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**THE STATUS OF ENVIRONMENT STATISTICS  
IN ZAMBIA**

# **THE STATUS OF ENVIRONMENT STATISTICS IN ZAMBIA**

**PREPARED**

**BY**

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## 1. **INTRODUCTION**

The development of environment information system (EIS) in Zambia has been rather slow in the recent past due to financial constraint. Creation of the National Remote Sensing Committee in 1980 was hailed as a first step towards establishing an environment data bank in Zambia. A further step forward was taken with the development of the National Conservation Strategy (NCS) in 1985. Such efforts culminated into the establishment of Natural Resources Data Bank at the University of Zambia in 1989. Specifically, the University of Zambia data bank had included aspects on inventory of environmental publications and a catalogue of expertise available having knowledge of environmental and natural resources management.

Geographic Information System (GIS) establishment in some institutions provided a forum for further discussions on information sharing in the late 1980's. A national GIS committee was created in 1991 and replaced the National Remote Sensing Committee. The first GIS and Natural Resources Management Section was set up in the Ministry of Agriculture. The aim was to develop GIS applications for agriculture research and planning. That necessitated the creation of National Environment Monitoring System (NEMS).

In 1992, the National GIS Committee organised a workshop where issues pertaining to computer hardware, software and data standardization were discussed. It was during the same year that a data bank was created at the National Environmental Council of Zambia (ECZ). The ECZ data bank had absorbed the Natural Resources Data Bank at the University of Zambia. Later in 1993 a National Environmental Information System (NEIS) program with ECZ as the implementing agency was launched. The NEIS programme sought to develop the participating institutions starting with Data Bank at ECZ as a coordinating unit.

## 2. **CURRENT INSTITUTIONAL ARRANGEMENTS IN DATA COLLECTION**

There are various institutions that collect environment related data in Zambia. However, most of them have data that is incomplete in terms of coverage. In many cases these institutions lack the necessary resources in order for them to contribute meaningfully to the development of an effective and efficient Environment Information System (EIS).

A summary of institutional data collection activities is provided in the following table:-

Table 1: SUMMARY OF THE RESULTS OF THE EIS SURVEY CONDUCTED BY ECZ IN 1995

INSTITUTION	THEMES	COVERAGE	OUTPUTS	LIMITATION
Wildlife Conservation Society of Zambia	Environmental Education; Environment and Development Education	• National • Province	• leaflets booklets • magazines • newsletters	Completeness
Water Affairs Department	Ground Water Fluctuation; Water Pollution, Hydrology, Water resources	• National • Province	• reports	Completeness, quality, accuracy
Environmental Council of Zambia	Industry; Agriculture; Forestry; fisheries, Land Use; wetlands, Air Pollution; Noise; Hydrology; Land cover; soils; pesticides and Toxic substances; Waste	• Local • Provincial • National;	• tables • maps • reports	Completeness
Zambia Meteorological Department	Weather-crop relationship; Aviation weather; others	• Local • Provincial • National	• tables • maps • text	Completeness
Policy Planning Division, MAFF	Sectoral budget; Crop forecast; final crop forecast; Post Harvest Survey; Agriculture Statistics	• Local • Provincial • National	• tables	Data not well structured
IUCN - The World Conservation Union	Education & Communication, Environmental Law, strategy & Planning, National Parks & protected areas, species survival, ecosystem management	• National • Provincial	• leaflets • books • bulletin	Age, Completeness, Lack of local sources of data
ASCO	Geographical characteristics; Environmental constraints	• Local • Provincial • National	• tables • maps • reports	Age, Completeness, quality, reliability
IFAD	Agriculture	• Other	• maps	quality/Accuracy
Environment and Population Center	Post-UNCED; ICPD; population and Urban Environment	• Local • National	• reports	Age of data set, Completeness, Quality/Accuracy, Limited data
Zambia Survey Department	Base map; water and sewer lines	• local	• digital maps • utility maps	Age; completeness; limited coverage
Mines Department, Ministry of mines	Mining	• National	• reports	Completeness
Lusaka water & Sewerage Co. Ltd.	Lusaka topography; water pipelines; sewer pipelines; cadastre	• local	• maps • tables • graphs	Completeness; Accuracy
Central Statistics Office	Population, demographic agricultural, economics and environment	• local • National • Provincial	• reports • tables	Completeness
NCDP	Economics	• National	• reports	Completeness
Geological Survey	Geological	• National	• reports • maps	Completeness
National Parks and Wildlife	Wildlife, National Parks, Game Management Areas	• National	• reports • maps • tables	Completeness, Accuracy
Forestry Department	Forest Cover, Deforestation	• National • Provincial • Local	• reports	Age-completeness, Accuracy
MENR - PID	NEAP, ESP	• National	• reports	Age, Completeness
Energy Department	Energy resources, Biomass	• National • Provincial	• reports	Completeness; Quality/Accuracy
Department of Fisheries	Water pollution; food web; population dynamics	• National	• maps • tables • technical reports	Completeness; quality/Accuracy

Source: ECZ (1996):

“The Environmental Information Network and Monitoring System”. A Zambian program Proposal submitted by ECZ to World Bank for funding under Environmental Support Programme (ESP)

## 2.1 CENTRAL STATISTICAL OFFICE (CSO)

The need of collecting environment data became a reality in CSO when an Environment Statistics Unit was established in 1995. However, it lacked environmentally trained statisticians to run the unit. As a result training of the existing staff became a priority in 1996 and 1997. So far, the two professionals in the unit have attended training workshops organised by the Swedish International Development Agency (SIDA) In Harare (Zimbabwe) and Pretoria (South Africa). It is gratifying that the UNDP has come to our aid by offering a scholarship to the head of the unit for a Master of Science Degree in Environment Statistics. Hopefully, other donors will emulate the efforts of UNDP in future.

On the question of data collection, the unit is compiling various data items in readiness for publishing an environment statistics report. Specifically, the report will include the following data items:- water sources and quality; sulphur dioxide (SO<sub>2</sub>) emissions; soils; livestock; waste disposal sites; human settlements; fuelwood consumption; imports and exports of hazardous wastes; chemical fertilizers; electricity consumption; other sources of energy; fish stock; area under permanent crops (e.g. coffee, tea, cassava); incidence of environmentally related diseases; expenditure on water and air pollution control; weather and climate conditions; expenditure on disaster prevention and mitigation; use of agricultural pesticides; wildlife population in national parks; and other data items that might be useful for inclusion.

## 2.2 ENVIRONMENTAL COUNCIL OF ZAMBIA (ECZ)

The existing Data Bank in the ECZ is an important tool in the dissemination of environment information in Zambia. The World Bank, through the International Development Assistance (IDA) has already identified key environmental issues for support. This project will formally be instituted in 1998. Table 2 give a summary of priority issues selected for IDA support.

Projects that are being co-ordinated by ECZ generate very important environment information that is useful nationally. There are three major projects of such nature. These are:- (a) Lusaka Waste Management Plan, (b) Licensing Information System, and (c) Wetlands Management Program.

Currently, ECZ is in the process of preparing the state of Environment report which will be ready by early next year, 1998. Guidelines on how the report will be presented will be ready by the end of 1997. It is also envisaged that for the next 3 years, ECZ will be generating most of its data from inspections of companies/departments. A list of environmental indicators has been drafted by ECZ and awaiting approval by stakeholders. ECZ has also sponsored many localised studies in Zambia. Some of the important ones are: Kafue weed control study; climatic change study, hazardous waste management study; and Lukanga wetlands study.

Table 2: Priority issues selected for IDA support.

Environmental Issue Addressed	Environmental Concern	Specific Area	Data Centers	Data Inputs	Data Outputs	Key Users	Applications
Deforestation	Deforestation due to fuelwood gathering and charcoal production	Kabwe rural in Central Province	<ul style="list-style-type: none"> <li>• Forest department</li> <li>• Survey Department</li> <li>• Kabwe District Council</li> <li>• Lands Department</li> <li>• UNZA/NCSR</li> </ul>	<ul style="list-style-type: none"> <li>• Forest data</li> <li>• Aerial photographs</li> <li>• Satellite data</li> <li>• Research data</li> <li>• Lands/agriculture data</li> </ul>	<ul style="list-style-type: none"> <li>• Concessions management information system</li> <li>• Database of title deeds</li> <li>• Forest resource assessment</li> <li>• analysis of the rate of deforestation</li> </ul>	<ul style="list-style-type: none"> <li>• Forestry Department</li> <li>• Timber Association</li> <li>• District administration</li> <li>• ECZ</li> <li>• Department of Resettlement</li> <li>• Lands Department</li> </ul>	<ul style="list-style-type: none"> <li>• Allocating forest Concessions and Charging royalties</li> <li>• Drafting local Zoning by-laws</li> <li>• Project preparation</li> <li>• Lobbying against Detrimental land use Policies</li> </ul>
Water issues	Inadequate sanitation and water quality	Sanitation and water quality relationship in major urban areas - Lusaka	<ul style="list-style-type: none"> <li>• Water Affairs</li> <li>• Lusaka Water and Sewerage Company</li> <li>• Ministry of Health</li> <li>• LUDC</li> <li>• CSO</li> <li>• ECZ</li> </ul>	<ul style="list-style-type: none"> <li>• Water Resources data</li> <li>• Water quality data</li> </ul>	<ul style="list-style-type: none"> <li>• Water borne diseases data</li> </ul>	<ul style="list-style-type: none"> <li>• Lusaka Population data</li> </ul>	
Mining Issues	Air pollution in the copper mining towns	SO <sub>2</sub> Emissions pollution from Copper smelters-Kitwe	<ul style="list-style-type: none"> <li>• ZCCM</li> <li>• Mines Department</li> <li>• Kitwe City Council</li> <li>• Survey department</li> <li>• CSO</li> <li>• MOH</li> <li>• Forestry Department</li> <li>• UNZA or other</li> <li>• ECZ</li> </ul>	<ul style="list-style-type: none"> <li>• SO<sub>2</sub> data</li> <li>• Mines data</li> <li>• Cadastral data</li> </ul>	<ul style="list-style-type: none"> <li>• Population data</li> <li>• Upper-tract diseases data</li> </ul>	<ul style="list-style-type: none"> <li>• Forests data</li> </ul>	<ul style="list-style-type: none"> <li>• Air pollution research data</li> </ul>
Soil degradation	Soil erosion and over-grazing	Soil erosion and overgrazing in Lusitu, Southern province	<ul style="list-style-type: none"> <li>• Soil Survey Unit</li> <li>• SADP (District/Council)</li> <li>• SCAFP</li> <li>• CSO</li> <li>• UNZA or other</li> </ul>	<ul style="list-style-type: none"> <li>• Soils data</li> <li>• Pasture data</li> <li>• Livestock data</li> </ul>	<ul style="list-style-type: none"> <li>• Carrying capacity data</li> <li>• Overgrazing data</li> </ul>	<ul style="list-style-type: none"> <li>• Population data</li> </ul>	<ul style="list-style-type: none"> <li>• Soil erosion and over- Grazing research data</li> </ul>
Wildlife depletion	Wildlife depletion in National Parks	Wildlife depletion in Kafue National Park	<ul style="list-style-type: none"> <li>• Department of Parks and Wildlife</li> <li>• WWF</li> <li>• ZNTB</li> <li>• IUCN</li> <li>• UNZA or other</li> </ul>	<ul style="list-style-type: none"> <li>• Parks data</li> <li>• Wildlife population data</li> </ul>	<ul style="list-style-type: none"> <li>• Poaching data</li> </ul>	<ul style="list-style-type: none"> <li>• Wildlife depletion data</li> </ul>	

Source: ECZ (1996) :

"The Environmental Information Network and Monitoring System" A Zambian program proposal submitted by ECZ to World Bank for funding under Environmental Support Programme (ESP)

### 3. CONCLUSION

The application of environment statistics in planning and budgeting processes in Zambian companies and government ministries departments is becoming a reality. However, environment data generation has lagged behind other areas of statistics because of three major reasons. Firstly managers in environment sector have concentrated their energies on natural resources management without considering developing the information base. Secondly, very few professionals in Zambia are trained in environment statistics data handling. Thirdly, the lack of financial and material resources in the development of environment statistics has hampered the smooth flow of environment information. In some institutions with the capacity to generate environment data, such as National Council for Scientific Research (NCSR), Central Statistical Office (CSO) and the University of Zambia (UNZA), the financial constraint has been a major contributing factor to lack of environment information.

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