THE ROLE OF LIBRARIES AND INFORMATION SERVICES IN ENSURING ENVIRONMENTAL SUSTAINABILITY

Irene Godfrey Lungu
and
Benson Njobvu

ABSTRACT

Environmental sustainability has been recognised as an integral and key pillar of sustainable development. Millennium Development Goal (MDG-7)-ensure environmental sustainability calls on countries to “reverse the losses of environmental resources” by 2015. Decision makers at all levels are faced with choices regarding the use of natural resources and the environmental impacts of development projects and policies.

MDG-7 is committed to reducing by half the numbers of people without access to safe drinking water; improving the lives of at least 100,000 slum dwellers; and reversing the loss of environmental resources.

Achieving progress towards MDG7 entails examining human welfare and ecosystem health, as well as the interrelationship between the two. The challenge in implementing the Millennium Declaration warns that if we do not act to contain existing environmental damage and mitigate future harm, we will inflict irreversible damage on the ecosystems that support human life, livelihoods, and wellbeing, and thus compromise our ability to achieve other MDGs, particularly efforts to reduce poverty and hunger.

In view of this, provision of information on the state of the environment and its interactions is critical in helping decision makers develop sound policies that can ensure environmental sustainability. In order for different sectors of society to appreciate and mitigate possible environmental impacts, access to reliable environmental information is vital. The paper will therefore explore some of the challenges of ensuring environmental sustainability in Zambia. It will answer questions such as; are libraries playing a role in ensuring environmental sustainability? What information related initiatives exist that libraries are using or should utilise? What is the future role of libraries and information services in responding to the increasing demand for environmental information and calls for environmental sustainability at national and international levels? The experi-

ences of an environmental agency, Environmental Council of Zambia (ECZ) in the provision of environmental information services will be highlighted.

MDGs therefore, serve as the new framework for sustainable development by setting social equity goals and targets that aim at contributing to economic development. Libraries should therefore, play an active in achieving these targets.

Keywords: Environmental Information Management, Sustainable Development, Zambia

1. INTRODUCTION

There has been growing global concern and awareness on environmental issues since the first United Nations Conference on the Environment held in Stockholm in 1972. The focus over the years has been on sustainable development.

Sustainable Development is defined as ‘development that meets the needs of present generation without compromising the ability of future generations to meet their own needs’. (WCED; 1987, 43)

Sustainable development is therefore, a process of change in which the exploitation of natural Resources, the direction of investments, the orientation of technological development and institutional change are made consistent with both the current and future potential to meet human needs. There are a number of initiatives at global and regional levels aimed at addressing challenges sustainable development.

In 1985, African environment ministers met in Cairo, Egypt to lay the foundation for the African Ministerial Conference on the Environment (AMCEN), the supreme continental forum responsible for articulating authoritative perspectives on environment in Africa. During the 9th session of AMCEN held in Kampala in July 2002, inadequate information and data were recognized as a major constraint to strategic environmental management planning and implementation of programmes in Africa. The meeting highlighted serious gaps in existing information as well as inadequacies in capacities to sustain a process of this nature. AMCEN called on African governments to commission initiatives to establish specific needs in this regard. They also called on the international community to assist African countries in their efforts to gain access to new technologies, particularly Information and Communication Technologies (ICTs) and to create

conditions for the development of indigenous technologies that are important for enhancing economic development.(UNEP, 2003;2)

There are a number of initiatives at global and regional levels aimed at addressing challenges identified by AMCEN. Among these, is the implementation of a capacity building strategy for Integrated Environmental Assessment (IEA) at global and regional levels by the United Nations Environment Programme (UNEP), whose mission is to provide leadership and encourage partnership in caring for the environment.

At sub-regional level, institutions such as the Southern African Research and Documentation Centre-Musokotwane Environment Resource Centre for Southern Africa (SARDC-IMERCSA) has been guiding environmental reporting. As part of the IEA reporting process, SARDC developed environmental indicators with a focus on Southern Africa in order to improve IEA reporting practices, better delivery of environment information and enhanced regional integration of the environment sector.

Environmental sustainability has been recognised as an integral and key pillar of sustainable development. One of these is the formulation of the Millennium Development Goals (MDGs). The Seventh Millennium Development Goal (MDG)-ensure environmental sustainability calls on countries to “reverse the losses of environmental resources” by 2015. Decision makers at all levels are faced with choices regarding the use of natural resources and the environmental impacts of development projects and policies. Specifically, it seeks to ensure environmental sustainability in order to:

- Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources.
- Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.
- Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.
- By 2020, to have achieved a significant improvement in the lives of at least 100 million slum-dwellers.
- (GRZ, 2004,26)

Achieving progress towards MDG7 entails examining human welfare and ecosystem health, as well as the interrelationship between the two. The challenge in

implementing the Millennium Declaration warns that if we do not act to contain existing environmental damage and mitigate future harm, we will inflict irreversible damage on the ecosystems that support human life, livelihoods, and wellbeing, and thus compromise our ability to achieve other MDGs, particularly efforts to reduce poverty and hunger.

At the centre of the global, regional and national targets is the need to provide information that will enable decision makers formulate sound policies and actions that can benefit the majority of the people.

2. Africa Environment Information Network (AEIN)

The Africa Environment Information Network (AEIN) is an initiative that is being used to enhance information provision that can support sustainable development. AEIN is a multi-stakeholder capacity building process that aims to harness and enhance access to information and knowledge to support the management of Africa's environmental resources as assets for sustainable development. The goal is to strengthen the capacity of African countries to use good quality information on environmental assets to make informed investment choices at sub national and national levels, and manage these assets on a sustainable basis.

Implementation of AEIN commenced in 2004 on a pilot basis in 11 countries. In Southern Africa, Zambia and Lesotho were the two pilot countries. Others were Ghana, Ethiopia, Mauritius, Seychelles, Tunisia, Egypt, Gabon, Uganda and Cameroon. Prior to this, the earliest formalised environmental information exchange mechanism was the Infoterra network established in 1974. The main purpose of the network was to disseminate information and catalyse the exchange of environmental data and information. The Infoterra network structure was designed around a system of national focal points, usually located in the principal environmental authority of each country. Even at this early stage it was recognised that a broad-based information service could not be provided by a single institutional provider, irrespective of how comprehensive and authoritative the data and information resources of that provider may be.

Also, early experiences with environmental information showed that some of the greatest challenges related to organisational issues, rather than the technical or technological aspects of producing the information. The underlying difficulty arises from the fact that "source information" needed for the production of information to support environmental policy and management practices is multi-

disciplinary in nature, comes in different formats, and needs to be “adjusted” to fit each other to generate new information.

AEIN has been firmly anchored on the highest African environmental policy platform, African Ministerial Conference on Environment (AMCEN). It sets the stage for providing inputs into the sustainable development policy framework as articulated by African leaders under the New Partnership for Africa’s Development (NEPAD).

AEIN is conceived as an integrated framework programme to strengthen institutional capacities in managing and using information related to sustainable development. It addresses specific capacity building needs in Africa for the effective implementation of national, sub-regional, regional and global assessment and reporting processes in order to:

- Strengthen capacity at the national level for managing and using information on environmental assets in such a manner as to emphasise opportunities for sustainable economic exploitation;
- Strengthen capacity for regular integrated environmental assessments and the production of national State of Environment (SoE) reports, thematic sub-regional environmental reports, and provide inputs for production of the AEO and Global Environment Outlook (GEO) report series; and
- Strengthen the information base and infrastructure to enhance country negotiation status with respect to its assets within the context of multi-lateral environmental conventions, and reporting on the various conventions that African countries have acceded to;
- Facilitate access to environmental information to enhance public participation and in environmental governance.

(UNEP, 2003; 21)

3. SUSTAINABLE DEVELOPMENT EFFORTS IN ZAMBIA

Zambia has abundant natural resources such as minerals, arable land, water, and bio-diversity resources. It has however, become increasingly clear that economic and social wellbeing are mutually reinforcing. As a result, we cannot pursue one at the expense of the other. Economic prosperity provides opportunities and resources that government needs to reduce poverty and improve people’s access to basic social services such as education and health. Improved social conditions

and food security are also essential for sustainable economic development and environmental wellbeing.

The following are some of the global challenges to sustainable environmental protection and utilisation:

- Unsustainable use of natural resources.
- Weak institutional capacity to enforce environmental laws and to coordinate trans-boundary natural resources management efforts.
- Weak mechanisms for encouraging genuine participation of communities and the private sector in Environment.
- Natural Resource Management (ENRM)
- Limited provision of environmental information to support decision making at various levels.

In Zambia, like in any other developing nation, issues relating to the sustainable use of natural resources have become cornerstones for economic development. In this regard, government has established legal and institutional frameworks to guide environmental management in the country by enacting regulations, plans and programmes. These include; the National Conservation Strategy (NCS) of 1985, National Environmental Action Plan (NEAP) of 1994 and Environmental Protection and Pollution Control Act (EPPCA) of 1990 which led to the subsequent establishment of the Environmental Council of Zambia (ECZ). 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.

In order to achieve an integrated approach to the use and management of natural resources, Government has developed a National Policy on Environment (NPE). The main purpose of the policy is to ensure that socio-economic development will be achieved effectively without damaging the integrity of the environment or its resources.

In addition to this, the Fifth National Development Plan (FNDP), 2006-2011 is a guide to the country's development efforts over the medium and long-term period. The FNDP is an important vehicle towards the realization of the Vision 2030 in which government has articulated long-term development objectives and identified a number of development goals. The FNDP has acknowledged the weak management capacity at provincial, district and sub-district levels and

suggests the need for capacity building at these levels. Improved environmental management at the local level will enhance the participation of those whose livelihoods are dependent upon the sustainable management of renewable natural resources.

The MDGs have also added significant impetus to government's efforts and programmes intended to improve people's living conditions, especially in addressing the plight of the poor. The MDGs have helped to strengthen the nation's aspirations sought through such interventions as the implementation of the FNDP and NPE.

Government recognises that achieving sustainable development in Zambia requires access to data and information so that those involved in decision making can reach the level of knowledge and understanding needed for successful programme planning and service delivery.

In doing so, an assessment of national assessment of Environmental Information Systems (EIS) and network was conducted by ECZ in 2006. The purpose of the assessment was to provide technical support to the relevant national institution(s) in identifying and implementing interventions necessary for strengthening existing capacities for managing and improving access to environmental information for decision-making.

The major findings of the study showed that:

- There were previous efforts in environmental information systems such as the Environmental Information Network Management System (EINMS)
- Involvement of other national organisations in data collecting data is important.
- Environmental data exists in various formats and in some cases, not easily transferable.
- Capacity building issues: sharing information, skills/ areas need to be updated.
- Standards and protocols need to be established in order to guide the information sector.

The study further concluded that the institutional frameworks for environmental information sharing/exchange did not exist. However, the efforts of the AEIN initiative would assist in addressing this challenge.

4. Experiences of ECZ in Environmental Information Management

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

The mission of ECZ is to safeguard human health and the environment through effective environmental management to provide for present and future generations

ECZ was therefore created to provide leadership in environmental management and protection of natural resources. This entails working closely with all stakeholders involved in the use and exploitation of natural resources. The ability to communicate is essential to the success of any undertaking and an important factor in the achievement of its objectives recognizes that management and communication of environmental information is fundamental to changing attitudes, equipping individuals and communities with knowledge of the environment, and ensuring their involvement in providing solutions to environmental problems. In other words, effective environmental information is necessary to enabling knowledge, reflection and action which have become necessary pre-conditions for thoughtful action in dealing with issues of sustainable development.

The following key functions of the ECZ define their role in environmental information as follows;

- Monitoring trends in the use of natural resources and their impact on the environment
- Requesting information on the quality, quantity and management methods of natural resources and environmental conditions in Zambia
- Advising on all matters relating to environmental conservation, protection and pollution control, including necessary policies, research investigations and training

Within the EPPCA, ECZ has a clear mandate to coordinate environmental information management for purposes of producing State of Environment (SoE) report and other products to the public. In order to achieve this task, the organisation provides leadership in environmental data collection, management and analysis. These tasks require internal capacity in environmental information

management as well as provide external capacity and collaborative tools and mechanism to external data generators and users. In order to achieve this objective, the need to streamline the collection, processing, dissemination and use of environmental information in the country was identified.

ECZ's efforts in information management started when the institution was created. One of critical areas was the need for a data bank of national resources that contained data and information about the environment and natural resources in Zambia. ECZ has an information management unit with Geographic Information Systems (GIS) and Remote sensing capabilities.

Further, ECZ set up a library in 1994 to support operations of the Inspectorate. The Library comprised of a small collection of books and magazines. Over the years however, demand for access to environmental information through library services from stakeholders and members of the public has continued to grow. This led to ECZ constructing a purpose built Information and Documentation Centre (IDC) in 2003 whose mission is to

“to collect, organise and disseminate environmental information to promote effective environmental management in Zambia”.

The Centre has a collection of various environmental literature sourced internally and externally. The IDC also supports the Environmental Impact Assessment (EIA) public review process by providing access to EIA reports that are advertised for comments by stakeholders and the general public. This way, interested and affected parties have a chance to be informed and input into proposed development projects before it takes place.

The Centre has over 4,000 books and journals and visual materials on various environmental issues. Since environmental information deals with complex, scientific, technological, economic and social problems which impact the environment in one way and another, the collection include materials on Land and Agriculture, Biodiversity, Fisheries, Forestry, Wildlife, Pesticides and Toxic Substances. Adequate study area, office space as well as room for book shelves, circulation, Internet, photocopying and audio-visual services is provided for users.

A survey conducted among users of the IDC revealed that reference services which includes consulting materials as well as members of staff were more preferred at 41percent followed by current awareness service and Internet services

at 23percent and 15percent respectively. The study further showed that IDC was used study space.

Regarding the proposals for additional services to be introduced in the IDC, 48percent indicated that they would be happy if the IDC introduced a lending service; 22percent electronic resources and 12percent interlibrary loans. 18percent) users said a website should be developed where users could be able to access some of the required documents. (ECZ; 2008,16).

Figure 1: Usage of services provided by the ECZ IDC

ECZ and Zambia Consolidated Copper Mines Investment Holdings (ZCCM-IH) has been implementing the Copperbelt Environment Project (CEP). The objectives of the project are to assists the Government of Zambia:

- a) to implement through ZCCM-IH and GRZ a set of environmental and social mitigation measures, to address environmental liabilities remaining with ZCCM-IH following the privatisation of mining assets, including the closure and decommissioning of mines; and
- b) Strengthen the capacity of concerned GRZ agencies, including the ECZ, to enforce environmental regulations applicable to the mining sector.

As part of implementation of the CEP, Public libraries managed by the Local Authorities have been supported and transformed into Environmental Public Information Centres (EPICs). Refurbishment and purchase of information materials have been conducted for public libraries in Kabwe, Kitwe and Mufulira. The three libraries were selected in line with the objectives of the CEP which are to:

- a. to implement through ZCCM-IH and GRZ a set of environmental and social mitigation measures, to address environmental liabilities remaining with ZCCM-IH following the privatisation of mining assets, including the closure and decommissioning of mines; and
- b. Strengthen the capacity of concerned GRZ agencies, including the ECZ, to enforce environmental regulations applicable to the mining sector. (ZCCM-IH;2002,26)

Apart from collecting information on general subject areas, the EPICs collect information materials on environment related issues. In addition, Environmental Impact Assessment (EIA) reports on proposed projects in these towns are availed to members of the public for review through these centres. The environmental problems experienced in these towns such as air pollution demand action from mining companies and relevant agencies in order to safeguard human health and the environment. The establishment of EPICs is one avenue of increasing access to environmental information to stakeholders and members of the public. Usage of services provided by the EPICs had generally increased.

5. The need for libraries to respond to the increasing demand for environmental information and calls for environmental sustainability at national and international levels

The central purpose of libraries is to provide a service: access to information (Chisenga; 2004, 2), and modern information and communication technologies, especially computers, information networks and software applications, are making it possible for libraries to provide a variety of library and information services to their clients.

From the 1990s, the development and use of information and communication technology (ICT) for academic and other purpose increased at a phenomenal rate. Networking has made resource location and sharing of knowledge easier and quicker. Development of electronic networking for resource sharing among African libraries appears more important now. Other aspects that should be considered are those of appropriate partnership and understandings at a local and regional level.

In this regard, information workers must organise reliable communication networks, educate the young people and also fulfil the needs of people. All libraries-University libraries, research, documentation centres, public and school libraries should all serve as centres for the dissemination of recorded information to their client groups in support of education, culture, science, economic development, social well-being and innovation.

Taking into account the rate at which innovative use of ICTs is being introduced and the ever declining costs of ICT facilities, it will not be long before libraries also start using such services as satellite technologies to deliver information services to their clients located in remote and inaccessible areas. A survey among ECZ clients showed that the most preferred services were lending services and electronic services. By demanding provision of electronic information, this demonstrates that user's adaptation to ICTs.

Figure 2: Introduction of new services in the IDC

ICTs provide libraries with opportunities to:

- Organize information for use
- Provide value added ICT-based information services
- Library cooperation and resource sharing
- Management information systems
- Institutional repositories (digital local content)
- Capacity building

The greatest challenge facing libraries today is how to provide increased, effective, efficient and sustainable information services and access to a wide variety of information and knowledge resources on the face of reduced funding. Introduction and use of ICT facilities in libraries depends on adequate funding for hardware, software purchase and licence fees, and maintenance contracts, upgrading of hardware and software systems, telecommunications, and subscriptions costs to e-resources.

It is with doubt that environmental issues continue to receive more attention in many countries Zambia inclusive. There is a greater concern for community and stakeholder involvement in environmental management. However, in order to the community to actively participate in environmental management, there is need for provision of relevant information to support decision making at various levels. For ECZ, this has been done in various ways as demonstrated in the various initiatives highlighted in this paper among them, the AEIN, public awareness activities, SoE, GIS and library services provided through the Information and Documentation Centre (IDC).

6. Conclusion

The role of environmental information in the quest for sustainable development cannot be over emphasised. The key to the concept of environmental information sharing/exchange is dependant on the mandate and the capacity of various institutions to carry that mandate.

AEIN is designed to provide a broad a framework for the effective harnessing of information and knowledge on environmental resources, and how people are affected by changes in the environment. This knowledge will be channeled into decision-making processes, particularly within the framework of national socio-economic development priorities, as well as the implementation of the MDGs.

Since their establishment in 2000, the MDGs have become a universally shared framework for development. They are a means for developing countries and their development partners to assess their ability to work together to reach meaningful targets in key areas. Governments, United Nations agencies and other international organizations, and major civil society groups are actively using the MDGs as benchmarks for their development efforts.

ECZ has been undertaking environmental education and public awareness activities. One way of doing, ECZ operates the IDC; a centre specialized in environmental information. In addition, ECZ has been promoting environmental information management initiatives in Zambia such as the AEIN. Implementation of programmes such as CEP has resulted in provision of support to libraries already existing libraries in Kabwe, Kitwe and Mufulira. There is need to improve access to environmental information for the Zambian community. Access to development-oriented information resources that are widely shared at all levels of society is important. This will empower citizens to act responsibly at their respective levels of decision-making, and thereby promote effective management of environmental assets for sustainable development. In order for the country to meet the MDGs targets, there is need for to provide relevant information to support their implementation. Libraries therefore, play a critical role in the provision of information in the country.

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