



REPUBLIC OF ZAMBIA

THE ENVIRONMENTAL INDICATOR DEVELOPMENT PROCESS THE CASE FOR ZAMBIA



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Indicator Development Process:

Zambia has made efforts towards environmental conservation by enacting regulations, plans and programmes. These include; the adoption and implementation of the National Conservation Strategy (NCS) in 1985, National Environmental Action Plan (NEAP) in 1994 and the Environmental Protection and Pollution Control Act (EPPCA) in 1990 which led to the establishment of the Environmental Council of Zambia (ECZ) in 1992 whose mandate is to regulate and coordinate environmental management for the sustainable development of our country. Zambia is in the process of developing a National Policy on Environmental (NPE) which is designed to create a comprehensive framework for effective natural resources utilization and environmental conservation which will be sensitive to the demands of sustainable development.

Recognizing that management and communication of environmental information is fundamental to sustainable development, the country has been engaged in a process of periodic production of the State of Environment (SoE) Outlook Reports. This provides for an assessment of the state of environment, monitor environmental trends and report so as to increase awareness and facilitate the measurement of progress towards sustainable development efforts. Three SoE Reports have been produced to date (1990, 1994 and 2000). The next report is due to be produced at the end of 2007. One of the key lessons learnt in the production of these reports was the need to produce a national set of environmental indicators and improve stakeholder participation in the environmental reporting process.

Zambia began the process of developing indicators at a stakeholders' consensus workshop in August 2002 at which a wish list of applicable indicators to be used in environmental reporting was discussed. It was also resolved that an environmental reporting framework that is used by the Southern Africa region DIPSIR framework be adopted so that the Zambian report can fit into the regional report.

However, it was later considered that, developing indicators required a process of progressing from the general framework and under-lying basic values, to priority issues, to issue-specific indicators and, finally, to concrete performance criteria and analysis.

To define the general framework, stakeholders in Zambia identified the themes and issues for the indicators; and that these would be used in the development of subsequent SoE outlook reports,. For the 2006 Zambia Environment Outlook report, the following themes were adopted:

1. Land
2. Atmosphere;

3. Settlement;
4. Socio-Economic Issues;
5. Mineral Resources;
6. Biodiversity;
7. Water Resources and
8. Cross-Cutting Issues such as HIV/AIDS, public awareness, Information and Communications Technologies and Gender.

Based on these themes, Seven (7) Technical Working Groups (TWGs) were formed. Members of the TWGs were drawn from a variety of disciplines and organizations. In order to build capacity, members of the TWGs were trained in indicator development and Integrated Environmental Assessment (IEA) and Reporting. Each TWG held a series of meetings, identified and prioritized issues for the 2006 Zambia Environment Outlook. The groups went further to develop indicators for each of the issues identified.

Challenges in collecting Environmental Indicators Data

Collecting of the Environmental Indicators data remains a big challenge for Zambia mainly because of the following:

- Central Statistics Office (CSO) is the only institution mandated to collect various statistical data, including environmental statistics. However, in Zambia, environmental statistics does not seem to be a major priority, and as such, CSO branch in charge of environmental statistics is not given adequate resources to carry out these activities. For Zambia only one publication on energy statistics has been produced and is yet to be published. Due to lack of funding, CSO is unable to carry out surveys on various environmental issues, and also lacks skilled manpower to carryout activities.
- The draft environmental indicators that have been prioritized for Zambia require strong stakeholder involvement, as some of the data will be collected by participating institutions, which are mostly government departments. These however face other challenges among them, lack of funding, lack of equipment such as GIS labs, lack of sufficient and skilled human resource.
- Institutional arrangement has been observed to be one of the major challenges. Certain institutions do not want to cooperate, even to release data that they have collected. Most institutions want to stick to their mandated activities.
- Absence of a Memorandum of Understanding (MoUs) for data sharing among institutions has been identified as a challenge. Many institutions will not release data unless they can be given something in return, e.g other form of data, or funding. Most institutions sell their data for cost recovery purposes, and they would not want to give it for free.
- Data standards and units in which data is collected, is an obvious challenge as different institutions involved collect data in a format that suits them. This usually brings up issues of data incompatibility.

Way forward:

A proposed way forward is that the AEIN process in the country must be strengthened. The AEIN process in Zambia has brought together a number of stakeholders from various sectors, that include government departments, the private sector, academic and research institutions who are the generators/collectors of different aspects of environmental data.

Among the responsibilities for AEIN in Zambia is to help resolve challenges being faced in the indicator development process and strengthen information sharing and networking in the country. These include establishment of the data standards, capacity building and resource mobilization to help institutions that are lacking. During a national stakeholders review workshop held in December 2006, for AEIN member institutions, the EnviroInfo database, a tool that has been customized from the DevInfo system was adopted as a system that could be used to collect and analyze the performance of environmental indicators for Zambia. This tool was developed using political boundaries, and is able to collect data up to ward level but it was felt that collecting data at such low levels will be very difficult and costly. The meeting resolved that for environmental indicators, Zambia will monitor these up to district level. This is in line with the additional activity of producing Integrated Environmental Assessment reports at district level. The data that is collected through the EnviroInfo can be linked to the respective MDGs and can easily be exported to GIS, Word or Excel applications for further analysis.

The EnviroInfo will also have a metadata that will have all necessary information on various indicators, information on who collects, the methodology used to collect, and the frequency of collection.

Sources and data Collection Times:

- The SOE reports are produced every 5 years, therefore, most data for this activity will be collected for in that period.
- The License Information System, a system that ECZ uses to monitor licensed industries has a collection of most pollution data, as discharged by industries. This has been a good source for indicators on pollution, and thus provides a good source of data. This is populated once every 6 months.
- EnviroInfo will be another source of data, as it has a collection of all adopted environmental indicators. This will update once every year.
- The environmental statistics publications will be another good source of data, and these are likely to be updated on yearly basis.
- Most social economics data will be collected from various reports published by CSO.
- Various stakeholders that have been incorporated in the indicators development process will be a source of data collected from their mandated sector

List members of the Technical Working Groups (TWGs)

The following institutions participated in the indicator development process through the following Technical Working Groups;

WATER

Department of Water Affairs
National institute for industrial and Scientific Research (NISIR)
University of Zambia (UNZA, School of Mines)
National Water and Sanitation Council (NWASCO)
Riverine Development Associates

MINERAL RESOURCES

National institute for industrial and Scientific Research (NISIR)
Mines Safety Department (MSD)
Zambia Association of Manufacturers (ZAM)
Zambia Geological Survey

LAND

UNZA-School of Natural Sciences
Chemical Society of Zambia
Mt. Makulu Research Centre
Department of Survey

ATMOSPHERIC ISSUES

Alfred Knight
Meteorological Department
University of Zambia
Factories Department

BIODIVERSITY

Forestry Department, Ministry of Environment and Natural Resources
Zambia Wildlife Authority (ZAWA)
Fisheries Department
Ministry of Tourism Environment and Natural Resources (MTENR)

SETTLEMENT ISSUES

NISIR
TDAU –UNZA
ZCCM-Investment Holdings
Institute of Waste Management
Lusaka City Council (LCC)

SOCIO ECONOMIC ISSUES

Central Statistical Office (CSO)
WWF-Zambia Education Programme

UNZA-Department of Economics
Jesuit Centre for Theological Reflection (JCTR)

List of Environmental Indicators:

Issue	Indicator	Frequency	Collection Method	Limitations	Source
INDICATORS ON WATER					
Water availability	<ul style="list-style-type: none"> • Internal renewable water resources available per capita or per year, D • Amount of water abstracted in particular sectors (e.g. agriculture, domestic, industrial), P • change in ecosystem processes, P • change in amount of rainfall over a period of time (30 or 60 years), P • Internal renewable water resources available per capita or per year, S • Freshwater available for use (household, agriculture, industry, etc), S • Percentage of population with water supply, S • Percentage of degraded wetlands, S • Urban/rural water supply, R • Annual water use/consumption (per capita/per day), R 				
Water Accessibility	<ul style="list-style-type: none"> • Percentage of population with access to safe drinking water. D • Amount of water consumed by industries and agricultural sectors. D • Distance to sources of safe drinking water. D • Percentage of population with access to water. P • Water loss in catchment areas. P • Amount of surface and ground water abstracted. P • Percentage of population with access to water. S • Water use per capita, S • Percentage of rivers dammed or with abstraction schemes in place, S 				

	<ul style="list-style-type: none"> • Change in area of irrigated land, I • Change in productivity of irrigated arable land, I • Ratio of crop production to annual water volumes available, I • Number of water related conflicts, I • Improved drinking water coverage - total population (urban, peri-urban and rural), R • Number (density) of borehole per capita unit area (rural), R • Number of dams constructed, R 				
Water Quality	<ul style="list-style-type: none"> • Discharge of organic water pollutants into aquatic environments - BOD and COD. D • Discharge of heavy metals into aquatic environments (Manganese, Lead). D • Amount of mine discharges, D • Discharge of organic water pollutants into aquatic environments - BOD and COD. P • Number and types of industries along major water sources. P • Number of people affected by waterborne diseases. S • Area or number of rivers/streams silted. S 				

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