the project brief stage of the process, however, for larger and/or contentious projects it is advisable to consult with the interested and affected parties (I&APs) at the earliest possible stage of the process i.e. during the project brief phase.

The EIA Regulations require public input to the terms of reference (see section 15.4.3 above) and during the preparation of the EIS, as set out in Regulation 10, as follows:

- (1) The developer shall, prior to the submission of the EIS to the Council, take all measures necessary to seek the views of the people in the communities which will be affected by the project.
- (2) In seeking the views of the community in accordance with sub-regulation (1), the developer shall:
 - (a) publicise the intended project, its effects and benefits, in the mass media, in a language understood by the community, for a period not less than **fifteen** days and subsequently at regular intervals throughout the process; and
 - (b) after the expiration of the period of fifteen days, referred to in paragraph (a), hold meetings with the affected communities to present information on the project and to obtain the views of those consulted.

The minutes of all meetings held, a list of registered I&APs and all the key issues raised must be included in the EIS. Of key importance is to demonstrate where each issue has been addressed in the EIS.

15.4.5 Environmental Impact Statement

There are several well defined steps that need to be followed in preparing an EIS. These are set out in the Fourth Schedule of the Regulations¹⁵ and are summarised below.

Step 1: Appoint an Environmental Team and Specialists

Once the ECZ has approved the terms of reference for the EIS, the developer should submit the names and qualifications of the members of the environmental team, including all the specialists, to the ECZ for approval. If the Council rejects any names, it must provide a reason and request the developer to submit another name within a specified time frame (Regulation 9 (3)). It is recommended that preference should be given to experts with specific knowledge of the type of project being proposed and local or similar conditions. It is an unstated rule that suitable Zambian nationals are to be included in EIA consultant teams. Many of the donor organisations enforce this by specifying that, should an expatriate consultant be awarded a local project, a Zambian national is to accompany that consultant throughout the job. The environmental team should also be independent of the developer i.e. they should not have any financial or other interest in the project or the developer's company, or associated companies.

On large-scale projects and/or those which may be contentious and/or those which may be planned in sensitive areas, it is advisable to appoint an external, independent reviewer at the outset of the process. There are several benefits of having an external reviewer on the team, such as:

- It provides quality assurance;
- It helps to keep projects on track;
- It ensures credibility;
- It helps to build capacity;
- It reduces risk of delays;
- It can contribute to better decision-making.

Preferably the external reviewer should be involved from the beginning of the process, where he/she can have the maximum influence on guiding the process correctly, through critical input to and comment on, the terms of reference, the scoping process, the specialist studies and the EIS.

Step 2: Scoping

The aims of scoping are to:

- Review all applicable laws, policies and planning documents which may relate to the type of project and/or the area in which it is to be located. A list of potentially applicable acts, regulations and policies is presented in Table 15.7;

¹⁵ Guidelines for Developers in Conducting EIAs.

- Review all international obligations which may be affected by the proposed development e.g. the Ramsar Convention, the Convention on Biological Diversity etc. Zambia's international obligations are summarised in Table 1.1 in Chapter 1 of this Handbook;
- Identify the relevant environmental standards to be applied in the design of the project (refer to Tables 15.3 and 15.4);
- Identify all possible alternatives. These may relate to: route, site, layout, design, technology etc.;
- Conduct an alternatives assessment to determine the preferred environmental options;
- Identify the key impacts associated with the preferred option(s) and determine, in consultation with the ECZ and the developer, which specialist studies need to be undertaken. The following criteria should be used to determine the impacts: magnitude, extent, significance and special environmental or social sensitivity.

Step 3: Baseline Studies and Impact Assessment

Once the key issues have been identified during scoping, the environmental consulting team will undertake all the necessary baseline studies, including specialist studies where necessary, according to the approved terms of reference. At the same time, the consultants must collate all relevant project information so that the impacts of each activity can be assessed and ranked in terms of:

- The quantitative changes to the environment as a result of the activity, where that change can be quantified;
- In cases where the predicted changes cannot be expressed quantitatively, the qualitative changes to the environment must be described. Included in this category is the notion of social acceptability of a project.

For each impact the consultants must express the following:

- The magnitude of the impact i.e. size and geographical extent;
- The duration of the impact i.e. once-off, short-term, long-term etc.;
- The probability of occurrence;
- The extent to which the impact can be mitigated or not;
- Whether the impact is reversible or not;
- The confidence in the prediction;
- The significance of the impact taking into account all of the above.

Where more than one alternative has been considered in the EIA, each alternative should be assessed according to the criteria listed above. The alternatives can then be compared on the basis of economic, socio-cultural and environmental gains and losses. The alternatives should then

be ranked and the EIS report should make recommendations based on sound economic and environmental analysis.

Step 4: Identification of Mitigation Measures

One of the main aims of the EIA is to try and eliminate as many negative impacts as possible through an interactive process with the developer and the ECZ. However, there will always be some residual impacts which will need to be managed. This can be done through the inclusion of, for example: pollution control equipment, noise control measures, solid waste minimisation through reclamation, recycling and re-use, erosion control works, rehabilitation and revegetation programmes.

The costs of the recommended mitigation measures must be calculated and included in the project's overall financial model.

Step 5: Environmental Impact Statement

Regulation 11 sets out the minimum contents of an Environmental Impact Statement (EIS), however, the consultants should also make sure that they include all the requirements of the approved ToR when they are drafting the EIS report. The basic contents of the EIS should include:

- (a) a description of the project, and all reasonable alternatives, including all associated activities required to support the proposed project;
- (b) a description of the proposed site and/or route, together with reasons for rejecting alternative sites and/or routes;
- (c) a brief description of the site and/or route and the surrounding environment including any information necessary to identify and assess the environmental effects of the project;
- (d) a description of the raw material inputs into the project and their potential environmental effects;
- (e) a description of the technology and processes that shall be used;
- (f) a description of the products and by-products of the project;
- (g) the environmental effects of the project, and reasonable alternatives, including the direct, indirect cumulative, short-term and long-term effects;
- (h) the socio-economic impacts of the project such as resettlement of the affected people.
- (i) an impact management plan containing a description of measures proposed for preventing, minimising or compensating for any adverse impact, and enhancing beneficial effects, and measures to monitor effluent streams or important environmental features which may be affected by the project; and
- (j) an indication of whether the environment of any neighbouring state is likely to be affected.

The EIS must also contain an executive summary, stating the main findings and recommendations and must be signed by every individual person involved in its preparation.

The EIS should also contain the specialist studies as appendices, as well as all the relevant documentation relating to the public consultation programme.

The developer must submit **twelve** copies of the EIS to the ECZ (Regulation 14(1)).

15.4.6 Review Process

Once the developer has submitted the EIS to the ECZ, the Director of the Council will enter the EIS onto an EIS Register and the following process will be followed, as prescribed in Regulations 15 to 25 and shown schematically in Figure 15.2. The review process times are shown in Table 15.5 below.

15. (1) The Council shall, within **seven** days of receipt of the environmental impact statement, transmit a single copy of the statement to the authorising agency for comments e.g. Road Development Agency, Department or the Director of Mines Safety etc (see section 15.2.2).
 - (2) The authorising agency shall, within **thirty** days of receiving the EIS, make comments and transmit them to the Council.
 - (3) An authorising agency may, in considering the EIS under this Regulation, carry out such other procedures as deemed appropriate.
-
16. (1) The Council shall:
 - (a) distribute copies of the EIS to relevant ministries, local government units, parastatals, non-governmental and community-based organisations, interested and affected parties;
 - (b) place copies of the EIS in public buildings in the vicinity of the site of the proposed project;
 - (c) place a notification in at least two national newspapers three times per week for two consecutive weeks and broadcast a notification on national radio, detailing the place and times where copies of the EIS are available for inspection and the procedure for submitting comments.
 - (2) The Council may organise, or cause to be organised, public meetings in the locality of the proposed project.

- (3) Any person wishing to make a comment on the EIS must send comments to the Council, within **twenty** days from the date of the last notification issued in accordance with paragraph (c) of sub-regulation (1).¹⁶
- (4) The Council may extend the period for receipt of written comments up to a maximum of fifteen days if the Council considers that:
- (a) many contentious issues have arisen, indicating the sensitive nature of the project; or
 - (b) the remoteness of the project location causes logistical problems for the consultation process.
17. (1) The Council shall consider the EIS and all the comments it has received under Regulations 15 and 16, in order to determine whether to issue a decision letter in accordance with Regulation 21 (see below) or to hold a public hearing in accordance with sub-regulation (2).
- (2) The Council shall hold a public hearing on the EIS if:
- (a) as a result of the comments made by the I&APs, the Council is of the opinion that a public hearing will enable it to make a fair and just decision; or
 - (b) the Council considers it necessary for the protection of the environment.
24. (1) Whenever a public hearing is to be conducted under these Regulations:
- (a) notice thereof shall be published three times a week for two consecutive weeks in the national papers **at least fifteen days prior** to the public hearing; and all expenses of the notices shall be incurred by the project proponent;
 - (b) all documents shall, from the end of the period of the public review, until the end of the public hearing remain available for public inspection accompanied by all written comments at the location specified under regulation 16;
 - (c) such hearing shall begin **not later than twenty-five days** after the last public notification, provided that if the Council determines that the number and complexity of the issues to be considered at a hearing, require additional preparation time on the part of those wishing to make a presentation to the hearing, it can extend this period up to a maximum of **ten** days;
 - (d) the Council shall, where it feels necessary and appropriate, request any relevant persons to be present at the public hearing to make comments or solicit in writing comments from other Government agencies which have expertise or regulatory power over the proposed project, as well as the authorising agency.

¹⁶ The 20 day period is incorrect and the ECZ are addressing this anomaly as part of the legal review process.

- (2) The Council shall appoint a person who, in its opinion, is suitably qualified to preside over the public hearing and who shall serve on such terms and conditions as may be agreed between the Council and the person so appointed.
 - (3) The public hearing shall be conducted at a venue which shall be convenient and accessible to those persons who are likely to be specifically affected by the project.
 - (4) On the conclusion of the public hearing the person presiding at the hearing shall, within **fifteen** days from the termination of the public hearing, make a report of his/her findings to the Council.
19. (1) Any person may attend a public hearing, either in person or through a representative, and make presentations, provided that the person presiding at the public hearing shall have the right to disallow frivolous and vexatious presentations, which lead to the abuse of the process.
- (2) The Council shall determine the procedure for making presentations at a public hearing.
20. (1) In making a decision regarding an EIS under these Regulations, the Council shall take into account:
- (a) the impact predictions made in the EIS;
 - (b) the comments made by the I&APs;
 - (c) the report of the person presiding at the public hearing, where applicable;
 - (d) other factors which the Council considers crucial in the particular circumstances of the project.
- (2) The Council shall make its decision regarding the granting of an Environmental Authorisation in accordance with Regulation 21 (see below), within **thirty** days after receipt of a report from a public hearing or **twenty** days from the date on which the EIS was originally submitted to the ECZ.
21. (1) The Council shall take into account the whole review process and issue a decision letter stating:
- (a) that the project is approved and an Environmental Authorisation will be granted; or
 - (b) the project is rejected;
 - (c) the project is approved subject to the developer meeting the stipulated conditions.
22. (1) In issuing its decision letter the Council shall, as the case may be:
- (a) provide reasons for any rejections; or

- (b) specify the conditions to be attached, as an Annex to any authorisation licence, permit or permission issued to the developer based on the impact management plan (EMP) provided in the EIS. The conditions must also include a work programme which provides a schedule for implementation of the conditions.

(2) An Annex containing any specified conditions must be signed by the Director.

23. The decision of the Council must be communicated to all parties concerned within **fifteen** days of the decision.

24. (1) If any party is aggrieved by the decision of the Council, that party may, in writing, appeal to the Minister against the decision of the Council within a period of **ten** days after receipt of the decision letter from the Council.

(2) The Minister shall render his decision within **fourteen** days of receiving an appeal.

(3) If the aggrieved party is not content with a decision of the Minister, he may appeal to the High Court.

25. An authorisation licence, permit or permission, that has been issued, following preparation of an environmental impact statement, shall not be valid unless it has an Annex signed by the Director stipulating the conditions to be implemented.

The review times for the EIA process are summarised in Table 15.6 below.

Table 15.6: Review Times for the EIA Process

Step	Action	No of days ¹⁷	Comment
1	Developer submits ToR to ECZ		
2	ECZ to accept or reject ToR	5	
3	Submit names of environmental project team to ECZ for approval	-	
4	Developer to submit EIS to ECZ		
5	ECZ to send to authorising agency for comment	7	
6	Authorising Agency sends comments to ECZ	30	
7	ECZ to publicise EIS	15	
8	Public comment period	20	From end of step 7
9	<i>Additional comment period</i>	<i>15</i>	<i>Optional</i>

¹⁷ A 'day' means an official **working** day

IF NO PUBLIC HEARING REQUIRED, GO TO STEP 15			
10	ECZ to publicise public hearing	15	
11	Notice period for public hearing	15-25	From last day of public notices (step10)
12	<i>Extension of notice period</i>	<i>10</i>	<i>Optional</i>
13	Submission of public hearing report to ECZ	15	From date of public hearing
14	Decision by ECZ	30	
15	Decision by ECZ if no public hearing	20	After original submission of EIS to ECZ (Step 4). As noted in Footnote 286, this 20 day period is incorrect and is under review.
16	Communication of decision to I&APs	15	After step 15
APPEALS			
17	Written appeals to be submitted to the Minister	10	After step 16
18	Minister's decision on the appeals	14	

It should also be noted that all the documentation relating to the project brief, the EIS, public comments, terms of reference, specialist studies etc will be regarded as public documents (Regulation 26). If the developer requires any part of the information to remain confidential, he/she must apply in writing to the Council in the manner prescribed in Regulation 27 and his/her request will be considered and accepted, whereupon all designated proprietary information will be kept confidential. If the application is rejected, the developer will be given an option as to whether to continue with the EIA process or to withdraw his application.

The environmental authorisation issued by ECZ will be valid for a period of **three years**. If no work has started on the project within that period, the developer must re-register with the authorising agency. The authorising agency will then have to decide whether another EIS is required or whether a supplement to the original EIS can be submitted (Regulations 30-33).

15.4.7 Post Assessment Environmental Audits

28. (1) In executing a project, the developer shall take all practicable measures to ensure that the conditions attached to an authorisation document are complied with.

(2) Subject to sub-regulation 3, the developer shall undertake an environmental audit of the project within a period of **not less than twelve months** and **not more than thirty six months** after the completion of the project or the commencement of its operations, whichever is earlier.

(3) Notwithstanding sub-regulation (2), the Council may ask the developer to undertake an environmental audit at any time.

- (4) The environmental audit shall be carried out by at least two appropriately qualified persons from the team which prepared the EIS and where this is not possible, by persons whose names and qualifications have been approved by the Council for the purpose.
 - (5) The audit shall focus on the implementation of the conditions attached to the authorisation document and shall include conclusions on the extent to which:
 - (a) the measures specified in the conditions have been implemented according to the schedule; and
 - (b) the measures are achieving the expected results and, where deficiencies exist, suggest measures to deal with them.
 - (6) The Council may, after receiving the environmental audit report referred to in sub-regulation 7 below, require the developer to carry out specified remedial actions and further audits at such times as the Council considers necessary.
 - (7) An environmental audit report shall be prepared after each audit and shall be submitted to the Council by the developer within such time as the Council may determine.
29. (1) An inspector appointed under EPPCA may at all reasonable times enter upon any land, premises or other facilities related to a project, for which a project brief or an EIS has been made under these Regulations, to undertake investigations relating to the implementation of any condition or measure to be taken following an environmental audit.
- (2) An inspector acting pursuant to this Regulation may examine and copy, record and exercise all or any of the powers provided for under section 84 of EPPCA.

15.5 Other Relevant Environmental Legislation in Zambia

Environmental issues cut across a wide variety of sectors and, under the current situation, there are numerous pieces of legislation in Zambia, which have a bearing on the environment and should be considered in EIA decision making. The sectors, titles of the legislative instruments, the responsible agency and the purpose of the legislation are summarised in Table 15.7.

Table 15.7: Other Potentially Applicable Sectoral Requirements

Environmental Component	Responsible Agency	Title and Date of Legislation	Purpose
Water Resources	Department of Water Affairs - Ministry of Energy and Water Development (MEWD)	1. The Water Act, Cap 312, 1948 2. National Water Policy, 1994 3. Water Pollution Control (Effluent and Waste Water) Regulations, 1993 4. Water Supply and Sanitation Act, No 28 of 1997	To provide for ownership, control and use of water. There is a new Water Resources Management Bill which is awaiting submission to Parliament. The Bill is expected to delegate management of water resources through Catchment Councils established under the Act. These Catchment Councils will consist of the Water Users of the Catchment. To promote sustainable water resources development with a view to facilitate an equitable provision of adequate and quality water for all users and to ensure security of supply under varying conditions. This Act regulates water supply and sewerage utilities for the purpose of protecting consumers from unjustified tariffs.
Air	ECZ	Air Pollution Control (Licensing and Emission Standards) Regulations, 1996, made in terms of Part V of EPPCA, 1990	Requires point source polluters to be licensed.
Noise	ECZ	Part VIII of EPPCA, 1990	Provides for noise emission standards to be established and requires permits to exceed said emissions. Regulations are in draft.
Waste	ECZ	Waste Management (Transporters of Wastes / Operation of Waste Disposal Sites) Regulations, 1993, made in terms of Part VI of EPPCA, 1990	To ensure adequate waste management for all project sites and operating areas. Requires all the transportation and disposal of waste and the operation of waste sites to be licensed.
Hazardous Waste	ECZ	Hazardous Waste Management Regulations, 2001, made in terms of Part VI of EPPCA, 1990	Provide for the storage, transportation, handling, treatment and illegal trafficking of such waste and the licensing of such activities.
Toxic Substances and other Environmentally Hazardous Substances	ECZ Radiation Protection Board, Ministry of Health and ECZ	1. Pesticides and Toxic Substances Regulations, 1994, made in terms of Part VII of EPPCA, 1990 2. Ozone Depleting Substances Regulations, No 27 of 2000 3. Ionising Radiation Act, 1975 and Part IX of EPPCA	Stipulates the registration, labelling and packaging, general handling, use and safety, and storage and disposal of pesticides and toxic substances. Sets out the control measures and permit requirements. The Act provides for the protection of public workers from dangers arising from the use of devices or materials capable of producing ionising radiation.
Energy	Ministry of Energy and Water Development- MEWD	1. Energy Regulation Act, Cap 436, 1995 2. National Energy Policy	To establish the Energy Regulation Board; to provide for the licensing of undertakings for the production of energy or the production or handling of certain fuels.
Electricity	Ministry of Energy and Water Development	Electricity Act	It is the governing Act for the operations of the power stations

Environmental Component	Responsible Agency	Title and Date of Legislation	Purpose
	Energy Regulation Board		
Health	Ministry of Health	Public Health Act, No 22 of 1995	Provides for the prevention and suppression of diseases and general regulation of all matters connected to public health.
Planning and Zoning	Ministry of Local Government and Housing	Town and Country Planning Act, Cap 283, 1962, as amended.	To provide for the appointment of planning authorities, to prepare, approve and revoke development plans; to control the development and subdivision of land.
Forestry	Forestry Department – Ministry of Tourism, Environment and Natural Resources	1. Forest Act No.7, 1999 2. National Forestry Policy 3. Local Forests Control and Management Regulations.	To control, manage, conserve and administer National and Local forests, participation of local communities, traditional institutions and NGOs; Conservation and sustainable use of forests and trees; and implementation of international instruments.
Mining and Mineral Resources	Ministry of Mines and Mineral Development	Mines and Minerals Act, No. 31 of 1995	To regulate the law relating to mines and minerals
Petroleum Resources	Ministry of Mines and Mineral Development	Petroleum (Exploration and Production Act, No 13 of 1985	The Act aims to regulate the exploration, development and production of petroleum products. Even though the Act contains some environmental obligations, it is silent on natural gas exploration. Moreover, it does not provide for the need to conduct EIAs before applying for the licensing of petroleum exploration and production activities.
Conservation	Ministry of Tourism, Environment and Natural Resources	Natural Resources Conservation Act, Cap 315, 1970, read with Part X of EPPCA, 1990 National Policy on Wetlands Conservation, September 2001	Monitoring of natural resource conservation and utilization outside forest reserves and national parks. This Policy was formulated in response to the fragmented sectoral policies and Acts. It aims to provide a holistic programme of action to promote the conservation and wise use of wetland ecosystems. It acknowledges the importance of wetland ecosystems in Zambia in providing major fisheries, and as important habitats for various wildlife species.
Wildlife and Natural Resources	Zambia Wildlife Authority (ZAWA)	Zambia Wildlife Act, No. 12 of 1998	To control and manage National Parks, Game Management Areas and bird sanctuaries for the purpose of conserving and enhancing wildlife ecosystems.
Agriculture and Land	Ministry of Agriculture and Cooperative and Ministry of Lands	1. Agriculture (Fertilizer and Feeds) Act No. 226 of 1990 2. Lands Act, 1995	To regulate and control the manufacture, processing and importation and sale of agricultural fertilizers and feed, and to establish minimum standards of purity
Fisheries	Fisheries Department – Ministry of Agriculture and Co-operatives	Fisheries Act, Cap 200, 1974	To provide for the development of commercial fishing and the registration of fishermen and their boats and the protection of endangered species.

Environmental Component	Responsible Agency	Title and Date of Legislation	Purpose
Transmission	Ministry of Energy and Water Development	The Electricity Act, 1995	
Tourism	Ministry of Tourism, Environment and Natural Resources	Tourism Act, No. 29 of 1985	The Act provides for the control of tourism enterprises. Although the Act makes no explicit reference to environmental protection, conservation or natural resource management, it does provide for appeals against authorising tourist projects deemed to negatively affect Zambian tourism – which is generally based on natural resources.
Archaeological, Historical and Cultural	National Heritage Conservation Commission – MTENR	National Heritage and Conservation Act, 1989	To provide for the conservation of ancient, cultural and natural heritage, relics and other objects of aesthetic, historical, pre-historical, archaeological or scientific interest.
Zambezi River	The Zambezi River Authority	Zambezi River Authority Act, No. 17 of 1987	The Act provides for the interstate agreement between Zambia and Zimbabwe relating to the utilisation of the Zambezi River (Kariba Dam).
Other	Various Government Departments	International and Regional Conventions and Protocols	To give direction to local resource management

APPENDIX 15-1

LIST OF PROJECTS REQUIRING A PROJECT BRIEF

As prescribed in section 3(2) of the EIA Regulations, a developer must compile a **project brief** if the project is listed in the First Schedule.

FIRST SCHEDULE

Projects

- a. Urban area rehabilitation
- b. Water transport
- c. Flood control schemes
- d. Exploration for and production of hydrocarbons including refining and transport
- e. Timber harvesting and processing in forestry (*sic*)
- f. Land consolidation schemes
- g. Mining and mineral processing, reduction of ores, minerals, cement and lime kilns
- h. Smelting and refining of ores and minerals
- i. Foundries
- j. Brick and earthen manufacture (*sic*)
- k. Glass works
- l. Brewing and malting plants
- m. Plants for manufacture of coal briquettes
- n. Pumped storage schemes
- o. Bulk grain processing plants
- p. Hydropower schemes and electrification
- q. Chemical processing and manufacture.

Others

- a. Resettlement schemes
- b. Storage of hydrocarbons
- c. Hospitals, clinics and health centres
- d. Cemetery designation
- e. Touring and recreational development in national parks or similar reserves
- f. Projects located in or near environmentally sensitive areas such as:
 - i. Indigenous forests;
 - ii. Wetlands;
 - iii. Zones of high biological diversity;
 - iv. Areas supporting populations of rare and endangered species;

- v. Zones prone to erosion or desertification;
- vi. Areas of historical and archaeological interest;
- vii. Areas of cultural or religious significance;
- viii. Areas used extensively for recreation and aesthetic reasons;
- ix. Areas prone to flooding and natural hazards;
- x. Water catchments containing major sources for public, industrial or agricultural uses; and
- xi. Areas of human settlements (particularly those with schools and hospitals).

APPENDIX 15-2

LIST OF PROJECTS REQUIRING AN ENVIRONMENTAL IMPACT ASSESSMENT

In terms of section 7(2) of the EIA Regulations, 1997, a developer is required to compile an **environmental impact statement** if the development is listed in the Second Schedule.

SECOND SCHEDULE

1 Urban Development

- a. Designing of new townships which are more than 5ha or more in size, or sites covering 700 dwellings and above;
- b. Establishment of industrial estates;
- c. Establishment or expansion of recreational areas such as golf courses, which would attract 200 or more vehicles;
- d. Shopping centres and complexes with 10,000m² and above, floor area.

2 Transportation

- a. All major roads outside urban areas, the construction of new roads and major improvements over 10km in length, or over 1km in length if the road passes through a National Park or Game Management Area;
- b. Railway lines 10km away from built up areas;
- c. Airports and airfields whose runways are more than 1,800m or more;
- d. Pipelines: for water, diameter 0.5m, and above and with a length of 10km outside built up areas; for oil, 15km or more in length of which 5km or more of their length will be situated in a Protected Area, a seriously polluted or a water abstraction area (*sic*);
- e. Establishment or expansion of harbours or pontoon areas.

3 Dams, Rivers and Water Resources

- a. Dams and barrages covering a total of 25ha or more;
- b. Exploration for, and use of, groundwater resources including the production of geothermal energy; water to be extracted to be more than 2 million cumecs (m³/s);
- c. Water supply – reservoir surface area of 50m² or more.

4 Mining: Including Quarrying and Open cast Extraction

- a. Copper mining, coal site (*sic*);
- b. Limestone, sand, dolomite, phosphate and clay extractions of 2ha or more;
- c. Precious metals (silver, zinc, cobalt, nickel);

- d. Industrial metals;
- e. Gemstones;
- f. Radioactive materials.

5 Forestry Related Activities

- a. Clearance of forestry in sensitive areas such as watershed areas or for industrial use of 50ha or more;
- b. Reforestation and afforestation;
- c. Wood processing plants of 1,000 tonnes or more.

6 Agriculture

- a. Land clearance for large scale agriculture;
- b. Introduction and use of agrochemicals new to Zambia;
- c. Introduction of new crops and animals especially exotic ones new to Zambia;
- d. Irrigation schemes covering an area of 50ha or more;
- e. Fish farms of which production is 100 tonnes or more per year;
- f. Aerial and ground spraying – industrial scale.

7 Processing and Manufacturing Industry

- a. Cement works and lime processing – 1,000 tonnes or more a year;
- b. Fertiliser manufacturing or processing – 1,000 tonnes or more per year;
- c. Tanning and dressing of hides and skins – 1,000 skins per week
- d. Abattoirs and meat processing plants – 20,000 carcasses and above per month;
- e. Fish processing plants – more than 100 tonnes a year;
- f. Pulp and paper mills – daily output of 50 air dried tonnes and above per day;
- g. Food processing plants – 400 tonnes or more output a year.

8 Electrical Infrastructure

- a. Electricity generation stations;
- b. Electrical transmission lines – 220kV and more than 1km in length;
- c. Surface roads for electrical and transmission lines for more than 1km long.

9 Waste Disposal

- a. Sites for solid disposal: construction of permanent disposal sites with 1,000 tonnes and above a day;
- b. Sites for hazardous disposal of 100 tonnes or more a year;
- c. Sewage disposal works – with a capacity of 15,000 litres or more a day.

10 Nature Conservation Areas

- a. Creation of national parks, game management areas and buffer zones;

- b. Commercial exploitation of natural fauna and flora;
- c. Introduction of alien species of flora and fauna to local ecosystems.

APPENDIX 15-3

ISSUES TO BE CONSIDERED WHEN PREPARING TERMS OF REFERENCE

The following impacts and issues may, among others, be considered for inclusion, as appropriate, in the preparation of the terms of reference.

1. Ecological considerations, including

(a) Biological diversity

- (i) Effect on number, diversity, breeding sites, etc. of flora and fauna;
- (ii) Breeding populations of fish and game; and
- (iii) Effects on the gene pools of domesticated and wild sustainable yield.

(b) Sustainable use including:

- (i) Effects of soil fertility;
- (ii) Nutrient cycles;
- (iii) Aquifer recharge, water run-off rates, etc;
- (iv) Aerial extent of habitats; and
- (v) Bio-geographical processes.

2. Social, economic and cultural considerations including:

- (i) Effects on generation or reduction of employment in the area;
- (ii) Social cohesion or disruption (resettlement);
- (iii) Immigration (including induced development when people are attracted to a development site because of possible enhanced economic opportunities);
- (iv) Communication - roads opened up, closed, re-routed; and
- (v) Local economic impacts.

3. Landscape

- (i) Views opened up or closed.
- (ii) Visual impacts (features, removal of vegetation, etc.).
- (iii) Compatibility with surrounding areas.
- (iv) Amenity opened up or closed e.g. recreation facilities.

4. Land Use

- (i) Effects on land uses and land potential in the project area and in the surroundings areas.
- (ii) Possibility of multiple use.

5. Water

- (i) Effects of surface water quality and quantity.
- (ii) Effects on underground water quality and quantity.
- (iii) Effects on the flow regime the water course.

6. Air Quality

- (i) Effects on the quality of the ambient air of the area.
- (ii) Type and amount of possible emissions (pollutants).

ACRONYMS

BOD	Biological Oxygen Demand
CBO	Community Based Organisation
COD	Chemical Oxygen Demand
ECZ	Environmental Council of Zambia (The Council)
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan (or programme)
EPPCA	Environmental Pollution Prevention and Control Act
GMA	Game Management Area
GRZ	Government of the Republic of Zambia
I&APs	Interested and Affected Parties
mg	milligrams
MTENR	Ministry of Tourism, Environment and Natural Resources
NGO	Non Governmental Organisation
Nm³	Normal cubic metre of air
SAIEA	Southern African Institute for Environmental Assessment
SEA	Strategic Environmental Assessment
ToR	Terms of Reference
WHO	World Health Organisation

USEFUL CONTACTS

Department	Ministry	Telephone	Fax	Website
Environmental Council of Zambia	Ministry of Tourism, Environment and Resources	+260-1-254130	+260-1-254164	www.necz.org.zm