



Zambia National Environment Situational Analysis Report



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Foreword

This report is a product of the United Nations Development Programme Support to Environment and Natural Resources Management Programme in the Ministry of Tourism, Environment and Natural Resources. The support targets the enhancement of managerial capacity for environmental protection and sustainable management of natural resources as well as for coordination of international environmental conventions. The support is four pronged namely, (i) environmental policy development; (ii) domestication of international conventions on environmental protection and natural resources management; (iii) strengthening of the existing institutional mechanisms for enforcement of environmental standards and the sustainable management of natural resources in the Ministry of Tourism, Environment and Natural resources (MTENR), The Zambia Wildlife Authority (ZAWA) and the Environmental Council of Zambia (ECZ) and (iv) development of gender mainstreaming tools for environment and natural resources sector. The Policy Development Secretariat, established in February 2004, spearheading the development of the Environment Policy for Zambia under the overall co-ordination of the MTENR.

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The views and interpretations expressed in this report belong to the authors and co-author and neither necessarily reflect those of the Ministry of Tourism, Environment and Natural Resources nor the United Nations Development Programme.

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Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ASIP	Agricultural Sector Investment Programme
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resources Management
CITES	Convention on International Trade in Endangered Species of wild fauna and flora
CO ₂	Carbon Dioxide
CRB	Community Resource Board
DANIDA	Danish International Development Agency
DPIC	Decentralization Policy Implementation Committee
ECZ	Environmental Council of Zambia
EIA	Environmental Impact Assessment
EPPCA	Environmental Protection and Pollution Control Act of 1990
ESP	Environmental Support Programme
GDP	Gross Domestic Product
GMA	Game Management Areas
GMO	Genetically Modified Organism
HIPC	Highly Indebted Poor Countries
HIV	Human Immune Virus
ICT	Information and Communication Technology
JFM	Joint Forest Management
MDG	Millennium Development Goal
MMR	Maternal Mortality Rate
MTENR	Ministry of Tourism, Environment and Natural Resources
MW	Mega Watts
NAP	National Action Programme combating desertification
NBSAP	National Biodiversity Strategic Action Plan
NCS	National Conservation Strategy
NEAP	National Environmental Action Plan
NEMA	National Environmental Management Authority
NGO	Non-Governmental Organisation
NHCC	National Heritage Conservation Commission
NPE	National Policy on Environment
NRCF	Natural Resources Consultative Forum
NRM	Natural Resources Management
NRSE	New and Renewable Sources of Energy
PPP	Public-Private Partnerships

PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Paper
STI	Sexually Transmitted Infections
TB	Tuberculosis
UNCCD	United Nations Convention to Combat Desertification and mitigating serious effects of drought
VRMC	Village Resource Management Committee
WRAP	Water Resources Action Programme
ZAWA	Zambia Wildlife Authority
ZESCO	Zambia Electricity Supply Corporation
ZFAP	Zambia Forestry Action Plan

Summary

The Zambia national situational analysis on environment was carried out to facilitate iteration on an overarching environmental policy to guide the implementation of Zambia's environment and natural resources agenda.

The first move to develop a National Policy on Environment for Zambia was done in 1985 through the National Conservation Strategy (NCS). The NCS was updated by a National Environmental Action Plan (NEAP) in 1994. The NEAP was then piloted through the Environmental Support Programme (ESP), which was aimed at supporting public, private and community based approaches to environmental and natural resources management.

The national situational analysis was characterised by district and provincial consultations, focussed group and individual discussions with stakeholders, and an extensive review of documents, including sector policies, environmental policy formulation working papers, environmental legislation, and programme documents.

The results of the analysis confirm a systemic failure of environmental and natural resource management with symptoms of verbal non-tangible political will, conflicting policies, incomplete and outdated legislation, inadequate finance, well divided institutions, inadequate capacity, inadequate resource management, poor information flow, inadequate planning, implementation failure, insufficient awareness and education, and inadequate private sector participation. The evidence is manifested by widespread desertification, depleted fisheries and wildlife resources, deterioration of heritage, polluted water and inadequate sanitation and degraded lands.

The Zambian Government has been implementing several sector programmes that enshrine cross-cutting issues environment, gender and HIV/AIDS in accordance with the Poverty Reduction Strategy Paper underpinned by both macro-economic and governance issues. Yet the poverty reduction programmes have not adequately addressed the issues at hand. Examples of some of unresolved issues include:

- Adverse impacts of the Land Act on the erosion of power of traditional leaders over their subjects
- Inadequate policy provisions compelling mining companies to prepare social mitigation and mine decommission plans
- Inadequate participation of local communities in tourism and management of national heritage resources
- Inadequate provisions in the food and nutrition policy to address the protein-hunger identified as the major driver for over-fishing and wildlife depletion
- Silence of the agriculture and energy policies on the management of water resources despite their to poor who derive livelihoods from them
- Failure to acknowledge the linkages in the poverty spirals in the energy policy
- Disharmony between the agriculture and forestry policies
- Inadequate provisions for environment, gender, youth and HIV/AIDS issues in the current policies
- Inadequate policy monitoring, sectoral coordination, and environmental assessments

Decentralisation may facilitate better environmental management at the local level, if it gives greater power to those whose livelihoods are dependent upon the sustainable management of renewable natural resources.

The National Policy on Environment should focus on devising strategies that, among others address these issues in a coherent manner.

1 INTRODUCTION

1.1 Background to the Policy Formulation Process

Zambia's first move to develop a National Policy on Environment was done through the National Conservation Strategy (NCS) of 1985. The two main outputs from the NCS were a legislative review and a comprehensive environmental education programme. The legislative review resulted in the Natural Resources Act and drafting of the Environmental Protection and Pollution Control (EPPCA) Act. The latter established the Environmental Council of Zambia to become a focal point for environmental affairs and to implement the EPPCA.

In 1994 the NCS was updated by a National Environmental Action Plan (NEAP).

The NEAP had three major outputs:

- an overview of environmental problems, and preliminary identification of the five issues with the greatest social costs to Zambia. These were: water pollution and inadequate sanitation; soil degradation; air pollution in the Copperbelt towns; wildlife depletion (fish and game), and deforestation,
- an overview of existing legislation and institutions. The overview highlighted the weaknesses in existing legislation and institutions and provided strategic options for improvement of environmental quality, and
- an update of policies and actions that formed the basis for future development of the Environmental Support Programme (ESP), which was aimed at supporting public, private and community based approaches to environmental and natural resources management.

Over the past ten years, no solutions have been found to the institutional and legislative weaknesses identified by the NEAP. Rather, the situation has become more complex as new policies, laws and institutions have appeared and Zambia has committed itself to the Poverty Reduction Programme (PRSP).

The process of developing an overarching environmental policy framework to reverse the spiral of increasing poverty and environmental degradation was launched in August 2003. Following broad-based consultation with key government departments, civil society organizations, consultants and traditional leaders, it was agreed that the objectives of the policy would be:

1. to protect the environment and natural resources;
2. to promote the development of sustainable community livelihoods;
3. to build individual and institutional capacity to sustain the environment;
4. to regulate and enforce environmental laws, and
5. to promote the development of sustainable industrial and commercial processes.

1.2 Poverty Reduction Strategy Paper (PRSP) and the Millennium Development Goals (MDGs)

1.2.1 The Poverty Reduction Strategy

The Poverty Reduction Strategy (PRS) has been developed as part of the Heavily Indebted Poor Countries (HIPC) Debt Relief process. The strategy is to reduce poverty by reviving Zambia's economy. As far as possible this growth should be broad-based, thereby promoting income-generation, linkages and equity. Enhanced agricultural productivity is given the highest priority as, on several grounds, it combines the virtues of growth and equity. The strategy also includes programmes for Industry, Tourism, Mining, Education, Health, Water and Sanitation, Energy,

Transport, Communications and Roads and further recognises the importance of Cross-cutting issues including Environment, Gender and HIV/AIDS.

1.2.2 The Millennium Development Goals

In September 2000, Zambia was among 190 other countries that signed the Millennium Declaration at the United Nations Millennium Summit. Eight development goals, underpinned by 18 targets and 48 indicators, were formulated for achievement by the year 2015. The eight goals are:

Goals and targets

Goal 1: Eradicate extreme poverty and hunger

- Halve the proportion of people living on less than a dollar a day and those who suffer from hunger

Goal 2: Achieve universal primary education

- Ensure that all boys and girls complete primary school

Goal 3: Promote gender equality and empower women

- Eliminate gender disparities in primary and secondary education preferably by 2005, and at all levels by 2015

Goal 4: Reduce child mortality

- Reduce by two thirds the mortality rate among children under five

Goal 5: Improve maternal mortality

- Reduce by three-quarters the ratio of women dying in childbirth

Goal 6: Combat HIV/AIDS, malaria and other diseases

- Halt and begin to reverse the spread of HIV/AIDS and the incidence of malaria and other major diseases

Goal 7: Ensure environmental sustainability

- Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources
- By 2015, reduce by half the proportion of people without access to safe drinking water,
- By 2020, achieve significant improvement in the lives of at least 100 million slum dwellers

Goal 8: Develop a global partnership for development

- Develop further an open trading and financial system that includes a commitment to good governance, development and poverty reduction nationally and internationally,
 - Address the least developed countries' special needs and special needs of landlocked and small island developing states,
 - Deal comprehensively with developing countries' debt problems,
 - Develop decent and productive work for youth
 - In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries
 - In cooperation with the private sector, make available the benefits of new technologies-especially information and communication technologies
-

Eight core indicators of environmental sustainability (Goal 7) were identified (Table 1.1). Four relate to access to water and sanitation, two to gaseous emissions of concern to the Montreal and Kyoto protocols, while one is a general proxy for economic development. Only one indicator (% of forested land) relates to the state

of natural capital assets. The suitability of these indicators for monitoring progress towards environmental sustainability in Zambia should therefore be considered.

Table 1.1 Zambia's Millennium Indicators for Environmental Sustainability

Millennium Indicator	Year				
	2000	2001	2002	2003	2004
Forested land area as % of land area	42				
Energy supply (apparent consumption; kg oil equivalent) per \$1 (PPP) GDP	1				
Ozone-depleting CFCs consumption in ODP metric tonnes	23				
Carbon dioxide emissions (CO ₂), metric tonnes of CO ₂	0.2				
Water, % of population with access to improved drinking water sources, urban	88				
Water, % of population with access to improved drinking water sources, rural	48				
Sanitation, % of population with access to improved sanitation, urban	99				
Sanitation, % of population with access to improved sanitation, rural	64				

2 ENVIRONMENTAL AND SOCIO-ECONOMIC CONDITIONS

2.1 Physical Location

Zambia covers a total land area of approximately 752,000 km². Most of the country lies on the Central African Plateau with an average elevation of about 1,200 m. This elevation falls away to about 350 m in the Zambezi valley bordering Mozambique and rises to 2,164 m on the Nyika plateau, bordering Malawi.

2.2 Climate, Ecosystems and Biodiversity

The climate is sub-tropical, characterised by three distinct seasons: a cool and dry season from May – August, a hot and dry season from August to November, and a rain and hot season from November to April.

Three agro-ecological regions are recognised. Region I covers the plateau sub-region in Southwest Zambia and the Rift Valley region in South Luangwa and Zambezi valleys. The region receives less than 800 mm annual rainfall and covers about 15 million hectares, equivalent to 20% of the country.

Region II consists of the sand veldt plateau of Lusaka, Central, Eastern and Southern provinces and the Kalahari Sand plateau of Western Province. The region receives 800-1,000 mm annual rainfall and covers about 27 million hectares, or 36% of the country.

Region III receives over 1,000 mm annual rainfall and covers about 33 million hectares, equivalent to 44% of the country. This region mostly covers the Copperbelt, Luapula, Northern and North-western provinces.

Floristically, Zambia lies within the Zambezian regional centre of endemism, between the rainforests to the Northwest and the semi-desert conditions to the Southwest. The vegetation is largely savanna, which comprises a mix of woodland and grassland vegetation types. The various ecosystems are listed in Table 2.1.

Apart from mopane woodland characterising Region I, and most wetlands and miombo woodland occurring in Regions II and III, there is little convergence between the location of the agro-ecological regions and other major ecosystems. Together, woodland and wetland vegetation cover about 92% of the country. Although man-made ecosystems account for only 3% of the total area, natural ecosystems have been widely degraded by human influence, and especially by fire, shifting cultivation, the harvesting of wood fuel, and regulation of rivers for hydropower generation.

A large number of the plant and animal species in Zambia are found nowhere else. At least 615 species are endemic of which 174 are considered rare, and a further 31 species vulnerable or endangered.

Table 2.1 Extent of Ecosystems in Zambia

Biome	Ecosystem	Extent	
		km ²	%
Forest	Dry evergreen	15,835	2.10
	Deciduous	6,735	0.90
	Thicket	1,900	0.25
	Montane	40	0.01
	Sub-total	24,510	3.30
Woodland	Chipya	15,560	2.10
	Miombo	294,480	39.10
	Kalahari sand	84,260	11.20
	Mopane	37,010	4.90
	Munga	30,595	4.10
	Termitaria	24,260	3.20
	Sub-total	486,165	64.60
Wetland	Dambo grassland	75,760	10.10
	Floodplain/swamp	129,075	17.20
	Swamp forest	1,530	0.20
	Riparian forest	810	0.10
	Sub-total	207,175	27.50
Aquatic	Lakes and rivers	10,500	1.40
	Sub-total	10,500	1.40
Anthropogenic	Farmland, plantation, built-up areas	24,210	3.20
	Sub-total	24,210	3.20
Total		752,578	100.00

2.3 Population, Human Settlements and Key Socio-economic Indicators

Key socio-economic indicators are listed in Table 2.2. The population of 9.9 million is highly urbanised (42% in 1990), with most people living along the line of rail through the Copperbelt, Central, Lusaka and Southern provinces. Lusaka and Copperbelt provinces are the most densely settled and North-western, Western and Northern the least.

2.4 Agriculture

About 12% of Zambia is suitable for arable use. However, only about 14% of this is presently cultivated. The country has a good climate, labour, and plenty of water resources and considerable potential for agricultural development. The rainfall pattern defines the country's three agro-ecological regions. Each region has defined characteristics and is suited for the production of a diversity of crops, livestock, and fish enterprises. Moreover, groundwater resources are abundant and irrigable land is estimated to cover 423,000 ha, of which only about 9% is currently irrigated.

There are four main categories of farmers: small-scale, emergent, medium-, and large-scale. Their characteristics are shown in Table 2.3.

Table 2.2 Key Socio-economic Indicators

Indicator	Value	Year
Population size (million)	9.9	2000
Annual population growth rate (%)	2.4	2000
Life expectancy at birth (years)	50	2000
Real GDP per capita (US\$)	354	2002
Domestic debt as % of GDP	26	2002
External debt as % of GDP	190	2002
Debt service as % of exports of goods and services	13.7	2002
Human Development Index (value)	0.38	2003
Human Development Index (rank)	163	2003
Population below national poverty line (%)	73	1998
Prevalence of HIV/AIDS among adults between 15-49 years (%)	16	2002
Percentage of underweight children under 5 years (%)	28	2002
Infant mortality (per 1,000 live births)	95	2002
Under five mortality (per 1,000 live births)	168	2002
Maternal mortality (per 1000,000 live births)	729	2002

Source: Millennium Development Goals Progress Report 2003

Table 2.3 Characteristics of Zambian agriculture

Characteristics	Small Scale	Emergent Scale	Medium Scale	Large Scale
Population (1999)	459,000	119,200	25,230	>40
Crops grown	Food crops	Food/cash crops	Food/cash crops	Cash crops
Production focus	Subsistence	Subsistence/commercial	Commercial/subsistence	Commercial

Generally, agricultural production and productivity is very low in Zambia because most farmers have inadequate access to markets and support services, and incur high production costs. The real growth rate in the sector has fluctuated significantly, mainly due to its dependence on seasonal rainfall, reduced investments and the failure to position itself strategically with respect to its comparative advantage. The sector's contribution to GDP averaged 18% during the 1990s.

2.5 Fisheries

Major fisheries are found at Lake Kariba, Kafue Flats, Bangweulu Swamp, Lake Mweru Wantipa, Mweru-Luapula, Lake Tanganyika and the Barotse floodplain of the upper Zambezi River. Less important ones are Lake Itezhi-tezhi, Lukanga Swamps, Lake Lusiwash and the lower Zambezi River.

Generally, fisheries are believed to be overfished, but few, if any, stock assessments have been carried out in recent years and reported catch statistics are considered unreliable.

Some aquaculture is practiced on the Kafue River and on Lake Kariba.

2.6 Industry

The manufacturing sector grew rapidly following Independence, helped by high copper prices and the country's isolation following the unilateral declaration of independence in Rhodesia. With a decline in the mining industry, reopening of the border with Zimbabwe, and liberalisation of the economy leading to freer imports, the sector was exposed to competition. Many firms found imports threatening their domestic market and were unable to export because of high input costs and low output quality. Out of 55,700 jobs in the formal sector in 1995, some 7,900 had been lost by 2000, due to firm closures and reduced capacity utilisation.

The sub-sectors of food, beverages, and tobacco account for about 60% of total output in manufacturing, while textile and leather products, wood and wood products and chemicals, rubber and plastics are also important.

2.7 Tourism, Wildlife Resources and Heritage Sites

Tourism development is largely based on the attractions of Victoria Falls World Heritage Site and locally abundant wildlife. The country has 19 National Parks and 34 Game Management Areas (GMAs), covering 33 percent of the country, but only 5% of this has been developed for tourism. Infrastructure in the remaining 95% is poor, and wildlife populations are depleted.

Nevertheless, the potential for the sector remains high. The National Heritage Conservation Commission (NHCC) has recorded 3,867 heritage sites for purposes of tourism, educational, research or purely conservation purposes. These include natural heritage sites *i.e.* geological (such as disused mines, hot springs and fossil sites), geo-morphological, (such as waterfalls, gorges, rivers, caves, and karstic features) and biological (such as rare floral and faunal species) heritage sites. There also cultural heritage sites such as archaeological (e.g. Stone/Iron Age and ancient rock art sites), architectural (such as buildings with unique designs/of historical significance), structural/engineering (such as uniquely designed or historic structures and technologies), anthropological (royal burial grounds or sites with ethnographic material) and historical sites (which include any of the above categories which is associated with a significant event. Most of the potential of the sites for tourism development remain unexploited.

The summarized statistics for heritage sites in Zambia are as follows:

2, 337	Cultural heritage sites
353	Natural heritage sites
75	Are declared National Monuments sites
1	World Heritage Site

The country boasts of 35% of the water resources in Southern Africa offering further opportunities for tourism development.

The tourism sector has experienced strong growth in recent years with foreign exchange earnings and employment in the formal sector doubling over the 6-year period from 1995 to 2000.

2.8 Mining

Zambia is famous for copper and cobalt mining, but gold, diamonds, zinc, gemstones, coal, and a variety of agro and industrial minerals are also found. Large-scale mining is active for copper, cobalt and coal, while small-scale mining for a variety of gemstones that include emeralds, amethyst, aquamarine, tourmaline, garnets, and citrine occurs. Emeralds are by far the most important. This rich variety of mineral resources offers great potential for economic development. Many potentially important mineral deposits are located in undeveloped and remote parts of the country.

The mining sector has been a prime mover of economic development in Zambia for over 70 years, with exports of mineral products contributing about 70% of total foreign exchange earnings. Over the last 20 years however, copper production has declined largely because of declining copper ores, little re-investment into new and existing mines, and unsupportive management practices. The legacy of derelict land and polluted rivers is significant. Lately, mining has been generating between 6-9% of GDP and contributing about 40,000 jobs to the formal sector total of about 470,000.

2.9 Education

Education is characterised by the following: low enrolments, low progression, and high dropout rates; poor performance; poor attendance because children are engaged in income-generating activities to supplement family income, tending to sick family members, and long distances to school; poor learning environments and lack of opportunities for appropriate skills training; malnourished learners who are unable to achieve their full learning potential; de-motivated and ill-qualified teachers, especially in rural areas; high illiteracy levels; ill health among teachers, pupils, and others in the education system; lack of motivation for parents to send their children to school; and wide gender gaps because of choices parents have to make on who goes to school.

2.10 Health

Few, if any, of the general health indicators have improved in Zambia over the last 10 years and some have even deteriorated. For instance, life expectancy at birth has dropped to 37 years; the infant mortality rate has increased to 109 per 1,000; and the under-five mortality rate has gone up to 197 per 1,000. While the maternal mortality rate (MMR) is officially recorded as 649 per 100,000 live births, figures even higher than 1,000 are being reported in some surveys. Nationally, HIV sero-prevalence seems to have stabilised: 29% in urban and 14% in rural settings, with a national average of 20% in the 15-45 year old age group. Further, there are some indications that the HIV infection rate among young adults is decreasing. With an official annual population growth rate of 2.9%, Zambia's population increase is about equal to the average rate for sub-Saharan Africa.

AIDS and AIDS-related diseases have become prominent, with the number of households experiencing chronic illness and death rising. In 1998, 17% of rural and 12% of urban households had experienced an HIV/AIDS-related death. TB-related cases have risen, and other diseases continue to have a negative impact on the

health status, including malaria, diarrhoea, and respiratory tract infections that place a heavy burden on the health sector. Moreover, the country has suffered in recent years from epidemics of cholera and measles. The high maternal mortality rate has been caused by prenatal complications (26%), complicated deliveries (25%), and postnatal causes such as post-partum haemorrhage sepsis (26%). Equally the health situation of children has not improved, with acute respiratory infections and malnutrition remaining serious problems and some 42% of children under-five being classified as stunted.

2.11 Water and Sanitation

The country is endowed with relatively abundant water resources. The annual rainfall averages between 700 mm in the South and 1,400 mm in the North. There is an extensive river network consisting of the Zambezi, Kafue, Luangwa, Chambeshi and Luapula Rivers. In addition, there are several large lakes, many small lakes, and a number of relatively productive aquifers in various parts of the country. Overall, the available water resource far exceeds the consumptive use (including domestic and industrial water supplies, irrigation, and livestock) even in a drought year. However there are significant variations across the country, and a strong seasonality in rainfall, leading to deficits in certain localities. Competition for available water resources is expected to increase with economic development.

Based on constructed water and sanitation facilities, access to safe water supplies in Zambia is estimated at 89% of the population in urban areas and 37% in rural areas. For sanitation, the estimated coverage is 73% for urban areas and 68% for rural areas. Real coverage is much lower and varies considerably from one place to another due to non-functioning facilities (broken down, abandoned, seasonal) and poor usage (especially with respect to sanitation facilities). In peri-urban areas, where 50-70% of the urban population lives, water supply and sanitation services are poor, inadequate, and unreliable: at least 56% of the population do not have access to safe water supply, and as much as 90% do not have access to satisfactory sanitation facilities.

2.12 Energy

Except for petroleum, which is wholly imported, the country is richly endowed with a range of indigenous energy sources, particularly woodlands for wood fuel, hydropower, coal, and new and renewable sources of energy. Wood fuel accounts for about 70%, hydropower 14%, and petroleum 12% of total national energy demand.

There is no recent stock assessment for wood fuel reserves. Proven coal reserves are estimated at 30 million tonnes with several hundred million tonnes of probable reserves. Only one coal mine is in operation, at Maamba, with a design output of one million tonnes per annum. In recent years the contribution of coal to total energy has declined to barely 2% due to production constraints at Maamba. Ninety nine percent of electricity is produced at the hydropower stations of Kafue Gorge (900 MW), Kariba North Bank (600 MW) and Victoria Falls (108MW). Huge untapped potential for hydropower generation also exists in the Northern Province.

Mining accounts for about 68% of the consumption of electricity, with the balance split between domestic (19%), government service (7%), industry and commerce (4%), and agriculture and forestry (2%).

2.13 Transport, Communications and Roads

The main modes of transport in Zambia are road, rail, air and inland waterways.

The rail network covers almost 3,000 km, but its importance has declined along with mining and agriculture. Problems have been compounded by the poor state of the network and attendant inefficient services. Consequently the road sub-sector has taken a larger share of the cargo haulage business, contributing to a rapid deterioration of the road network.

At present over 60% of cargo is hauled by road. The country has a gazetted network of about 37,000 km, of which c. 6,500 km are bituminous, 8,500 km are gravel and 22,000 km earth. A large part of the network was constructed between 1965 and 1975 and over the years has deteriorated as a result of lack of maintenance.

There are 144 airports and aerodromes in the country of which four, Lusaka, Livingstone, Ndola and Mfuwe, have international status.

Water transport is presently not significant although it is critical for movement in some parts of Western, Northern, and Luapula Provinces. The country has abundant navigable lakes and rivers but development of the sub-sector has been inhibited by a lack of technical expertise.

3 IDENTIFICATION AND ANALYSIS OF KEY ENVIRONMENTAL ISSUES

3.1 Issues Identified in the District and Provincial Consultations

The district and provincial situational analysis reports were reviewed to make a comprehensive list of environmental issues. It was clear that some issues were of local concern e.g. air pollution on the Copperbelt, while others were more general e.g. deforestation. However the socio-economic and environmental significance of specific issues – their magnitude, scale and duration – could not be assessed from the information provided in the reports.

The issues identified from the district and provincial reports, and others added by the consultant, are tabulated below. They have been sub-divided into those related to the enabling framework for environmental management – the policies, laws, institutions, finance and capacity; those related to sectoral activities, and those of a cross-sectoral nature.

Sectoral issues have been further classified using the Pressure-State-Response (PSR) feedback model of environmental management in a preliminary attempt to analyse causality. Because the PSR model is a loop, any item can thus be regarded as either a 'cause' or an 'issue'. The results are set out below.

3.1.1 Issues of the Enabling Environment

Issues relating to the enabling environment are summarised in Table 3.1. They are related to governance, policy, legislation and regulation, institutional arrangements, finance and planning and implementation capacity, public education and awareness, private sector and community participation, and human resource development, research and technology transfer.

More detailed analysis of the policies, laws and institutional arrangements for environmental management is carried in Section 5.

Table 3.1 Summary of Environmental Issues in the Enabling Environment

THEME	ISSUE
Governance	Lack of understanding of the root causes and importance of environmental degradation in a national context
	Central government lukewarm to decentralisation policy
	Political interference and lack of transparency
Policy	See Section 5
Legislation and Regulation	Need to incorporate international conventions into national law – see Section 5
	Need to harmonise national laws on environment and natural resource management – see Section 5
	Land Act neither understood nor accessible to the rural poor.
	Roles of the chiefs and district councils in land allocation and resource use not harmonized
	Legislation needed to allow district councils to develop environmental and natural resource management services
	No holistic enabling framework for implementation of community-based approaches to natural resources management
	Local communities unable to enter direct business relationships with the private sector to gain management rights and improved benefits
	Lack of fiscal incentives/taxes to influence environmental management
	Licence fees set by central government for resource use are often above

THEME	ISSUE
	'market rate' leading to illicit activities
Institutions	Need a stronger voice for environmental policy implementation than ECZ – see Section 5
	Collaborative framework between the ECZ and district councils needed.
	Need for Environment Officer at district level
	Need for stronger 'institutional memory', to counter effects of administrative changes and HIV/AIDS
	Need to harness the power and influence of the chiefs at district level.
	Need to harness the energy, ideas and investment potential of the private sector at district level
Finance	Environment and natural resources receive only 0.2% of national budget
	Increased revenue needed at district council level
	Central government mechanisms for financing districts requires elaboration
	Funding delays at provincial level cause implementation delays
	Central government spending does not always match district priorities
	Opportunities for financing through liberalisation and private sector involvement
	Opportunities for cost recovery from the provision of environmental services
Environmental Management Planning and Implementation	Lack of sector indicators to track national progress towards MDGs
	Lack of strategic environmental assessment in national planning
	Lack of 'green accounting' in national planning undervalues natural capital assets
	Need for climate change risk to be built into national planning
	Lack of capacity at district level
	Weak infrastructure constrains management
	Mining and forestry permits issued by central government independent of local chiefs or district councils
	Need for better natural and cultural resource inventory, monitoring and assessment data
	Need for better access to resource management information
	Need to develop stronger planning, technical and management capacity at district level
	Need for early warning and preparedness mechanisms
	Districts rather than central government to drive planning process
	Mechanism for districts to resolve sector conflicts between government departments and NGOs
	Need to involve private sector in planning process and environmental management
	Need for district State of the Environment and Environmental Action Plans
	Need for environmental economics to be used in planning and environmental assessment
	Internalise environmental and social costs into project costs (e.g. hydropower development), through EIA, to prevent local communities and other stakeholders bearing the costs without compensation.
	Need for environmental guidelines for sector development, especially construction projects
	Community Based natural Resources Management (CBNRM) projects need harmonising between sub-sectors
	Better technologies for natural resource production and use required (including use of cultural resources)
	Local byelaws for environmental and NR management needed
	Better enforcement of planning regulations and laws needed
	Cooperation between districts on trans-boundary management issues needed

THEME	ISSUE
Environmental Education and Public Awareness	Need for coordination and greater environmental education and awareness through a national excellency body for environmental education
	Increase awareness and understanding of natural resources policies and laws
Private Sector and Community Participation	Need for districts to involve private sector in planning process and environmental management
	Local communities unable to enter direct business relationships with the private sector to gain management rights and improved benefits
	Need to encourage community participation in heritage management
	CBNRM projects need harmonising between sub-sectors
	Harmonise the roles of the chief and district council in land allocation and resource use
	Resolve human – wildlife conflicts
Human Resource Development, Research and Technology Transfer	Genetically modified organisms
	Increased training in environmental sciences and environmental management
	Increased research and monitoring of environmental resources and issues
	Implementation of the National Information and Communication Technology Policy needed

3.1.2

Cross-sectoral Issues**Table 3.2 Summary of Cross-sectoral Environmental Issues**

THEME	ISSUE
Gender, Youth and Children	Implement the Gender Policy in environmental management
	Involve youth in environmental conservation and natural resources management
Human Settlements and Health	Mosquito bites and malaria
	Poor water supply
	Unsafe water
	Poor sanitation
	Inadequate waste disposal
	Recycling
Air Quality and Climate Change	Industrial emissions
	Vehicle emissions
	Noise from blasting, industry and settlements
	Bush fires
	Need for climate change risks to be built into national planning
Conservation of Biological Diversity	International conventions need to be domesticated
	Monitoring of resources
	Regulation of rivers for hydropower production reduce floodplain and aquatic biodiversity
	Declining fish biodiversity
	Poaching
	Deforestation
	Encroachment on protected forest areas and GMAs
	Water pollution
	Reduced tree species biodiversity
	Invasive plant species
	Exotic fish species
	Lack of community involvement
Conservation of National Heritage	Poor conservation of biological diversity
	Abstraction and river regulation adversely impacts on waterfalls, river channels and riparian environment
	Loss or destruction of heritage artefacts through unplanned development, including farming
	Demolition or insensitive modernisation of old buildings
	Theft and illegal export of heritage objects
	Vandalism of sites
	Encroachment of sites by invasive weeds <i>e.g. Lantana</i>
	Tourism pressure at some sites
	Deterioration due to natural processes and lack of maintenance
	Inadequate to lack of monitoring and assessment
	Inadequate community participation
	Absence of community benefits from national heritage
Land Tenure and Land Use	Implement the Land Act
	Mediocre planning for settlements, industry and other uses
	Inadequate enforcement of existing laws on settlements
	Degradation due to quarrying and construction borrow pits
Trans-boundary and Regional Conservation	Management of Victoria Falls World Heritage Site
	Cooperation between districts on trans-boundary management issues needed
	International conventions need to be domesticated
	Water abstraction from the Zambezi River

3.1.3 Sectoral Issues

a) The Agriculture Sector

i) Crop Production

Pressure	State	Response
Demand for staple food: maize production	Increased soil acidity from use of nitrogenous fertilizers ¹	Failure of policies to make lime affordable/available
Demand for staple food crops, general	Decreasing soil fertility; soil erosion; falling yields; shifting cultivation; forest clearance; malnutrition	Failure of policies to make fertilizer affordable
Tobacco production: fuelwood for curing	Forest degradation and associated impacts	Energy pricing policy encourages use of fuelwood rather than coal; forestry law not enforced.
Horticulture	Agrochemical pollution; reduced water quality; impact on biodiversity	Lack of assessment; lack of enforcement of pollution laws
Irrigation (dams)	Increased seasonality of stream flow; siltation of river bed; loss of fishery	Lack of integrated water resource planning and management
Irrigation (rivers)	Less water for hydropower and municipal water supply	Integrated water resource management study for Kafue river conducted; no public debate.
New land for agriculture	Loss of heritage sites	Lack of policy; monitoring; sectoral coordination; environmental assessment; heritage capacity and understanding

ii) Livestock Production

Pressure	State	Response
Nutritional demand for animal protein	Uncertain; cattle herds depleted by disease spread by uncontrolled stock movements	Weak extension services and law enforcement
Wealth creation and supply of draught power, manure and milk	Uncertain; cattle herds depleted by disease spread by uncontrolled stock movements	Weak extension services
Deteriorating rangeland	Invasive plant species; uncontrolled fires; expansion of cropland in fertile areas	Lack of assessment

¹ Ammonium Nitrate and Urea are Major nitrogenous fertilisers used in Zambia

b) The Forestry Sector

Pressure	State	Response
Demand for charcoal and wood fuel	Forest clearance and degradation; loss of wildlife; increased erosion; siltation and increased seasonality of stream flow; loss of biodiversity, climate change	Implementation of energy policy favours charcoal and wood fuel consumption; failure to implement forest law to prevent it
Demand for timber and other forest products	Forest degradation; reduced biodiversity	Failure of local assessment and implementation of forest law to prevent over harvesting
Demand for farmland	Forest clearance; loss of wildlife and biodiversity, increased erosion; siltation and increased seasonality of stream flow; climate change	Failure of agricultural policy to intensify production on existing farmland
Land settlement	Forest clearance	Lack of settlement policy and control
Burning regime	Forest change – outcome depends upon perception of resource user	Lack of Joint Forest Management initiatives

c) The Wildlife Sector

Pressure	State	Response
Nutritional demand for animal protein	Hunting for bush meat; wildlife depletion; habitat and biodiversity change due to reduced grazing pressure and increased severity of burning	Lack of policy on food and nutrition (note: policy development a priority under PRSP); limited success of CBNRM implementation; failure of law enforcement; weak tourism industry
Hydropower production: river regulation by dams	Reduced production of floodplain wildlife	Energy policy favours hydropower dam construction; lack of integrated water resource management; weak EIAs
Wood fuel and charcoal production	Deforestation: reduced production of wildlife	Energy policy favours 'least cost' supply; forest law inoperative
Settlement	Deforestation, hunting and reduced production of wildlife	Failure of land use planning and wildlife policies
Wildlife-based tourism	Wildlife populations maintained or enhanced due to law enforcement and benefits to local people	Wildlife and tourism policies and implementation in place

d) The Fisheries Sector

Pressure	State	Response
Nutritional demand for fish protein	Collapse of fishing industry due to over-fishing of open access resource: too many fishermen; use of illegal and unsustainable fishing methods	Lack of policy on food and nutrition (note: policy development a priority under PRSP) No implementation of fishery policy or regulations to control fishing
Land cover change	Reduced production of fish	Lack of policies preventing erosion from

due to deforestation for farming and wood fuel supply	due to siltation of rivers and streams; increased seasonality of flow: reduced fish populations	deforested lands. Agricultural policy favourable to farm dams that prevent floods scouring river channels
Hydropower production	Change in production of fish due to dams: reduction on Kafue ; increase at Kariba	Energy policy favours hydropower dam construction; Agriculture policy favours farm dam construction; Inadequate links and initiatives for integrated water resource management; Inadequate implementation of weak EIA regulations

e) The Water Sector

Pressure	State	Response
River regulation by hydropower dams	Altered flow regimes	Strong policy response – water is an economic good and pricing studies will be undertaken; EIAs supported
River regulation by irrigation dams	Interrupted river flow; increased sedimentation	Strong policy response – water is an economic good and pricing studies will be undertaken; EIAs supported
Municipal, industrial, irrigation, hydropower supply	Water resource scarcity developing on Kafue	Strong policy response – Integrated Kafue River Basin water resource study undertaken
Forest land cover change/runoff	Sedimentation of rivers; change from perennial to seasonal flow; lack of potable water	The water policy is silent on the need for catchment protection
Mine wastewater and sediment discharge	Pollution; change in biodiversity; lack of potable water	Policy supports implementation of Environmental Protection and Pollution Control Act
Municipal and industrial effluent discharge	Pollution of surface and ground waters; lack of potable water	Policy supports implementation of Environmental Protection and Pollution Control Act

f) The Mining Sector

Pressure	State	Response
Need for employment and foreign exchange	Derelict land due to erosion, toxic dumps and redundant facilities	Failure to implement EIAs and the 'polluter pays' principle; Failure to restore derelict land
	Polluted water resources due to wastewater and sediment discharge	Failure to implement EIAs and the 'polluter pays' principle and the EPPCA
	Polluted air due to dust and emissions from refining processes; Noise pollution due to blasting	Failure to implement EIAs, the 'polluter pays' principle and EPPCA
	Loss of heritage sites	Failure to implement EIAs and the 'polluter pays' principle and the EPPCA
	Mining operations lack	Failure to adverse impacts that

	decommissioning/closure plans to take care of impacts after the span of the mine	arose from mining activities
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g) The Energy Sector

Pressure	State	Response
'Least cost' supply	Deforestation for charcoal and wood fuel production and knock-on impacts (see Forest Resource Management)	Energy Policy failure as environmental 'externalities' are not included in energy pricing.
Need for foreign exchange earnings	Development of hydropower for export, causing degradation of wetland goods and services, including fisheries, wildlife, livestock production, water treatment.	Policy failure not to include environmental 'externalities' in energy pricing. Weak EIAs. Policy failure not to invest more in increased access to electricity and alternative low cost supplies.

h) The Industry, Trade and Commerce Sector

Pressure	State	Response
Demand for economic growth and employment to reduce poverty	Soil, water and air pollution; transportation of hazardous waste; noise pollution	Weak implementation of Environmental Protection and Pollution Control Act
Agribusiness	Pollution of land and water resource	Weak implementation of Environmental Protection and Pollution Control Act

i) The Tourism Sector

Pressure	State	Response
To improve economic well-being and enhance quality of life of Zambians	Declining wildlife populations (but improving at some tourist development sites); degrading natural environment; deteriorating historical and cultural sites; poorly planned tourist development (Victoria Falls World Heritage Site).	Inadequate implementation of Tourism policy; Inadequate coordination between agencies; weak infrastructure; Inadequate enforcement of wildlife law; poor strategic and project planning; weak development of local community – private sector partnerships.
To site facilities on river banks	Damage to scenic nature and the riparian flora and fauna; reduced wilderness value	Policy failure; lack of law enforcement

3.1.4 Conclusions

The results of district and provincial consultations confirm a systemic failure of environmental and natural resource management. The symptoms include: a verbal non tangible political commitment; conflicting policies; incomplete and outdated legislation; inadequate finance; weak and divided institutions; lack of capacity; lack of resource assessment, poor information flow, and inadequate planning;

implementation failure; insufficient awareness and education, and inadequate private sector participation.

This failure is evident in the state of Zambia's environment which is characterised by widespread desertification (forest loss, soil degradation, and siltation and increased seasonality of rivers and streams), depleted fisheries and wildlife populations, the deterioration of heritage sites (both cultural and natural) and polluted water and inadequate sanitation. Essentially the issues remain the same as they were ten years ago, at the start of the National Environmental Action Plan.

3.2 Inventory and Impact of the Poverty Reduction Strategy Programmes on Environment and Natural Resources

The Poverty Reduction Strategy Paper (2002-2004) outlines nine sectoral programmes, for Agriculture; Industry; Tourism; Mining; Education; Health; Water and Sanitation; Energy, and Transport, Communications and Roads, and three programmes to deal with the cross-cutting issues of HIV/AIDS, Gender and Environment.

The implementation of the sectoral programmes is underpinned by macro-economic and governance issues. The macro-economic issues include investment promotion; export promotion and level playing field for local industry; public sector management; and stable macro-economic environment. The governance issues include decentralization; prudent resource management; and improved security and justice.

3.2.1 Agriculture

Enhanced agricultural productivity is being given the highest priority under the PRSP. Large-scale agricultural farming, especially with out-grower schemes, will be encouraged, with the emphasis on producing crops for export. This will require retitling large blocks of land for farming under 99-year leases. The suitable agro-ecological zones for some of the proposed export crops are in areas where the bulk of the land is under traditional title.

Although the Land Act came in to force in 1995 very little progress has been made in the market development for land, titling of both customary and State lands, and setting up a land administration system and procedure to meet the demands of such a complex task. The PRS requires a review of the Land Act of 1995. It is important to find out what the real issues are and to start addressing them. Some key objectives in this process include finding more effective measures against the unproductive holding of State land and, for rural areas, discussing incentives with traditional authorities for opening unutilised land for investment.

Implementation of this policy will strengthen land tenure, realise financial value for land, and transform the landscape over large areas. It will also transform the ecology and existing land use of these areas. At present the Land Act has adverse implications for the poor who cannot afford, or do not understand, the process of securing documentary proof of ownership of land. Though unintended, the Act also reduces the power that traditional authorities have over their subjects.

The Environment Policy should consider the need to monitor land titling and for Environmental and Social Impact Assessments of proposals to develop large farms. The Environmental Council of Zambia should also be provided with the capacity to

regulate agrochemical use and to monitor pollution from these chemicals and processing activities.

The PRSP recognises that the initial impact of liberalisation on Zambia's smallholder farmers has been negative, especially in remote areas, due to limited opportunities to access both agricultural inputs and credit. It will therefore promote public-private partnership (PPP) in the farm input supply sector and invest effort in understanding how best to bring in the private sector and community-based organisations to provide the needed financial services. This should help intensify farm production and reduce the need for shifting cultivation and rate of forest clearance.

The Poverty Reduction Strategy is silent on the importance of wetland fisheries to the poor, and the need for better management of wetland fisheries.

3.2.2 Tourism

For tourism, the plan includes the rehabilitation of roads in tourism areas, including heritage sites, rehabilitation of museums, tourist marketing, and human resource development. More intense work will be carried out in five priority development zones – Livingstone and Victoria Falls, Kafue National Park and surrounding GMAs, the lower Zambezi (Siavonga through to Feira), Lusaka and Luangwa. The government's role is thus to facilitate private sector involvement and promote public-private partnerships in the industry. Provided the provisions of the Tourism Policy are implemented development will be sensitive to good environmental management.

3.2.3 Mining

The Mining Policy aims to encourage private investment in exploration and development of mining and downstream processing. The PRS will favour the development of small-scale mining in particular through the Sysmin (Mining Diversification) Programme. Sysmin will identify small-scale mining opportunities and support the activities of small-scale miners and prospectors.

Environmental concerns over large-scale mining can be addressed through existing policies and regulations, and especially through EIAs, environmental audits and the Environmental Protection Fund. However, the effects of small-scale mining are harder to deal with. Mining permits are issued in Lusaka with little or no consultation with the district council or local chief and no effective check on the adverse environmental and social consequences that may arise. The Environmental Policy will need to develop strategies for incorporating 'the polluter pays' principle into small-scale mining activities and for a local conflict resolution process. The policy will also need to address issues of social environment and mine decommissioning plans. The mine decommissioning plans would take care of prolonged and after impacts of mining.

3.2.4 Industry

The strategy focuses on choosing industries that have the best chances of export success after considering comparative advantage and existing trade agreements. These are likely to be the processors of primary goods, such as agricultural and forest products. It is planned that some of the agricultural goods suggested for production should have value added before being exported.

The last stock assessment of Zambia's forests was conducted over 30 years ago and widespread degradation is known to have occurred. The potential for a significant industry based on forest products is uncertain. The Environment Policy should

therefore emphasise the need for regular stock assessments of renewable natural resources to be made to support planning and investment in industrial development.

3.2.5 Education

The PRS will support three existing and three new education programmes covering basic primary, national literacy, skills training, equity, high schools and tertiary education.

While there are no specifically environmental components to this support, the Environment Policy should examine opportunities and strategies for incorporating environmental education into these programmes. This would require setting up an environmental education excellence at national level.

3.2.6 Health

The PRS supports funding of the basic health care package, especially those elements that are pro-poor. This package covers malaria, HIV/AIDS, TB, and STI, integrated reproductive health, child health, epidemics, hygiene, sanitation, and safe water.

The prevalence of malaria, TB, reproductive and child health, some epidemics, sanitation and safe water are all closely linked to environmental policy and management. The PRS also proposes to finalise and implement a national food and nutrition policy.

Much of the basic health package is related to dealing with the health problems associated with a poor environment and the PRS thus supports the Environment Policy. The National Food and Nutrition Policy should also have significant environmental and natural resource implications as protein-hunger is the main driver of overfishing and wildlife depletion.

3.2.7 Water and Sanitation

The PRSP will help develop inter-sectoral collaboration for the implementation of water sector activities, notably the creation of an effective institutional and legal framework, stronger human resource capacity, models for planning and integrated water resources management, and improved data and information systems. There will also be a pilot project in the Kafue river basin, aimed at facilitating the development of a model of catchment-based management of water resources for use in other river basins in Zambia. Multipurpose dam construction and rehabilitation will be supported in close collaboration with the Ministry of Agriculture and Cooperatives.

The PRS will thus support evidence-based planning and improved management systems for water resources in Zambia, consistent with the Environment Policy. However in recognising water as – exclusively - an economic good, the Water Policy is at variance, and potential conflict with the Biodiversity Policy, which places ecological, economic, social, cultural and intrinsic values on biodiversity. The Environment Policy will need to recognise the need to harmonise policy implementation through support to a programme that develops the field of environmental economics in Zambia.

3.2.8 Energy

Poverty Reduction Programme strategies for the energy sector include enhancing existing capacity in the delivery infrastructure to ensure access by more people, creating new energy delivery infrastructure through, for example, building new power

stations and transmission lines, and targeted interventions at achieving, amongst other things, increased access and promotion of alternative technology.

One activity aims to reduce the consumption of wood fuel by 10% through the more efficient production and use of charcoal, and substitution of charcoal in urban households with millennium gel-fuel, a bio-fuel based on molasses. Another programme will encourage rural electrification through connections to the grid, solar photo-voltaics and mini-hydro development.

Energy policy has been the main driver of desertification in Zambia. The destruction of forests has been caused largely by the demand for charcoal and fuel wood while the degradation of the Kafue Flats, one of Africa's most productive wetland ecosystems, is the result of hydropower development. Although the PRS identifies the importance of modern energy services in reducing poverty, and the need to ensure the sustainability of supply, it does not acknowledge the links between fuelwood demand, desertification, and poverty, or the unsustainable nature of the present fuelwood/charcoal industry. Some PRS interventions will help reduce the rate of forest degradation, but the strategy does little to alter the priorities of the Energy Policy, which remain fundamentally damaging to the environment.

The Environmental Policy should consider the need for a Strategic Environmental Assessment of the National Energy Policy.

3.2.9 Transport and Communication

PRSP interventions on transport are, first and foremost, to support the economy to grow, thereby enabling more resources to be generated for more public interventions in all areas, including transport.

3.2.10 HIV/AIDS

The primary aims of the PRS are to help reduce new HIV/AIDS infections, to reduce the socio-economic impact of HIV/AIDS, to improve community home-based care, to provide anti-retroviral treatment and to improve the quality of life of orphans and vulnerable children.

3.2.11 Gender

The PRS will work to implement the National Gender Policy but proposes no additional interventions.

3.2.12 Environment

The PRS elaborates the links between poverty and the environment and notes that generally the urban poor are affected by sub-standard housing and poor environmental services, while the rural poor lack the ability to derive livelihoods from more productively and sustainable natural resources. It also notes the importance of involving affected people in environmental management for it to be successful.

The PRS supports the integration of environmental concerns into the Programme. Specifically, it recommends:

- A review of the policy framework for integrating environmental management and poverty reduction within the ongoing process of preparing a National Policy on Environment (NPE)
- A review of ongoing programmes in environmental management with a view to strengthening their focus on environment and poverty.

- Expanding, possibly to national level, pilot programmes that have proved successful in improving the environment while at the same time enhancing sustainable livelihoods of the poor.
- Developing complementary pro-poor/pro-environment programmes within the existing and future policy framework.
- Developing a framework for assessing the environmental impacts of sector-specific poverty reduction strategies, policies, programmes and action plans for use in early-stage planning.

3.3 Current Strategies and Environment and Natural Resources Management Programmes

3.3.1 Zambia National Action Programme for Combating Desertification and Mitigating Serious Effects of Drought in the Context of the United Nations Convention to Combat Desertification, 2002

The National Policy on Environment may contain several objectives that are almost identical to those of the National Action Plan (NAP) and opportunities to strengthen implementation of both the Policy and the NAP should be sought through close collaboration.

The Programme Vision is “to restore land productivity by using sustainable means of conserving it in order to reduce poverty and foster sustainable development”.

The National Action Programme (NAP) aims to foster sustainable environmental management through the reduction/control of land degradation, thereby contributing to poverty reduction, food self-sufficiency and food security and ultimately contributing to economic growth. Its immediate objectives include:

- Reduce the destruction of land resources in affected areas.
- Promote sustainable use of land resources.
- Increase public awareness and information dissemination on matters of land degradation.
- Provide a suitable policy and implementation framework for the implementation of the NAP.
- Establish and support effective administration and co-ordination of the NAP;
- Introduce and improve on assessments, planning and monitoring systems for the effective management of the NAP.
- Establish partnerships with multi-lateral and bilateral institutions in the management of arid, semi-arid and dry sub-humid areas.

Areas of programme intervention include:

- Early Warning and Preparedness.
- Forestry, Ecosystems and Species Conservation.
- Water Catchment and Energy Conservation.
- Collaboration and Networking.
- Extension, Public Awareness and Information Dissemination.
- Land Degradation Assessments, Monitoring and Reporting.
- Easy-to-use Environmentally-friendly Technologies including Indigenous Knowledge.
- Livelihood Improvement.
- Food Self-sufficiency and Food Security.
- Human Settlement Management.
- Legal and Policy Reviews.

3.3.2 National Biodiversity Strategy and Action Plan (NBSAP) – Convention on Biological Diversity (CBD)

The Government's mission is "to establish legal, policy and institutional frameworks and mechanisms that promote the conservation, management and sustainable use of Zambia's biological resources and the equitable sharing of benefits from the use of these resources by all sectors of the population".

The goals of the NBSAP are:

- Ensure the conservation of a full range of Zambia's natural ecosystems through a network of protected areas of viable size.
- Conservation of the genetic diversity of Zambia's crops and livestock.
- Improve the legal and institutional framework and human resources to implement the strategies for conservation of biodiversity, sustainable use and equitable sharing of benefits from biodiversity.
- Sustainable use and management of biological resources.
- Develop an appropriate legal and institutional framework and the needed human resources to minimise the risks of Genetically Modified Organisms (GMOs).
- Ensure the equitable sharing of benefits from the use of Zambia's biological resources.

3.3.3 Zambia Forest Action Plan (ZFAP)

The Zambia Forest Action Plan is a 20 year plan that aims to provide for the national management and conservation of forest resources to enhance the contribution of the forest sector to social and economic development, poverty reduction and the improvement of food security. The Plan has led to a review of the Forest Policy of 1965 and Forest Act of 1973, and adoption of the New Forest Policy of 1998. **The Forest Bill has been enacted....but not passed?**

The ZFAP includes the following sub-programmes:

- The Indigenous Forest Management and Biodiversity Sub-programme.
- The Tree and Forest Development Sub-programme.
- The Forest Industry and Non-Wood Forest Products Development Sub-programme.
- The wood fuel Energy Development Sub-programme.

These are complemented by supportive sub-programmes and a series of forest sector policy actions and institutional strengthening activities, which promote sustainable forest resources management namely,

- The Forest Education and Training Sub-programme;
- The Forest Research and Extension Sub-programme, and
- The Policy, Planning, Monitoring and Evaluation Sub-programme.

3.3.4 Water Resources Management Programme (WRAP)

The objective of the WRAP is to establish a comprehensive framework for effective development and management of the nation's water resources in an equitable and sustainable manner with strong stakeholder participation, particularly poor rural communities. Outputs will include an effective institutional and legal framework, stronger human resource capacity, models for planning and integrated water resources management, and improved data and information systems.

3.3.5 Natural Resources Consultative Forum (NRCF)

The Forum, reporting to the Ministry of Tourism, Environment and Natural Resources (MTENR) and funded by DANIDA, will provide a platform for policy dialogue, to galvanise the diversity of skills, efforts and resources required for sustainable management and utilisation of the environment and natural resources nationally. Membership of the Forum will include government, quasi-government associations, the private sector, including non-governmental organisations, donors and ex-officio members.

It is hoped that the Forum will provide Government and especially MTENR with a more informed and possibly more effective basis for undertaking their role of coordination, planning and regulation. Under the Forum, other discussion groups can be established. One example the discussion groups is the one dealing with community-based natural resources management,

The Forum will also be able to launch special workshops and seminars, and commission studies of special interest to stakeholders with the aim of producing advisory notes to relevant ministries.

4 CROSS-CUTTING ISSUES

4.1 Impact of HIV/AIDS on Environment

A reduced rate of population increase or population decline will generally slow or reduce demand for natural resources. However prolonged illness and the increased demands of caring will increase pressures on the most accessible resources, so that soil, forest and water resource degradation in the immediate vicinity of settlements is likely to intensify. The loss of the most productive members of society will weaken the transfer of knowledge and skills in natural resource management to the young so that less efficient and more damaging methods of resource production and harvesting may be employed.

4.2 Gender and Environment

The roles of the sexes in natural resource production and environmental management differ, but this is not always understood by planners. The importance of women is in most cases underplayed and thus overlooked. Implementation of the Gender Policy will provide an appropriate framework for improved environmental management.

4.3 Youth, Child Labour and Environment

Children and youths are often responsible for bird-scaring, herding livestock, fishing, hunting bush meat and collecting fruit before becoming involved in more formal income generating trades or crafts. Their activities can have significant effects on the environment, especially through uncontrolled burning and hunting of birds and other animals. However their attitudes and practice are more amenable to change through education and awareness programmes than are those of adults. Environmental policy strategies should therefore specifically target the young, including HIV/AIDS orphans.

4.4 Governance and Environment

The poor state of Zambia's environment, the failure to implement the Land Act equitably, the slow pace of decentralisation, the lack of finance for environmental management, and the absence of transparency and public debate over environmental issues, e.g. the results of Environmental Impact Assessments, are indicative of failure in environmental governance.

Within the context of natural resource management in Zambia, Reed and Scott (2001) have written: "Power rests with a small coterie of political and economic interests whose actions and decisions rest far from the light of public scrutiny. Change needs internal consensus on a future development strategy; a vision on the role, status, and character of rural Zambia; and a government accountable to the public."

5 POLICY REVIEW, LEGISLATION, AND INSTITUTIONAL ARRANGEMENTS FOR ENVIRONMENTAL POLICY IMPLEMENTATION

5.1 Background

The Constitution of Zambia specifically deals with matters related to environment and natural resources management. As "Directive Principles of State Policy and Duties of a Citizen" under Part IX of the constitution, Article 112 provides that the state shall:

- endeavour to provide clean and safe water, adequate medical and health facilities and decent shelter for all persons, and take measures to constantly improve such facilities and amenities;
- promote a clean and healthy environment for all; and
- promote sustenance, development and public awareness on the need to manage the land, air, and water resources in a balanced and sustainable manner for the present and future generations.

The constitution provides in Article 113 that every citizen shall contribute to the well-being of the community where the citizen lives, including the observance of health controls. These provisions are intended to guide the state in the development and implementation of national policies; enactment of laws; and application of the constitution and any other law.

The Government of Zambia is committed to the goal of reducing poverty through sustained economic growth and employment. It is implementing policies to promote economic stability; sector policies to promote growth and equity; and crosscutting policies to deal with political, social and infrastructure issues. While policies exist for natural resource management there is as yet no cross-cutting policy on the environment.

The mandate to formulate a cross-cutting Environment Policy lies with the Ministry of Tourism Environment and Natural Resources. The just ended consultative process identified five principal policy objectives. These are:

1. To protect the environment and natural resources.
2. To promote the development of sustainable community livelihoods.
3. To build individual and institutional capacity to sustain the environment.
4. To regulate and enforce environmental laws.
5. To promote the development of sustainable industrial and commercial processes.

National sector policies to promote growth and equity and/or manage natural resources; and cross-cutting policies to deal with political, social and infrastructure issues are reviewed below to assess their compliance with the objectives of a National Policy on Environment, the principle of sustainable environmental management, and the seventh Millennium Development Goal.

5.2 Policy Review and Assessment of Policy Impacts on Resource Use

5.2.1 Contextual and Cross-cutting Policies

The contextual and cross-cutting policies include the eleven policies on:

- Decentralisation;
- Land;
- HIV/AIDS

- Environmental Health;
- Population;
- Education;
- Information and Communication;
- Employment;
- Gender;
- Housing;
- Transport, and
- Legal Affairs

Decentralisation Policy

The Decentralisation Policy aims to devolve service delivery from central government to the 72 districts. Districts will also become responsible for revenue collection and the allocation and use of land now held under customary tenure and renewable natural resources.

Specifically, the policy retains for central government the responsibilities of:

- general policy formulation, legislation, monitoring and evaluation
- national performance standards
- control of State lands and minerals
- preservation of national monuments, antiquities, archives and public records
- regulation of trade and commerce
- control and management of epidemics, pandemics and disasters
- national development projects and programmes
- trunk roads and highways
- initial capacity development of district councils to provide core management functions
- legal backing to the development planning process and output
- the mechanism for mobilising local financial resources

Provincial government will become responsible for:

- co-ordinating and consolidating district plans into a provincial development plan for submission to Central Government
- monitoring the use and stock of resources and implementation of development plans
- ensuring compliance with Central Government policies and regulations
- implementation of national development projects and cross-sectoral (*i.e.* environmental) programmes

District councils will become responsible for:

- planning and implementation of development projects and programmes
- service delivery, including water supply and sanitation, environmental services and agricultural extension
- management and conservation of natural resources, including wildlife
- land allocation and utilisation
- community development
- trade and business licensing
- disaster management
- byelaws
- revenue collection

The policy implementation process will be steered by a Decentralisation Policy Implementation Committee (DPIC) comprised of representatives from the Cabinet

Office and 11 ministries. Significantly, the Ministry of Tourism, Environment and Natural Resources is not represented on this committee, perhaps weakening the administrative arrangements made for the transfer of environmental and natural resource management responsibilities to district level.

Decentralisation may facilitate better environmental management at the local level, if it gives greater power to those whose livelihoods are dependent upon the sustainable management of renewable natural resources.

While State land, including national parks and forest reserves, will remain under central government control, the policy is silent on the devolution of control and management of water resources, except that the district will be responsible for water supply and sanitation. However the Water Policy advocates bringing water resources under State control. The situation requires further clarification.

Land Policy

Land tenure is categorised into two main systems: customary and leasehold. 94% of land falls under customary tenure that is controlled and allocated by traditional authorities. The leasehold tenure, accounting for 6% of the total landmass, provides for title deeds for a renewable period of 99 years. The government favours increased leasehold tenure.

The Land Act of 1995 was introduced to increase security of tenure of land holders and provide for the conversion of customary land to leasehold tenure. It has also made efforts to mainstream gender in land policies and has, in this regard, reserved 30% of all allocations of land for women applicants.

Very little progress has been made in the market development for land, titling both customary as well as state lands, and setting up a land administration system and procedure to meet the demands of such a complex task. The Poverty Reduction Strategy requires a review of the Land Act of 1995. It is important to find out what the real issues are and to start addressing them. The starting point will be a review of the situation to identify appropriate interventions and instruments, "and this task will be launched immediately after the adoption of the Poverty Reduction Strategy Programme and will be completed within six months". Some key objectives in this process include finding more effective measures against unproductive holding of state land and, for rural areas, discussing with traditional communities incentives for opening unutilised land for investment.

Leasehold tenure provides a sense of security and places value on land for commercial transactions. Increased leasehold tenure will foster better land management. However the Land Act has adverse implications for the poor who cannot afford, or do not understand, the process of securing documentary proof of ownership of land and the unintended reduction of power that traditional authorities have over their subjects.

Whatever the eventual outcome of land policy implementation, the Environment Policy will need strategies to deal with the management of customary, leasehold and State land and the impacts of conversion from customary to leasehold title.

Health Policy

A draft National Environmental Health Policy has been prepared (2000), and includes the following main components:

- water supply
- sanitation and hygiene practices

- liquid and solid disposal and disposal of the dead
- food hygiene and safety
- insect and rodent vector and vermin control
- air pollution
- water pollution
- human habitat and safe housing
- recreational facilities
- good hygiene practices in schools, clinics, health posts and households
- use of appropriate technologies
- control of environmental diseases such as malaria, cholera, diarrhoeal and others

This policy was prepared as the Public Health Services Act and other related environmental and health legislation does not adequately address the question of environmental health. Environmental health concerns are cross-cutting and the draft policy recognises the roles, responsibilities, powers, and functions of the different government institutions that have environmental and health mandates which should therefore adopt the environmental health policy.

Public health priorities include malaria, HIV/AIDS, Tuberculosis (TB), and Sexually Transmitted Infections (STIs), integrated reproductive health, child health, epidemics, hygiene, sanitation, and safe water, which are all covered by the basic health care package. The Ministry of Health has a specific policy on HIV/AIDS, STI and TB. The prevalence of malaria, TB, some epidemics, sanitation and safe water and reproductive and child health are all closely linked to environmental policy and management. Given the potential complementarities between better environmental management and improved public health it is important that the wider linkages between health and environment are fully explored in formulating the National Policy on Environment. In addition, a National Food and Nutrition Policy will be finalised and implemented as a priority of the Poverty Reduction Strategy. Given that protein hunger drives overfishing and the depletion of wildlife due to hunting for bush meat, steps should be taken to ensure this policy is harmonised with a National Policy on Environment.

Population Policy

The National Population Policy was adopted in 1989. The Policy recognises the need to integrate population issues into development planning. To implement the policy, government prepared a National Population and Development Programme of Action (1996-2015). This document further reviewed the Population Policy in the light of current social and economic conditions.

The Policy is relevant to the Environment Policy as reduced population growth would in turn reduce pressure on the country's renewable natural resources.

Education Policy

The National Policy on Education also articulates the need for environmental health. It regards the role of the school as a health affirming and health promoting institution for all pupils and the communities. To this end it seeks to work closely with the Ministry of Health and the Ministry of Tourism, Environment and Natural Resources. Health education in the Ministry of Education is closely linked to nutrition on which programmes are well articulated.

The policy complements the objectives of a National Policy on Environment.

Information and Communications Technologies (ICTs) Policy

The policy is aimed at transforming the nation into a knowledge-based economy. Priority will be given to sectors identified as important in the national development framework such as the PRS and Transitional National Development Plan. One specific objective relates to support for the conservation of the environment and natural resources. It states: "The Government through the Ministries responsible for ICT, Heritage, Environment and Natural Resources and Transport infrastructure in conjunction with the Zambia National Remote Sensing Centre and private sector shall:

- establish the National Spatial Data Infrastructure as a mechanism for cross-sectoral collaboration for sharing and exchange of natural and cultural resource information, and
- develop institutional mechanisms to establish an integrated Geographic Information System to support heritage conservation and natural resources management."

The absence of resource assessment data is a significant constraint to resource management planning in Zambia. The ICT policy may help establish better institutional 'memory' and facilitate planning; the policy therefore supports a National Policy on Environment.

Employment and Labour Market Policy

The main objectives of this draft policy are to:

- create employment;
- increase the productivity and employability of labour, and
- create better quality jobs in conditions that ensure adequate income and protection of workers' basic human rights

The policy has no direct consequences for a National Policy on Environment.

Gender Policy

The vision of the Government is to achieve full participation of both women and men in the development process to ensure sustainable development and the attainment of equality and equity between the sexes.

With respect to gender imbalance in the environment and natural resources sector, which has impacted negatively on women, Government will:

- carry out EIA of proposed and existing industries and their effect on the needs of women and children
- integrate gender in policies, programmes and projects dealing with environmental management
- facilitate and support dissemination of information in rural areas to enlighten women on environmental issues
- create and promote awareness among the local people on how to manage their environment;
- promote and tap women's knowledge on utilisation and preservation of traditional medicinal and nutritional plants
- facilitate involvement of women in decision making at all levels in institutions dealing with the environment and natural resources

The policy recognises the linkages between people, gender and environmental management and strongly complements a National Policy on Environment.

National Housing Policy

The goal of the policy is “to provide adequate affordable housing for all income groups in Zambia”. The specific objectives include “assisting the poor to acquire decent shelter through alleviation of their affordability problems” and “fostering homes that are functional, healthy, aesthetically pleasant and environmentally friendly”.

The objectives are consistent with improving environmental conditions in housing, especially for the poor, and the use of environmentally friendly technologies. However, the policy document contains no implementation strategy.

Transport Policy

The policy has no specifically environmental objectives but recognises the need to account for environmental concerns in line with the National Environmental Action Plan (NEAP).

Poorly designed transport and communication can damage the environment and a National Policy on Environment should develop strategies to reduce this risk for the sector. The Transport policy acknowledges the responsibilities of other line ministries in the construction and management of roads but does not address the conflicts and inconsistencies that arise at the implementation stage.

Legal Affairs Policy

The policy is to provide a stable and solid legal framework necessary to evaluate, design, structure and implement various political, legislative and economic policies of the ruling Government.

The Zambia Law Development Commission, within the Ministry of Legal Affairs, is responsible for the revision and reform of the law. The Commission's objectives include:

- to review and reform all the laws with a view to their systematic development
- to assist in the codification and harmonisation of the law in order to eliminate anomalies and disparities in the existing law
- to undertake consultation through nation-wide research in order to involve the community so as to evolve appropriate laws

The policy has no direct consequences for implementation of an environment policy.

5.2.2 Policies to Promote Growth and/or Manage Natural and Cultural Resources

These include 12 policies on:

- Agriculture;
- Fisheries;
- Tourism;
- Mining;
- Industry, Commerce and Trade;
- Forestry;
- Energy;
- Water;
- Wetlands;
- Wildlife,
- Biodiversity and
- Heritage

Agriculture Policy

There is little disagreement within Zambia presently that the policy of liberalisation is correct for revitalising agriculture. The government has attempted to create a positive policy environment within which agricultural market liberalisation can be consolidated. The policy and institutional improvements have focused in recent years on outstanding reforms in the key areas of:

- consolidating the liberalisation of agricultural marketing (primarily the elimination of subsidies to marketing parastatals and, subsequently, their privatisation;
- strengthening the liberalisation of trade and pricing policy; and,
- streamlining the land tenure system to make it receptive to the policy of liberalisation.

The Agricultural Sector Investment Programme (ASIP) launched in 1996 has 5 broad objectives:

- to ensure national and regional food security through dependable annual production of adequate supplies of basic foodstuffs at competitive prices;
- to ensure that the existing agricultural resource base (land, water, and air) is maintained and improved upon;
- to contribute to sustainable industrial development;
- to generate income and employment to maximum feasible levels in all regions through full utilisation of local resources and realisation of both domestic and export market potential;
- to significantly expand the sector's contribution to the national balance of payments by, among other things, expanding agricultural exports in line with international comparative advantage.

Strategies to make the above objectives operational include:

- diversification of crop production;
- emphasising services to smallholders;
- improving the economic status of women;
- improving the use of the available water resources;
- full utilisation of land suitable for agriculture;
- helping farmers deal with natural disasters, and
- emphasising sustainable agriculture

Because of a stagnating agricultural sector and national poverty, the Poverty Reduction Strategy advocates a paradigm change in agricultural practice to drive economic growth and reduce poverty. The Strategy involves the conversion of customary land into large blocks of leasehold land, to create large farms that will grow crops for export. Many of these farms will have out-grower schemes attached.

Implementation of the agricultural policy will strengthen land tenure, realising value for land, protecting investment, and improving farmland management. However the impact it will have on land cover, livelihoods and biodiversity is unclear and the National Policy on Environment should formulate a strategy for incorporating Environmental and Social Impact Assessment into the farm planning stage.

The Poverty Reduction Strategy Programme will also promote the use of low-input and conservation farming technologies as part of a Targeted Support System for Food Security. As low input farming often entails shifting cultivation and adverse environmental effects, detailed evaluation of this aspect of the programme is recommended.

Fisheries Policy

The Fisheries Policy falls within the draft National Agricultural Policy 2001-2010. The policy aims to increase fish production and promote sustainable utilization of fishery resources in order to contribute to the economy through generation of employment, income, and improved availability of fish. The proposed policy encourages sustainable fisheries management, and stakeholder participation (especially the participation of local communities) in the capture fishery and aquaculture.

In general terms the policy would therefore seem to support the objectives of a National Policy on Environment.

Tourism Policy

The mission for the tourism sector is “to contribute sustainably to the economic well-being and enhanced quality of life for Zambians through Government led, private sector driven, quality product developments that are consistent with the protection of the unique natural and cultural heritage”.

Within this overall mission, the priority aims of the Government include:-

- grow the tourism industry through encouragement of the private sector
- redistribute opportunities to participate in tourism growth, ownership, and access to the benefits towards Zambians
- ensure that such equitable growth is environmentally sustainable and will be accessible to future generations
- diversify the tourism product from being mainly wildlife based
- carry out necessary legislative and organizational changes to facilitate development in the sector
- raise public awareness of the national significance of investment in and promotion of tourism
- promote investment incentives and initiatives in Zambian wildlife, cultural tourism, ethno-tourism, adventure tourism, sports tourism, eco-tourism, child & youth tourism – especially in the development of camps etc, community (based) tourism, other types of tourism and in the tourism product generally
- improve tourist infrastructure – roads, railways, airports, telecommunications - and other supporting facilities and
- ensure planned, sustainable and responsible tourism development.

In practical terms, support for environmentally sustainable tourism will include sustainable waste disposal, eco-tourism, green packaging and recycling, water and energy conservation, integrated environmental management, and social and environmental audits.

Government will actively promote, facilitate and support tourism development in areas where tourism offers a competitive form of land-use and will ensure that tourism is integrated into land use plans for such areas. An Inter-Ministerial Committee on ‘Infrastructure and Land Use’ will be created in the proposed tourism development priority areas, in order to help encourage, plan, coordinate and steer tourism development.

Actual development will take place within the context of the National Environmental Action Plan and those of any environmental policies developed as a follow-up.

Specifically, tourism development will not deprive local communities of access to those resources along the banks or shores of rivers, dams, lagoons, lakes, in and around GMAs, national parks and other natural resources needed for their livelihood.

Whilst recognizing the importance of the wildlife and wilderness product in tourism, the Government is committed to the concept of product diversification. Such diversification will be encouraged both within the wildlife sector and for other tourism products among them culture and heritage, traditional ceremonies, adventure activities, community tourism, eco-tourism. It is intended that local communities will fully participate in tourism development.

The Policy allows for precedence by a National Policy on Environment.

Mining Policy

The policy aims to encourage private investment in exploration and development of mining and downstream processing. One specifically environmental policy objective is to reduce the danger of ecological damage arising from mining operations as well as damage on the health of workers and inhabitants of the neighbourhood through air, water and land. This will be done through new and existing legislation.

Environmental concerns are currently addressed by Statutory Instrument No. 28 (1997), Environmental Impact Assessment Regulations, enacted under the provisions of the Environmental Protection and Pollution Control Act of 1990.

The Mines and Minerals Act provides for the granting of mining rights, prospecting, mining, disposal of minerals, conservation and protection of air, water, soil, flora, fisheries and scenic attractions in or on the land over which the mining right is sought. It also provides for EIA, air quality and emission standards, storage, handling and processing of hazardous materials, and regulates mine dumps. Specific guidelines for environmental protection in mining operations are contained in Statutory Instrument No. 29 (1997), also called the Mines and Minerals (Environmental) Regulations of 1997, and enacted under the Mines and Minerals Act of 1995.

The Mines and Minerals Act confers powers on the Minister and Director to issue licences to large-scale mining and small scale mining applications respectively. The mining licence should be accompanied by an approved Environmental Impact Assessment and Management Plan. If a developer finds the provisions of any regulation unduly onerous, he may apply to the Minister through the Director of Mines Safety for an exemption from the regulation. Existing legislation also provides for the establishment of an Environmental Protection Fund whereby developers of large-scale mining projects are expected to contribute a proportion of money to the Fund for rehabilitation purposes.

In principle, the policy allows for the protection of the environment and the Poverty Reduction Strategy Programme makes no specific mention of the need for any additional environmental safeguards. However, the PRS does note that small-scale miners make no contribution to an Environmental Protection Fund. This reduces the probability that the environmental costs of such mining operations will be internalised.

In practice, the impact of the Mining policy has been confusion and a general 'free for all'. Foreign prospectors have been given licences from Lusaka without the knowledge of traditional leaders in whose areas the mines are located. Moreover there is no monitoring of compliance with the recommendations made in EIAs.

The Mining Policy and Act thus appear to provide a smokescreen behind which mining, especially small-scale, can continue its 'business-as-usual'. The full costs of mining operations are not internalised, and the costs of environmental degradation are borne by the local communities.

The National Policy on Environment should develop strategies to ensure that the full environmental costs of sectoral activities, such as mining, are internalised.

Industry, Trade and Commerce Policy

The policy is cast in generalities and lacks specific programmes related either to environmental management or poverty reduction. Recognising this weakness, the Poverty Reduction Strategy (PRS) proposes a vision to guide industrial development over the next 25 years:

"To attain a dynamic, competitive, and environmentally sustainable industrial sector in both urban and rural areas as a means to reducing poverty through sustained economic growth and employment creation"

As a means of promoting investment, the PRS also proposes a number of measures, including:

- the production of geographically segregated resource endowment maps to assist potential investors to easily identify available resources;
- encourage local authorities to designate land for the development of industrial parks;
- mainstreaming environmental and natural resource management into industrial development programmes and activities.

By recognising that resource assessment data are fundamental to industrial planning, the PRS agenda is identical to the fifth objective of a National Policy on Environment namely, "to promote the development of sustainable industrial and commercial processes".

The Environment Policy formulation process should take note of bullet 3 above.

Forestry Policy

Several of the 13 specific policy objectives are directly relevant to a National Policy on Environment, namely:

- to ensure the integrity, productivity and development potential of the forest reserves (especially through the involvement of stakeholders);
- to ensure adequate protection of forests, by empowering local communities and promoting the development and use of forest and non-wood forest products;
- to ensure sustainable management of forest ecosystems and biodiversity application through scientific and indigenous technical knowledge (through, *inter alia*, promoting the value of forests for catchment protection, biodiversity and ecosystem goods and services);
- to ensure sustainable management of forest resources for wood fuel production;
- to recognise and support the development of non-wood forest products;
- to regulate exploitation and ensure efficient use of forest resources and products, and
- to ensure gender equity in all aspects of forestry management, production and utilisation of forest products, extension training and education.

In support of the policy, the Forestry Act No. 7 of 1999 provides for:

- the establishment of the Zambia Forestry Commission to take over the responsibilities of Forestry Department, and
- community, NGO and private sector participation in sustainable forest resource management through Joint Forest Resource Management Areas.

The Act further provides for continuation of the protected area system of National and Local forests and open areas for community participation.

The policy framework complements all five key objectives of the National Policy on Environment. In particular, it seeks to protect the forest resource and recognises the importance of involving local communities in forest management if degradation is to be halted and reversed.

It is too early to assess the impact of the policy on the forest resource. Initial concerns expressed indicate that the selective implementation of the Joint Forest Management Project may not be effective as it has excluded the participation of the local majority. Outside the project, financial constraints hinder the effectiveness of the Forestry Department in implementing programmes and activities.

In addition, the Forestry Commission has not been established, mainly because legislation supporting the implementation of strategies under the policy is lacking. The Forestry Commission is expected to enter into management contracts and provide incentives to encourage people to become involved in forest management. The absence of a department to deal with policy has been another factor.

Implementation of the policy relies heavily on the participation of other stakeholders and institutions. Although the policy identifies these institutions and stakeholders, there are no formal links that ensure they perform the functions required for successful implementation of the policy.

In addition, the policy does not outline how institutional harmonisation of policies and legislation will take place and responsibilities for implementation remain fragmented.

Energy Policy

The policy aims “to promote optimum supply and utilisation of energy, especially indigenous forms, to facilitate the socio-economic development of the country and maintenance of a safe and healthy environment”. Broadly, the policies in the energy sub-sectors are defined as follows:

- Electricity: increase accessibility in its use as well as develop the most cost-effective generating sites for domestic and export markets.
- Coal: promote its use with due regard to environmental protection.
- Wood fuel: promote efficient production and utilisation of wood fuel.
- Petroleum: supply and utilise petroleum in the most efficient and cost-effective manner.
- New and Renewable Sources of Energy: promote wider application of proven NRSE technologies in meeting the energy needs particularly for remote areas.

Implementation of the policy through the PRSP aims to:

- increase the electricity access rate from the current 20% to 35% by the year 2010

- reduce the production of charcoal by about 400,000 tonnes by 2010, through efficient production and utilisation as well as by encouraging the use of alternative fuels such as electricity, millennium gel fuel, and liquid petroleum gas.
- increase electricity exports to neighbouring countries by 300% by the year 2010 from the current level.

These aims will be achieved by:

- enhancing existing capacity through rehabilitation and/or refurbishment
- creating new energy delivery infrastructure through, for example, building new power stations, transmission lines, etc
- targeted interventions aimed at achieving particular results such as increased access and promotion of alternative technology.

New energy delivery infrastructure includes construction of the Kafue Gorge Lower Hydroelectric Scheme through private sector investment, and the Itezhi-tezhi Hydroelectric project where generating capacity will be installed and a transmission line built. Mini-hydro projects will also be supported in the northern part of the country where small waterfalls exist.

Energy policy appears to be driven by the opportunity to export electricity to South Africa, especially during periods of peak demand. A 300% increase in export sales to neighbouring countries is planned by 2010, whereas access to electricity nationally will increase from 20% to only 35% over the same period. Thus investment is concentrated on the refurbishment of existing plant and construction of new hydropower stations rather than the construction of new substations and transmission lines. The policy is also aimed at "securing the most cost-effective generating sites for power generation". The industry does not include environmental costs in its project appraisal; thus Zambians - rather than South Africans - bear the costs.

Notwithstanding the incidental and locally beneficial creation of Lake Kariba, one of southern Africa's most productive fisheries and tourist destinations, the Energy Policy is in direct conflict with the MDG of Environmental Sustainability. The Policy is the main driver of woodland destruction nationally, for fuel wood and charcoal production, and has also led to the degradation of southern Africa's most productive wetland ecosystem, the Kafue Flats, through the construction of dams at Itezhi-tezhi and Kafue Gorge.

The National Policy on Environment should provide a statutory mechanism for Strategic Environmental Assessment of sectoral policies, plans and programmes.

The Energy Policy is silent on the need to involve local communities in electrification ventures. However mass electrification in the absence of joint ventures is not affordable (The Post, 10 December 2004) and South Africa's power utility ESCOM routinely conducts joint ventures with communities on a 50-50 basis. Local community participation in electrification projects should be re-evaluated in the Energy Policy.

Water Policy

The Water Policy is aimed at promoting sustainable water resource development with a view to facilitate an equitable provision of adequate quantity and quality of water for all competing groups of users at acceptable costs and ensuring security of supply

under varying conditions. This entails establishing a well-defined institutional structure that will achieve the intended policy objectives.

Specifically, the policy recognises water as an economic good. It separates water resource management responsibilities from those related to water supply, and aims to bring ownership of water resources under state control, through revision of the Water Act Cap 312.

Under rural water supply and sanitation, the Water Policy supports measures aimed at increasing accessibility to safe drinking water and sanitation facilities for the rural population. Its overall goal is to ensure universal access to safe, adequate and reliable water supply and sanitation services and to ensure that rural supply and sanitation are community based through formation of water committees for effective co-ordination, management and mobilization of resources.

The Policy is consistent with the sustainable management of water resources and complements a National Policy on Environment. The institutional and legal framework highlights the importance of EIA prior to the implementation of any development project, and the application of other legislation, notably the Environmental Protection and Pollution Control Act, for effective management of water quality. However, the Policy is weak on how local-level institutions might be integrated into water resources management. The National Policy on Environment should address this issue.

One policy objective is to ensure that water tariffs take account of all the economic costs. It recognises the need for pricing studies to determine the basis and extent of water rights and fees and charges for consumptive uses, such as irrigated agriculture and stock-watering, and non-consumptive uses, including hydropower generation, fishing, navigation, tourist attractions and recreation. Difficulty will arise in valuing natural capital assets that are dependent upon water, such wetland goods and services, that may be 'customers' for water or be degraded by other users. The National Policy on Environment should therefore contain a strategy to overcome this methodological difficulty.

Wetlands Policy

The aim of the policy is twofold: firstly to ensure the wise use of wetlands and their resources, and secondly, to create a comprehensive, stakeholder-based institutional and legal framework for their management.

The specific objectives are:

- To promote the integrity and natural productivity of wetland ecosystems and the maintenance of their functions and values
- to conserve their biodiversity
- To promote their socio-economic development potential and contribution to the local and national economy
- To strengthen the legal and institutional framework for their management
- To promote a multi-sectoral approach to planning and management
- To develop public education and awareness
- To promote research, inventorying and monitoring of wetland resources
- To conserve wetlands
- To promote international action of national interest for the conservation of wetlands
- To restore degraded wetlands
- To promote community participation and ensure equitable sharing of benefits

- To provide training and strengthen the capacity of wetland conservation institutions
- To promote “new” and created wetlands

A comprehensive list of strategies for achieving each objective is provided.

The policy framework complements all five key objectives of a National Policy on Environment. The importance of EIA in planning development projects that affect wetlands is rightly stressed. However, there is a need to harmonise implementation of the Wetlands Policy with that of the Water Policy, which recognises water as an economic good. The recent study of development options for water resource use in the Kafue Basin could not reach a definitive conclusion on the preferred development option because it could not quantify the economic value of wetland goods and services that would be lost in the event of alternative development options. The National Policy on Environment should therefore include a strategy for developing a national capacity in natural resource economics, so that natural capital assets can be valued in economic terms.

Despite the wide range of ‘free’ goods and services provided by wetlands, wetland conservation and management has been of little interest to any sector, be it water, agriculture, forestry or energy. Moreover, the Poverty Reduction Strategy is silent on the importance of fisheries to the poor, and the need for better fishery management. Over 25% of Zambia is classified as wetland. The National Policy on Environment should thus consider strategies that raise the profile for wetland conservation and management to ensure their goods and services are maintained.

Wildlife Policy

The Mission Statement of the Zambia Wildlife Authority (ZAWA) states:

“The Zambia Wildlife Authority is there to conserve Zambia’s precious and unique wildlife. To that purpose it promotes the appreciation and sustainable use of wildlife resources by:

- facilitating the active participation of local communities in the management of the wildlife estate
- promoting and developing tourism
- enhancing the recognition of the economic value of wildlife resources amongst public and private stakeholders, and
- education of the general public

By doing so ZAWA contributes to the maintenance of Zambia’s rich biodiversity and to economic development of the sector, and the local communities in the Game Management Areas and the country as a whole.”

The Wildlife Act of 1998 provided for the creation of Zambia Wildlife Authority. It also provided for the participation of communities in the planning and management of wildlife estates and for the creation of Integrated Resources Development Boards.

Of the policies reviewed, implementation of the wildlife policy has had the greatest impact on environmental and natural resource management at the district level. Implementation has involved:

- the establishment of ZAWA, and especially the Directorate of GMAs, to coordinate the activities in the GMAs;
- the registration of Community Resource Boards (CRBs);
- the disbursement of revenues;

- the recruitment of village scouts, and
- a number of community based initiatives for example the constructions of schools

Environmental and natural resource management has improved and communities now appreciate the importance of the resources more. Participation has enhanced their sense of ownership as they now generate social and economic benefits from the environment and natural resources.

Although the Policy and Act generally complement the objectives of the National Policy on Environment, empowerment of local communities over their wildlife resources is limited. The law does not enable communities to enter into business relationships directly with the private sector. Thus communities gain few management rights and significant income accrues to ZAWA. Relatively little benefit reaches the individual household and poaching remains a problem in many areas because of poverty and the lack of alternative sources of income.

Biodiversity Policy

Following ratification of the Convention on Biological Diversity in 1993, the Government prepared the Biodiversity Policy of 1999.

The Government's mission is "to establish legal, policy and institutional frameworks and mechanisms that promote the conservation, management and sustainable use of Zambia's biological resources and the equitable sharing of benefits from the use of these resources by all sectors of the population".

The guiding principles include:

- Protection, conservation and sustainable utilisation of biodiversity are a responsibility of every citizen of Zambia
- All Zambians depend on biodiversity, should share responsibility for managing biological resources sustainably, and should benefit equitably from the use of biodiversity
- All Zambians should be encouraged to participate in decisions involving the use of our biophysical resources, including air, water, land, plants and animals
- Biodiversity has ecological, economic, social, cultural and intrinsic values
- Scientific and indigenous knowledge should contribute to sustainable management and use of biological resources and such knowledge, innovations and practices about biodiversity should be respected, protected and supported
- Multi-sectoral co-operation for the planning and management of biodiversity is essential to the implementation of the strategy, and
- *Ex-situ* measures should complement *in-situ* conservation of biodiversity, especially for species and populations that are threatened by extinction and those modified by man to meet social, cultural, scientific and economic needs.

Heritage Policy

The Heritage Policy is "to conserve Zambia's natural and cultural heritage for sustainable utilization and appreciation by the public, in order to significantly contribute to improvement of the quality of life of rural communities where heritage is located and to the growth of the national economy".

The policy's guiding principles recognise the importance of public-private partnership, with the government creating conducive environment for private sector investment. A further principle recognises that heritage assets should be considered as an integral part of the resources belonging to local communities and that therefore, their management should be community based.

5.2.3 Conclusions

Contextual and cross-cutting policies vary in their relevance to the objectives of the National Policy on Environment. The policies relating to Decentralisation, Land, Health, Population, Education, Information and Communication Technologies, and Gender are significant for and supportive of sound environmental and natural resource management, while draft policies on Environmental Health, and Food and Nutrition have the potential for doing so. The policies on Decentralisation, Land, and Gender are especially important as they encourage the notion that environmental management is best done by empowering those whose livelihoods directly depend upon renewable natural resources

In contrast, the policies on Housing and Transport have weakly developed strategies for implementing relevant issues of environmental and natural resource management.

Policies to promote growth and equity and/or manage natural resources are, in general, explicit in outlining objectives and strategies for environmental and natural resource management: in theory at least, they complement the objectives of the National Policy on Environment. Weakness in the Industry, Commerce and Trade policy is to be rectified in the Poverty Reduction Strategy Programme.

While most policies support community involvement in natural resource management, most pre-date or do not take full account of the Decentralisation Policy. Thus, the importance of planning at District level and involvement of the private sector in service delivery is not recognised. At present, even under the most progressive natural resource management policy, that of Wildlife, the law does not enable communities to enter into business relationships directly with the private sector. Central government thus retains a monopoly on service delivery within the sub-sector.

In addition, some conflicts between natural resource sub-sector policies are evident, e.g. between agriculture and forestry on farm extensification *versus* intensification.

While superficially supportive of sound environmental management, the implementation of policies on Mining and Energy follows a narrower agenda, conditioned in both cases by a notion of 'economic cost' that does not include environmental externalities. As a result, both sectors have caused significant damage to Zambia's environment and natural resources. In addition, neither sector admits to the importance of involving local communities in furthering their objectives.

The sectoral development of environmental policy has been patchy, varying from some policies that are almost fully compliant with the objectives of a National Policy on Environment to others that make no meaningful provision for environmental protection. It is noted that no ministry appears to have an environmental policy for internal use, yet all consume resources and produce waste. For example, government currently consumes almost twice as much electricity as manufacturing industry in Zambia.

Formulation of a National Policy on Environment provides an opportunity to address policy weaknesses and establish cross-sectoral uniformity, to reduce the risk of sectoral conflicts in policy interpretation. However it does not eliminate the problem of sectoral failure in policy implementation, which can only be done through legislative and institutional reform, and a greater political commitment to sustainable environmental management.

5.3 Legislative Review

The implementation and enforcement of environmental law in Zambia has been reviewed (Aongola, 1999; Chileshe, J. 2004; Mulonda, P. 1999). Zambia's body of environmental law is spread over more than 20 international treaties and over 30 Acts of Parliament. However, the Ministry of Tourism, Environment and Natural Resources, the ministry responsible for environmental policy, is only responsible for two pieces of legislation and about ten international instruments. Responsibility for the remainder is dispersed amongst at least ten line ministries. This poses a great challenge to government when it comes to implementation and enforcement due to the large number of players each pursuing its own sectoral policy that may not recognise the importance of environmental management principles.

One significant weakness in existing law is the codification of international treaty agreements into national law. Generally, international treaty obligations are either programmatic (e.g. Convention on Biological Diversity (CBD)) or justiciable (e.g. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)). Programmatic treaties can be implemented without seeking Parliamentary approval, but justiciable ones create obligations that have to be enforced in courts of law and therefore may require fresh legislation.

Much of the justiciable international law is unenforceable as it has not been incorporated into national law. For example, two wetlands of international importance – Lochinvar and Blue Lagoon National Parks on the Kafue Flats, and the Chikuni GMA in the Bangweulu Swamps – have been designated under the Ramsar Convention, but there is no legislative authority for this action.

In other cases, the legislation implementing part of a convention has been passed. For example, trade in elephant ivory and rhinoceros horn, prohibited under CITES, is also covered under national law and enforceable in court, but similar national legislation to implement CITES and protect other endangered animals and plants has not been passed.

Implementation of international environmental legislation has been piecemeal due to the diversity of interests amongst the responsible ministries. Co-ordination between the environment sector and other implementing institutions has been weak, and several inconsistencies in the body of law have thus developed.

Further deficiencies are apparent in the body of national law. In particular, national environmental law does not yet take account of the Decentralisation Policy under which central government will be responsible for such things as general policy formulation, monitoring and evaluation, national performance standards, initial capacity development at district level and the mechanism for mobilising local financial resources, while district councils will be responsible for such things as planning and implementation of development projects, service delivery and the management and conservation of natural resources, including wildlife etc.

Thus, even the most progressive of existing natural resource management laws, the Wildlife Act of 1998 has no role for the district council. Community Resource Boards (CRB), set up for community-based natural resource management purposes, report to ZAWA, and their mandates extend over chiefdoms.

Moreover, while championing community participation in natural resource management, there is no provision in the Wildlife Act for the community to enter directly into management agreements with the private sector. Nor does the Act provide a legal mandate for management structures below the Community Resource Board.

Community participation in natural resource management is favoured in other sub-sector legislation, but there is no mechanism for harmonising structures between sub-sectors. Thus the Forestry Act of 1999 provides for Village Resource Management Committees (VRMC), within Joint Forest Management Areas. Both the VRMC and the CRB are mandated by their respective Acts to develop and implement management plans. Joint Forest Management is open to communities living in National and Local forests and open areas. Communities in GMAs, with operational CRBs, can also apply to participate in JFM. This means that such an area would have two parallel structures with similar functions operating side by side.

Proposals to broaden the mandate of the CRB, to include the management of resources other than wildlife within the GMAs, have been made but are not yet approved in law. The Fishery Act will also allow some community participation in resource management, but has yet to be enacted. In addition, the National Heritage Conservation Commission policy also encourages community participation in heritage management through existing CRBs.

As with implementation, enforcement of national environmental legislation is carried out by 11 line ministries through statutory bodies or institutions such as directorates (e.g. ZAWA). District councils also exercise delegated statutory functions at district level. Almost all the laws have within them enforcement mechanisms with penalties attached. However, the same offence may be covered by two laws with differing penalties. For example, the Water Act and Environmental Protection and Pollution Control Act (EPPCA) both address the issue of water pollution and the ensuing penalties that go with committing an offence. EPPCA provides for a person found guilty of committing an offence to be liable upon conviction to a fine not exceeding 100,000 Kwacha or to imprisonment for a term not exceeding three years or both. The Water Act, on the other hand, provides for a fine not exceeding 6,000 penalty units or in default of payment to imprisonment with or without hard labour for a period not exceeding one year or to both for a first offender. A second or subsequent offence attracts a fine not exceeding 12,000 penalty units or in default of payment to imprisonment with or without hard labour for a period not exceeding two years, or both. Similar implementation conflicts exist in other policies and legislations.

In any event, for prosecutions to be effective there must be effective law enforcement. With the exception of ZAWA, which has a prosecution wing, none of the enforcement institutions have prosecution wings: they must rely on lay prosecutors from the Police Service, who may not understand the principles and objectives of environmental management, to investigate and prosecute cases. A pervasive problem is the lack of resources (transport, funds, human) available for law enforcement.

With over 30 pieces of legislation affecting the environmental and natural resources sector it is unsurprising that most people have a poor grasp of the law. This would

be of little concern were it not for the fundamental importance of some legislation for natural resource management and social harmony. The Land Act of 1995, for example, was introduced to increase security of tenure of land holders and provide for the conversion of customary land to leasehold tenure. However the Act has not been translated into the vernacular despite the fact that it will have adverse implications for the poor who cannot afford, or do not understand, the process of securing documentary proof of ownership of land.

In conclusion, a significant body of international environmental law remains to be incorporated into national law. National environmental law itself is sometimes outdated, overlapping, confusing, poorly understood, and largely unenforceable.

The incorporation of new and harmonisation of existing laws requires central oversight, given the failure of the existing inter-ministerial 'co-ordination' model of environmental management to do so. In the next section, consideration is given to the need for a stronger institutional 'voice' for environmental management to bring about such change.

5.4 Institutional Arrangements for Environmental Policy Implementation

Responsibility for implementing a National Policy on Environment will rest with the Ministry of Tourism, Environment and Natural Resources (MTENR). Currently the ministry is responsible for policy development and new environmental and natural resource legislation, including the incorporation of international environmental and natural resource conventions into national law. The Minister, MTENR, also supervises the Board of the Environmental Council of Zambia (ECZ).

The Environmental Council of Zambia was established to implement the Environmental Protection and Pollution Control Act of 1990.

The specific functions of ECZ are to:

- advise government on the formulation of policies relating to good management of natural resources and the environment;
- recommend measures aimed at controlling pollution resulting from industrial processes;
- advise on any aspect of conservation;
- advise on the need to conduct and promote research analysis, surveys, studies, investigations and training of personnel, in the field of environmental conservation protection and pollution control;
- co-ordinate the activities of all Ministries and other bodies concerned with the protection of the environment and control of pollution;
- advise on co-operation between national and international organizations on environmental issues;
- monitor trends in the use of natural resources and their impact on the environment;
- request for information on the quantity, quality and management methods of natural resources and environmental conditions from any individual or organization anywhere in Zambia;
- identify projects or types of projects, plans and policies for which environmental impact assessment are necessary and undertake or request others to undertake such assessments for consideration by the Council

Thus the ECZ has a comprehensive brief in the field of environmental and natural resource management. However, its key functions are to "advise", "recommend",

“co-ordinate” and “request”. With the exception of the Environmental Protection and Pollution Control Act of 1990 and Statutory Instrument No. 28 (1997), Environmental Impact Assessment Regulations, it has no statutory duties. Thus, environmental management is largely dependent upon the interest and competence of other line ministries who typically regard the environment as an externality to their principal business.

The powers and capacity of ECZ compare unfavourably with similar institutions in other countries in Africa. In Uganda for example, the National Environment Management Authority (NEMA) has supervisory powers over line ministries on environmental matters, and reports to the Prime Minister rather than the Minister. Table 5.1 compares the structures, managements, responsibilities and key powers of ECZ and NEMA.

Further strengthening of environmental management at the national level might be made by creating an Environmental Unit in the Ministry of Finance and National Planning. The unit would conduct strategic studies (such as the Kafue Basin Integrated Environmental Assessment study made by ZESCO/OPPI in 2001-2002), to ensure environmental sustainability was mainstreamed into national planning, sectoral policies and spending plans. The Unit might also assist in attracting donor support for environmental and natural resource management at district level.

The delivery of environmental services by districts will require supervision from the centre. ECZ currently has no presence at district level and institutional strengthening should make provision for establishing district environmental officers who, through the district council, would be responsible for producing district environmental management plans and monitoring the impact of service delivery.

Table 5.1: Comparison of the structure, management, responsibilities, and key powers of the Environmental Council of Zambia and National Environmental Management Authority in Uganda

Parameter	ECZ, Zambia	NEMA, Uganda
Status:	Body corporate with perpetual succession and a common seal	Body corporate with perpetual succession and a common seal
Administrative Reporting to:	Minister, MTENR	Minister, MENR
Council/Policy Committee composition:	Chairman appointed by Minister; representatives of 13 ministries, parastatals, universities, industry, commerce and conservation NGO	Prime Minister (chair); 10 ministers.
Functions of Council/Policy Committee:	To do all such things as are necessary to protect the environment and control pollution, so as to provide for the health and welfare of persons, animals, plants and the environment	To provide policy guidelines, formulate and co-ordinate environmental policies for the Authority; To liaise with the Cabinet on issues affecting the environment; To identify obstacles to the implementation of environmental policy and programmes to ensure implementation of those policies and programmes
Management board:	None	Representatives of the Ministry of Natural Resources; Agriculture, Animal Industry and Fisheries; Economic Planning; 2 academic and research institutions; two local NGOs; 2 private sector
Functions of board:	None	Oversee implementation and operation of the policy; Review policy and strategic plan of the Authority; To approve annual budget and plans of the Authority
Key functions	Environmental quality standards for water, air, noise, ionising radiation. Pollution control standards; waste classification and disposal. Pesticide regulations; Environmental and natural resource research, monitoring guidelines and regulations; Review and approval of environmental impact assessments and	To co-ordinate the implementation of Government policy and the decision of the Policy Committee; To ensure the integration of environmental concerns in overall national planning through co-ordination with the relevant ministries, departments and agencies of Government; To liaise with the private sector, intergovernmental organizations, non-governmental agencies, governmental agencies of other states on issues relating to the environment; To propose environmental policies and

Parameter	ECZ, Zambia	NEMA, Uganda
	environmental impact statements	<p>strategies to the Policy Committee; to initiate legislative proposals, standards and guidelines on the environment;</p> <p>To review and approve environmental impact assessments and environmental impact statements;</p> <p>To promote public awareness through formal, non-formal and informal education about environmental issues;</p> <p>To undertake such studies and submit such reports and recommendations with respect to the environment as the Government or the Policy Committee may consider necessary;</p> <p>To ensure observance of proper safeguards in the planning and execution of all development projects, including those already in existence that have or are likely to have significant impact on the environment;</p> <p>To undertake research, and disseminate information about the environment.</p>
Key power at national level	None	<p>Supervision and accountability of 'lead agencies' (e.g. sectoral ministries) in implementation of the environment policy:</p> <p>"the Authority may delegate, by statutory instrument, any of those functions to a lead agency. Any lead agency charged with the management of any segment of the environment under the law shall submit to the Authority within two months after the expiry of every two years, a report on its operation during that period".</p> <p>The Authority prepares a National Environmental Action Plan every 5 years that is binding upon all persons and all Government departments, agencies and organs.</p>
Key power at district level	None	Each District Environment Committee prepares a District Environment Action Plan every 3 years in consultation with the Authority. The plan is binding on all district agencies, local committees and persons within the district.

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