Libraries and Information Services

Towards the Attainment of the UN Millennium Development Goals

Edited by
Benson Njobvu and Sjoerd Koopman

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International Federation of Library Associations and Institutions

Fédération Internationale des Associations de Bibliothécaires et des Bibliothèques

Internationaler Verband der bibliothekarischen Vereine und Institutionen

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IFLA (The International Federation of Library Associations and Institutions) is the leading international body representing the interests of library and information services and their users. It is the global voice of the library and information profession.

IFLA provides information specialists throughout the world with a forum for exchanging ideas and promoting international cooperation, research, and development in all fields of library activity and information service. IFLA is one of the means through which libraries, information centres, and information professionals worldwide can formulate their goals, exert their influence as a group, protect their interests, and find solutions to global problems.

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PREFACE

The high poverty levels in most countries in East, Central and Southern Africa send a message to the general populace that it is no longer up to the governments alone to find ways of abetting it, but that organizations such as libraries in various countries need to join the fight.

It is now public knowledge that social and political systems are likely to perform more efficiently if there exist in the systems mechanisms for ensuring that the functions and tasks of gainful decision making, effective problem solving, planning, minimizing the chances of unnecessary duplication of effort, promotion of innovative ideas are supported by the provision to all those participating in and contributing to the development process with relevant, up to date and reliable information. Libraries are well placed to provide these functions.

Since the declaration of the Millennium Development Goals (MDGs) by the United Nations (UN) in 2002, various organisations and institutions have had to reposition themselves in order to effectively contribute to the achievement of the MDGs. Libraries in East, Central and Southern Africa, recognising the growing appreciation within public policy that current socio-economic problems can no longer be addressed by one sector alone and that libraries are perfectly positioned to act as agents of socio-economic changes, have seen the need to be part and parcel of the forces ensuring that the MDGs are attained by 2015.

Achievement of the MDGs requires concerted efforts from all stakeholders, including governments, the international community and the civil society. It is therefore imperative that libraries and information centres in Africa plan to actively contribute to the attainment of the MDGs.

The papers in this book underscore the need for libraries to ensure that they participate in achieving the eight Millennium Development Goals which include:

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria, and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development

We would like to express our sincere gratitude to the Zambia Library Association for successfully hosting the XVIII SCECSAL Conference from 15–18 July 2008 held in Lusaka Zambia.

Special thanks also to all authors who agreed that their articles be published in this book. We are indebted to the International Federation of Library Associations and Institutions (IFLA) for funding the publication of these articles which were carefully selected from papers presented during the conference.

Thank you very much for the good work (English), Dzikomo kwambiri pa nchito yabwino yamene mwachita (Cicewa), Asanteni sana kwa kazi nzuri, (Swahiri), ke leboha haholo ka mosebetsi o motle (Sesotho), Enkosi kakhulu ngomsebenzi omhle, (IsiXhosa), ke lebogela tiro ya lona e ntle (Tsetswana).

Benson Njobvu
Editor

ABBREVIATIONS AND ACRONYMS

ABC	Australian Broadcasting Corporation
ABIPs	Agribusiness Information Points
AEIN	Africa Environment Information Network
AEO	Association for Enterprise Opportunity
AI	Artificial intelligence
AIDS	Acquired Immunity Deficiency Syndrome
AMCEN	African Ministerial Conference on the Environment
ARVs	Anti-retroviral drugs
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
ASDS	The Agricultural Sector Development Strategy
CBU	Copperbelt University
CEP	Copperbelt Environmental Project
CI	Communication and Information
CIAT	International Center for Tropical Agriculture
CLAES	Egyptian Central Laboratory for Agricultural Expert Systems
CODATA	Committee on Data for Science and Technology
DFID	Department for International Development
DRC	Democratic Republic of Congo
ECA	Economic Commission for Africa
ECZ	Environmental Council of Zambia
EIA	Environmental Impact Assessment
eIFL	Electronic Information for Libraries
EINMS	Environmental Information Network Management System
EIS	Environmental Information Systems
EKM	Environmental Knowledge Management
EMS	Environmental management System
ENRM	Natural Resource Management
EPAs	Economic Partnership Agreements
EPICs	Environmental Public Information Centres
EPPCA	Environmental Protection and Pollution Control Act
ESP	Environmental Support Programme
FAO	Food and Agricultural Organization
FNDP	Fifth National Development Plan
FOSS	Free and open-source software

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GEO	Global Environment Outlook
GII	Global Information Infrastucture
GIS	Geographical Information Systems
GPS	Global Positioning Systems
HIPC	Heavily Indebted Poor Countries
HIV	Human Immuno-deficiency Virus
IC	intellectual capital
ICT	Information Communication Technology
ICTs	Information Communication Technologies
IDC	Information and Documentation Centre
IDRC	International Development Research Centre
IEA	Integrated Environmental Assessment
IFAP	Information for All Programme
IFLA	International Federation of Library Associations and Institutions
IICD	International Institute for Communication and Development
IK	Indigenous Knowledge
IKS	Indigenous Knowledge Systems
IMERCSA	Musokotwane Environment Resource Centre for Southern Africa
ITDG	Intermediate Technology Development Group
KM	Knowledge Management
LDC	Least Developed Countries
LIS	Library and Information Services
MLAs	Main lines of action
MDGs	Millennium Development Goals
MICs	Market Information Centres
MIPs	Market Information Points
MISTOWA	Market Information Systems and Traders' Organizations of West Africa
MOE	Ministry of Education
MTS	Medium-Term Strategy
NAADS	National Agricultural Advisory Services
NAZ	National Archives of Zambia
NCS	National Conservation Strategy
NEAP	National Environmental Action Plan

NEPAD	New Partnership for Africa's Development
NGOs	Non-governmental Organizations
NISIRIS	National Institute for Scientific and Industrial Research Information System
NLP	National Library Policy
NPE	National Policy on Environment
NSGRP	National Strategy for Growth and Reduction Poverty
NUC	National Union Catalogue
OARE	Online Access to Research on the Environment
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
PDAs	Personal Digital Assistants
SADC	Southern Africa Development Community
SADCC	Southern Africa Development Coordinating Conference
SARDC	Southern Africa Research and Documentation Centre
SCECSAL	Standing Conference of Eastern, Central and Southern African Library and Information Associations
SMS	Short Message Service
SoE	State of Environment
SSA	Sub-Saharan Africa
TV	Television
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Program
UNEP	United Nations Environment Programme
UNESCO	United Nations Education Scientific and Cultural Organization
UNZA	University of Zambia
URT	United Republic of Tanzania
USA	United States of America
USAID	United States Agency for International Development
VERCON	Virtual Extension and Research Communication Network
WECD	World Commission on Environment and Development
WOUGNET	Women of Uganda Network
WSIS	World Summit on the Information Society

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ZALICO   Zambian Library Consortium
ZCCM-IH   Zambia Consolidated Copper Mines Investment Holdings
ZLA   Zambia Library Association
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LIBRARIES AND INFORMATION SERVICE IN FACILITATING KNOWLEDGE PRODUCTION AND MANAGEMENT FOR THE MILLENNIUM DEVELOPMENT GOALS

Andrew M. Kaniki

Abstract

All types of libraries and information services particularly those of the developing countries of Africa are often questioned about their efficacy in contributing towards the reduction of poverty, improving the living conditions of its people and development in general. The millennium development goals (MDG) have been identified by African countries including those of east, central and southern African region "…as a tool within their wider development planning framework… to end the tragic conditions in which so many Africans are deprived of their basic human rights, such as health, education, shelter and security…as tools for coordinating development policy, within broader development priorities, [Africa through the MDGs] …can tackle the extreme poverty that is hobbling [its] people, make…countries more productive and reduce the risk of conflict" (Economic Commission for Africa, 2005). The complexity of the development issues to be addressed in the MDG requires manipulation and combination of existing varied knowledge and production of new knowledge. The knowledge produced and available both locally and internationally must be appropriately used to make meaningful contribution to a country or community. Knowledge management facilitates knowledge production and utilization. This keynote paper identifies opportunities for and challenges African libraries and information services' role in knowledge production and knowledge management in contributing to achieving the millennium development goals.

1. Introduction

It has been eight years since the Millennium Development Goals (MDGs) were adopted by the United Nations at the Millennium summit "…as a tool within their wider development planning framework in order to end the tragic conditions in which so many Africans are deprived of their basic human rights, such as health, education, shelter and security. By making the Goals work as tools for coordinating development policy, within broader development priorities, Afri-

can leaders can tackle the extreme poverty that is hobbling their people, make their countries more productive and reduce the risk of conflict" (Economic Commission for Africa, 2005:1). Individual countries have from time to time been monitoring and reviewing the extent to which they are meeting these goals. Specific sectors in African countries and continent generally should also monitor and in effect chart their contributions to meeting the millennium development goals.

The library and information services sector particularly in Africa is often questioned about its efficacy in contributing to the reduction of poverty, improving the living conditions of its people, supporting human rights and development in general. The millennium development goals provide a framework for libraries and information services to develop and align their strategies and assess their contribution towards their countries, and African development in general. It is therefore most fitting that the theme of this year's Standing Conference of the Eastern, Central and Southern African Librarians (SCESAL*) Libraries and Information Services towards the Attainment of the Millennium Development Goals (MDGs)*" is rooted in the Millennium Development Goals.

The complexity of the development issues that the MDGs framework aims to address requires a variety of resources and inputs. Apart from the financial and material resources, a manipulation and combination of existing knowledge its component parts, information and data, the production of new knowledge and skilled human resources to facilitate the use of this knowledge are critical to achieving the MDGs. While knowledge has been vital all along – in previous eras, trade secrets inventions or other pieces of highly valuable business knowledge could yield a competitive edge that would endure for many years. However, today, "knowledge edge" has a much shorter life span. Therefore, to facilitate efficient and effective knowledge generation and utilization and gain competitive edge over a country's own national development challenges and over other countries requires an environment in which creating knowledge, managing its transfer and its application or use is efficiently and effectively done. To do this requires knowledge management. Libraries deal with and manage intangible resources, namely:

- knowledge and its constituent parts, information and data,

- their (knowledge) artifacts (or carriers) and

- skills to facilitate their use.

This paper addresses challenges and opportunities of all types of African libraries and information services' – in effect their role in contributing to meeting the millennium development goals. It addresses the role that African libraries, librarians and information specialists can and should play in facilitating the production and management of knowledge – both the so called-scientific and indigenous knowledge for meeting the MDGs.

One is aware from the programme of this conference that several papers will discuss in more specific and detailed form some of the issues that this paper will only provoke and or simply touch on. It is hoped however, that this paper will also raise issues that may not necessarily have been addressed in the papers that will follow, but that can be used for discussions in various groupings at this conference, other future for a, and among individual libraries and information services themselves as they set their strategies.

2. Millennium Development Goals

The theme of this conference is rooted in the millennium development goals. One therefore anticipates that several papers will address and expound on these goals in varied detail. However, in order to contextualize this paper, it is necessary to highlight the key elements of the MDGs before proceeding to discuss the role of libraries and information service in knowledge production and management for meeting these goals.

In 2000 the United Nationals adopted the millennium declaration which established eight goals – that is, the Millennium Development Goals – each with quantified targets and forty-eight (48) related indicators, to be achieved by 2015. The goals and their targets (in alphabetical bullets below) are aimed at:

   i.   Eradicating extreme poverty and hunger:
      a. Reduce by half the proportion of people living on less than a dollar a day;
      b. Reduce by half the proportion of people who suffer from hunger
  ii.   Achieving universal primary education:
      a. Ensure that all boys and girls complete a full course of primary schooling
 iii.   Promoting gender equality and empowering women:
      a. Eliminate gender disparity in primary and secondary education preferably by 2005, and at all levels by 2015

iv.   Reducing child mortality:
      a. Reduce by two thirds the mortality rate among children under five
v.   Improving maternal health:
      a. Reduce by three quarters the maternal mortality ratio
vi.   Combating HIV/Aids, malaria and other diseases:
      a. Halt and begin to reverse the spread of HIV/AIDS;
      b. Halt and begin to reverse the incidence of malaria and other major diseases
vii. Ensuring environmental sustainability:
      a. Integrate the principles of sustainable development into country policies and programmes;
      b. reverse loss of environmental resources;
      c. Reduce by half the proportion of people without sustainable access to safe drinking water;
      d. Achieve significant improvement in lives of at least 100 million slum dwellers, by 2020
viii. Developing a global partnership for development:
      a. Develop further an open, rule-based, predictable, non-discriminatory trading and financial system;
      b. Includes a commitment to good governance, development, and poverty reduction — both nationally and internationally;
      c. Address the special needs of the least developed countries Includes: tariff and quota free access for least developed countries' exports;
      d. enhanced programme of debt relief for Heavily Indebted Poor Countries (HIPCs) and cancellation of official bilateral debt; and more generous Official Development Assistance (ODA) for countries committed to poverty reduction;
      e. Address the special needs of landlocked countries and small island developing States;
      f. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term;
      g. In cooperation with developing countries, develop and implement strategies for decent and productive work for youth;
      h. In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries;
      i. In cooperation with the private sector, make available the benefits of new technologies, especially information and communications

These are very complex development issues. It is acknowledge that libraries and information services, and librarians and information specialists in themselves are unlikely to eradicate extreme poverty; achieve universal primary education; reduce child mortality or develop global partnership. It can also be equally argued that however-many millions of Euros or American dollars are "thrown" at these eight challenges they will not in themselves achieve the goals. These goals require integrated, multi-resourced and multifaceted solutions. Important among the key resources for addressing the millennium development goals are appropriate knowledge and its constituent components, namely, information and data.

Two of the key challenges identified in the report to the Dutch government on *Mobilizing knowledge to achieve the millennium development goals* (2005: 1) are:

i. Lack of capacity for knowledge-based development in the South: The report argues that the need to help build and strengthen capacities and infrastructure for MDG-related knowledge production in the developing world is of paramount importance and should be at the centre of the government's research aid policy;

ii. The gap between the production and the use of knowledge: That is, there is a gap between the production and the use of knowledge in policy and practice. This, the report argues, is due to weak linkages between knowledge producers and knowledge users, and between knowledge production and innovation. The report further argues that knowledge networks are an important vehicle for involving people from different disciplines, institutions and sectors in the production and application of knowledge, and for creating dynamic linkages in the knowledge and innovation system.

Knowledge [information and data] as indicated above is the key resource that libraries and information services work with. While there is existing knowledge and or solutions to development some of the challenges posed by the MDGs, new knowledge and solutions must be produced and or manipulated to deal with these challenges. Furthermore, progress towards meeting these development goals must be closely monitored and reported on.

3. Knowledge production and knowledge management

It is now universally accepted that in today's knowledge society and global economy "…the sources of productivity, competitiveness [and solutions for de-

velopment challenges] are increasingly dependent upon [quality and appropriate] knowledge and information…" (Bawa and Mouton 2000: 296). Quality and appropriate knowledge, research or knowledge production which is defined by the Organization for Economic Cooperation and Development (OECD) Frascati Manual (2002:30) as "…creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man [in collective sense], culture and society, and the use of this stock of knowledge to devise new applications". Knowledge includes theories, practical everyday rules and instructions for action. It is used to explain phenomena, understand the world and at the more practical level, solve problems and or deal with challenges of the world. Knowledge is an accumulation of data and information.

To better appreciate the arguments advanced in this paper, it is necessary to briefly define and discuss the two constituent components of knowledge, namely, data and information. Data are the foundation of knowledge. They are a set of symbols to which rules of syntax are applied. Data are observable facts of a situation or ingredients that make up an event. They are unstructured, isolated, and context independent, but they are capable of being integrated within a particular context. When data are contextualized, they are converted into information.

Information is defined as ideas, imaginative works of the mind, and data of value that are potentially useful in decision making, question answering, and problem solving. Information makes one aware of the application of available data. The acquisition of information and its appropriate application can lead a person to a state of knowledge. Being informed is central to the generation of new knowledge, or the understanding of a particular situation.

In a paper presented at the *International Symposium on Open access and the public domain in digital data and information for science* this author explained that "When information is transferred from source to recipient, or seller to buyer, it remains available to both". (Kaniki: 2004: 81) Unlike the sale of a material product, an information transfer does not give the recipient the right of exclusive use, nor are there usually any effective ways of barring deliberate sharing of the information, in spite of intellectual property rights such as copyrights, patents, trademarks, and related regulations. Information is usually only wanted because it potentially contributes to someone's activity; it is rarely required for itself alone.

In the same paper just referred to above, this author went on to further argue that: "…Unlike information and data, knowledge is bound to individuals. It is constructed by individuals and represents their beliefs and causal relationships. Therefore, knowledge is dynamic; it is fluid and ever-changing. There is a lot of it that is intuitive and mutable. It is expressed through use in a moment of making a decision, teaching, or learning. Knowledge can often be captured and structured.

In research or knowledge production, data, information, and knowledge are complementary and depend on each other. The availability of relevant data that can be appropriately contextualized is crucial to knowledge production. Knowledge, on the other hand, provides a person who has the know-how, [the] ability, and skill to make judgments and act on given problems" (Kaniki: 2004: 82)

It must be pointed out that knowledge that is not used and optimized for solving problems and or generating new solutions is less useful. Knowledge optimization in part amounts to the production and or refining knowledge to address local issues, like those reflected in the MDGs. An effective knowledge production process requires an awareness of who is doing what, what kind of research or knowledge is being produced within a particular field and the data and knowledge that have been generated. In other words, optimization of explicit knowledge can be achieved through a consolidation of and making knowledge artefacts, data and information resources available, accessible and usable. It means an efficient and effective management of records, documents and information, and their use. This process is one of the traditional and major activities of library and information services. Optimization of knowledge is further enhanced through the creation of communities of practice, expert networks and learning environments with systems and processes that facilitate the holding and sharing of knowledge, and allows the knowledge to grow. This requires change in values and attitudes of members of a given community, country and the continent. The application of varied media, including information and communication technologies is essential in facilitating and promoting organizational, community and country effectiveness in knowledge optimization. In essence all these component parts constitute what we refer to as knowledge management.

Snowden (1999: 8-9) has defined knowledge management as the "identification, optimization and active management of intellectual assets, [that are] either in the form of explicit knowledge held in artefacts or as tacit knowledge possessed by individuals or communities … developing a body methods, tools, techniques and values through which organizations can acquire, develop, measure, distribute

provide a return on intellectual assets. The building blocks of knowledge management involves setting knowledge goals for the organization or community within which the knowledge management will take place. Community or organizational knowledge goals are determined by the environment within which the organization, community and or country operate and they or must be based on the organizational and or community knowledge and information needs. Once knowledge goals have been set, the six (6) core processes of knowledge management, namely, knowledge Identification; knowledge acquisition; knowledge development; knowledge sharing and distribution; knowledge utilization; and knowledge retention can take root and executed. It must be stated that while these knowledge management processes are standard, each organization and or community will interpret and emphasize them differently. For example at the National research Foundation (NRF) in South Africa knowledge management processes been defined as:

  i.   [Knowledge Identification]: Establishment and maintenance of internal and external data and information picture – analyzing and describing organization's knowledge environment (internal and external);

 ii.   [Knowledge Acquisition]: Acquisition of and access to data and information – communities, organizations and institution in the course of doing business "import" knowledge from outside and or they may not necessarily have the capacity to store everything, but access remotely;

iii.   [Knowledge Development]: Data curation, archiving and transformation – may include generation of new skills, better ideas, new ways of doing things – complements knowledge acquisition

 iv.   [Knowledge sharing]: Knowledge sharing and distribution – communities of practice – this is a vital precondition for turning isolated information or experiences into something that the whole organization or community can use – who should know how much and how can it be facilitated?

  v.   [Knowledge Utilization and Retention]: Use and retention of knowledge assets – Records and documents management – the selective retention of information, documents and experiences (corporate memory!)

While the execution and implementation of knowledge management processes is systematic, the process is not linear. As knowledge processes are executed within an organization, community or country, the outcomes need to be assessed

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(knowledge assessment) and fed back into the process of redefining and or re-confirming knowledge goals.

It is this author's strong contention that knowledge management and its processes enhance and facilitate the knowledge production. In the natural sciences for example astronomy, the generation and sharing of new data, combination of these new and old data provide new interpretations and understanding of the galaxy. The need for a virtual observatory for the study of astronomy is considered critical. As the Committee on Data for Science and Technology (CO-DATA) as argued, large-scale data and information collections open new avenues for research and development based on the completeness and quality of the collections" (CODATA: 2004:12). Increasingly more and more research facilities are maintain research data repositories that researchers can access, conduct further secondary data analysis and or combine with other new data to generate to interpretations and knowledge. Traditionally, it has been accepted that awareness and understanding of the state of knowledge on a particular problem, or in a field is a pre-requisite for developing new insights and solutions to the problem(s). Libraries and information services are well positions to support and facilitate process.

4. What challenges, opportunities and role for meeting MDGs?

Scholars in development studies and some of us who simply flirt with development issues agree that development is a complex process. There are no simple and straightforward solutions to development. It is for this reason that there are no simple solutions to MDGs. However, all of us should also agree that every sector of society has a role to play in development and by extension, contribute to the MDGs. Each sector should identify and coordinate opportunities and its niche for contributing to development and MDGs. As indicated earlier, MDGs should be used "…as a tool within their wider development planning framework in order to end the tragic conditions in which so many Africans are deprived of their basic human rights … [they should] work as tools for coordinating development policy, within broader development priorities…".

It is perhaps worthwhile beginning this section of challenges, opportunities and the role that libraries can play, with a simple but challenging question to all sub-sectors (i.e. public, university, national, school, special libraries) of the library and information services sector represented at this conference: How many libraries keep or have access to information and data on the Millennium Development Goals, its targets and indicators? Perhaps this is where all libraries should begin

– by identifying the availability, collecting and or providing access to data and information about the MDGs at appropriate levels of complexity and need.

Although of course the development of information and communication technologies (ICTs) is providing easy remote access to resource for some through the use of the internet, it is also a known fact that a number of countries and or institutions face challenges of connectivity. Where problems of connectivity exists alternative means such as the use of CD-Rom for distribution of data and information should be explored.

Interventions such as MDGs create a lot of expectations and attract a lot of country and world resources. They therefore require monitoring and evaluation to ascertain whether or not they are indeed making a meaningful difference. Monitoring and evaluation frameworks and processes require that goals, objectives, and targets are clearly defined and appropriate indicators identified. The Millennium Development Goals have done this. However, reliable and accurate data (of outputs and outcomes) on the indicators must be collected regularly. Researchers and general users must access these data, they must be analysed from time to time to assess the progress being made about specific goals and targets, and after a concerted period, an assessment of the impact of the intervention can be determined. Through this process we can learn lessons about our communities and countries, and as indicated above new knowledge can be generated to address similar problems that may affect other parts of our own societies and those that are similar to us. In this respect one is bound to ask: to what extent do different types of libraries and information services in Africa facilitate access to the data required for monitoring and evaluation of the progress and impact of MDG activities?

The article by Forsyth (2005) entitled: *Public libraries and the millennium development goals* is very instructive. Although devoted to public libraries, it is this authors view that most of the issues and suggestions she raises, and the "framework" she generated and used to assess contribution, can be extended and adapted to all types of libraries. It is worth borrowing her table below of the roles that libraries can play in their communities [using communities in the wider context] and their relevance to the MDGs.

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Table1: Summary of Library roles and the Millennium Development Goals
(Forsyth 2005: 321)

Community roles Millennium goals	**Millennium goals**
Community information Goals	i-viii
Local studies Goals	i-viii
Story telling Goals	i-viii
Health information Goals	I, ii, iv, v, vi, viii
Legal information Goals	Iii, vii, viii
Community space Goals	i-viii
Access to books and other printed matter Goals	i-viii
Access to audio-visual material Goals	i-viii
Meeting spaces Goals	i-viii
Literacy training Goals	Ii, iii, vi, vii, viii
Access to librarians Goals	i-viii
Safe place to go Goals	i-viii
Makers of cultural records Goals	I, iii, iv, v, vi, vii, viii
Preservers of cultural records Goals	I, iii, iv, v, vi, vii, viii
Social inclusion Goals	i-viii
Learning the fun of reading Goals	Ii, iii, vii, viii
PC access (Internet/databases/e-mail/word processing)	i-viii
Employment opportunities Goal 3	Iii
Environmental information Goals 7, 8	Vii, viii

In discussing the linkage between knowledge and information, it was stated that being informed leads one to a state of knowing – that is having the know-how and or ability to generate innovate ways of addressing challenges similar like those posed by the millennium development goals. Libraries and information services through the knowledge management framework and processes should

facilitate knowledge acquisition and utilization. To be competitive, knowledge needs to be quickly utilized.

To address the knowledge gap referred to in the report to Dutch government above and effectively address MDGs may entail knowledge sharing and learning from the lessons of other. The ECA report on the progress and challenges that African countries have made and faced respectively, in addressing the MDGs states that fourteen (14) African among the 30 managed to reduce poverty by 25%. (ECA. 2005: 5) The immediate question one would ask is how did they do it? Do libraries in these countries have information and lessons as to how these reductions where achieved? How best can libraries and information services facilitate the sharing of knowledge and or sharing of lessons?

5. Conclusion

The African continent faces major development challenges. These are reflected in the Millennium Development Goals that also in effect provide a framework for addressing development challenges. While it is acknowledged that MDGs pose complex challenges that require existing and new knowledge, libraries and information services have a unique advantage to facilitate knowledge production and its use. To facilitate efficient and effective knowledge generation and utilization and gain competitive edge over a country's own national development challenges and over other countries requires an environment in which creating knowledge, managing its transfer and its application or use is efficiently and effectively done.Through knowledge management processes and ethos libraries and information services can facilitate effective knowledge optimization. African Library and information service should review and as much as possible realign their strategies with the MDGs in order to be relevant!

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MDGS, WSIS, UNESCO'S MTS AND IFAP: ALPHABET SOUP OR OPPORTUNITIES FOR LIBRARIES?

Peter Johan Lor

Abstract

The United Nations Millennium declaration of 2002 set eight Millennium Development Goals (MDGs) to be achieved by 2015. The MDGs are laudable and widely cited in other international documents. Library and information workers, seeking to make libraries relevant to national development, have asked themselves how libraries can contribute to the attainment of the MDGs. In 2003 and 2005, the two-phase World Summit on the Information Society took place. As part of a growing Civil Society movement, librarians, led by IFLA, participated and advocated actively in WSIS. As a result the WSIS outcomes documents contained positive language about the role of libraries in the information society. The action lines identified in the Geneva Plan of action are now being followed up by IFLA and other stakeholders.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) is taking the lead in facilitating the follow-up of the WSIS action lines that are most relevant to libraries. This paper analyses the place of libraries in the "overarching objectives" and "strategic programme objectives" set out in UNESCO's Medium-Term Strategy (MTS) for the period 2008-2013. The programme and budget of UNESCO's Major programme for Communication and Information (CI) for the biennium 2008-2009 is also analysed, as is a draft strategic plan drawn up for UNESCO's Information for All Programme (IFAP). The analysis focuses on the degree to which the role of libraries is recognized in these documents.

The findings suggest that librarians should not take UNESCO's support for granted. It remains worthwhile for the library profession to engage with UNESCO, but intensive advocacy will be needed to ensure that libraries stake out the central ground in the information or knowledge society.

Keywords: millennium development goals, WSIS, action lines, UNESCO, strategies, IFAP, libraries

1. Introduction

At any given time several major summits, aiming to develop strategies to make the world a better place, are being planned, held or followed up. All of them end with declarations, goals, targets and/or action plans. The United Nations Millennium declaration of 2002 set eight Millennium Development Goals to be achieved by 2015. Not long after, in 2003 and 2005, the two-phase World Summit on the Information Society took place. For librarians the theme of this Summit was much closer to home. One of the outcomes of the World Summit was the *Geneva Principles and Plan of action* (WSIS 2003). This document included eleven "action lines", several of which are very relevant to libraries.

The United Nations agency with which librarians most closely identify, and which has played a major role in library development worldwide is the United Nations Educational, Scientific and Cultural Organization, UNESCO. UNESCO is taking the lead in facilitating the follow-up of six of the eleven WSIS action lines, including those most relevant to libraries. Can UNESCO provide the necessary international leadership to ensure that significant progress is made on these action lines? Will UNESCO's activities in following up the action lines also highlight the role of libraries? What should the library community do to ensure that this role is recognized and that libraries are more centrally placed by the time the MDGs and the WSIS process are evaluated in 2015? In an attempt to answer these questions I review the place of libraries in the "overarching objectives" and "strategic programme objectives" set out in UNESCO's Medium-Term Strategy (MTS) for the period 2008-2013 and in the programme and budget of UNESCO's Major programme for Communication and Information (CI) for the biennium 2008-2009 before focusing on the potential role of UNESCO's Information for All Programme (IFAP).

2. The Millennium development goals

The Millennium Development Goals (MDGs) are based on the eight chapters of the United Nations Millennium Declaration (United Nations 2000), adopted at the United Nations Millennium Summit, held from 6 to 8 September 2000. There are eight goals:

1. Eradicate *extreme poverty* and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce *child mortality*

5. Improve maternal health
6. Combat HIV/AIDS, malaria, and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development

For each of the goals one or more specific targets are set, 21 in all. For example, under goal 5, there are two:

5. Improve maternal health
   - Reduce by three quarters, between 1990 and 2015, the *maternal mortality* ratio.
   - Achieve, by 2015, universal access to *reproductive health*

The MDGs are laudable and widely cited in other international documents. Library and information workers, seeking to make libraries relevant to national development, have also paid attention to them, asking themselves: how can libraries contribute to the attainment of the MDGs? This is a difficult question. While information is clearly relevant to the attainment of such goals, it is difficult to separate the contribution made by libraries from the many other factors that contribute to success. An example is reducing the maternal mortality ratio. Community libraries can contribute to the attainment of this target by providing health information and conducting awareness-raising activities, but many other factors have to be put in place for the target to be attained. If the target is attained, it will be very difficult to quantify exactly what the library's contribution will have been.

The last of the six targets cited under MDG 8, appears most directly relevant to libraries:

"In cooperation with the private sector, make available the benefits of new technologies, especially information and communications".

However it would seem that the emphasis here is on technology rather than on content. For libraries to be relevant the focus has to shift from the technology to the social and cultural dimensions.

3. The World Summit on the Information Society

In 2003 and 2005, not long after the MDGs were launched, the two-phase World Summit on the Information Society took place. The first phase was held in Ge-

neva on 10-12 December 2003 and the second phase in Tunis on 16-18 November 2005. During the Geneva phase the broad themes concerning the Information Society were discussed and two documents, a *Declaration of Principles* and a *Plan of Action* were prepared and adopted (WSIS 2003). For librarians the theme of this Summit was much closer to home. As part of a growing Civil Society movement, librarians, led by the International Federation of Library Associations and Institutions (IFLA), participated and advocated actively in WSIS. Their exertions were rewarded by the inclusion in the outcomes documents of positive language about the role of libraries in the information society. In the *Tunis Agenda for the Information Society* (WSIS 2005), the key concluding document of the Tunis Summit, there is a strong statement on the role of libraries. In par. 90 the document reaffirms a commitment to "providing equitable access to information and knowledge for all" and to using ICTs as development tools by:

> k. *supporting educational, scientific, and cultural institutions*, including libraries, archives and museums, in their role of developing, providing equitable, open and affordable access to, and preserving, diverse and varied content, including in digital form, to support informal and formal education, research and innovation; and in particular supporting libraries in their public service role of providing free and equitable access to information and of improving ICT literacy and community connectivity, particularly in underserved communities;

But the difficult part only begins after the delegations have made their final speeches and the exhibitors clear their stands. Following up positive statements made about libraries in the action lines requires patience and perseverance. From IFLA's perspective there are currently two main lines of follow-up of the WSIS summits. One concerns the Internet governance issue and the setting up of the Internet Governance Forum. Initially IFLA's approach was to lend its voice to other Civil Society groups that stand for a transparent, accountable, multistakeholder approach to Internet governance. More recently it has become clear that the Internet Governance Forum has become the focal point for a more dynamic and comprehensive process. IFLA is now playing a more active role here. However, the main thrust of IFLA's advocacy has concerned the eleven action lines described in the Geneva *Plan of action* (WSIS 2003:16-27).

Briefly, the eleven action lines are as follows. For each of the action lines a set of actions has been identified. Those most relevant to libraries are summarised or cited here:

C1[1] **The role of governments and all stakeholders in the promotion of ICTs for development**. This covers such aspects as the development of national e-strategies for the Information Society through participation by all stakeholders, public/private partnerships, ICT policies of international organisations, and finance and investment policies to promote ICTs.

C2 **Information and communication infrastructure: an essential foundation for the Information Society**. This covers such aspects as the roll-out of ICT connectivity to schools, libraries and other agencies, developing broadband networks, and access for disadvantaged groups.

C3 **Access to information and knowledge**. This action line is highly relevant to libraries. It covers policies relating to public domain information, legislation promoting access to information, research and development to facilitate accessibility of ICTs, community public access points (including such access in libraries), alternative software models (proprietary, open-source and free software), open access journals and books, open archives for scientific information, encouraging research on the Information Society, and supporting research and development on different software models and licences. One of the actions envisaged (par. 10 (h)) is the development of digital public library and archives services, to which end national library strategies should be reviewed, a global understanding of "hybrid libraries" is to be promoted and worldwide cooperation between libraries is to be fostered.

C4 **Capacity building**. This covers skills needed for the Information Society, including literacy and "ICT literacy", the use of libraries in e-literacy work, removal of gender barriers, training of ICT staff, empowerment of local communities as well as nomadic and indigenous peoples to use ICTs, the use of ICTs in education (e-learning), developing distance learning, and the use of ICTs in the training of such groups as librarians and archivists..

C5 **Building confidence and security in the use of ICTs**. This concerns such issues as data and network integrity and security, combating cyber-

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[1] All the action lines are listed in Section C of the *Geneva Plan of Action*. This has led to them being referred to as C1, C2, C3, etc. The numbers alone will do, but the practice of prefixing them by the letter C is now so ingrained internationally that it is followed here.

crime and spam, promoting awareness of online privacy, consumer protection, and secure online transactions.

C6 **Enabling environment**. This includes actions that governments should take to create an appropriate environment to maximise the social, economic and environmental benefits of the Information Society, including the development of a "framework for the secure storage and archiv[ing]of documents and other electronic records of information" (par. 13(h)). It also includes the Geneva Summit's request to the UN Secretary General to set up a working group on Internet governance (par. 13(b)).

C7 **ICT applications: benefits in all aspects of life**. This proposes actions in relation to e-government, e-business, e-health, e-employment, e-environment, e-agriculture and e-science. (E-learning is covered by C4.)

C8 **Cultural diversity and identity, linguistic diversity and local content**. This action line is concerned with policies and actions to promote respect for cultural identity, traditions and religions and dialogue among cultures as a factor in sustainable development. Libraries feature quite prominently in several actions, including the role of libraries in providing access to content and indigenous knowledge. By implication there are also roles for libraries in respect of other actions, for example in preserving documentary heritage, promoting cultural diversity, supporting local content development, acting as content providers, and enhancing the capacity of indigenous peoples to develop content in their own languages.

C9 **Media**. This covers various aspects of the role of the media (print, broadcast and new media) in the development of the Information Society, including the combating of illegal and harmful content.

C10 **Ethical dimensions of the Information Society**. This covers actions intended to promote the common good (respect for peace, freedom, tolerance) and the protection of privacy and personal data, and to prevent abusive use of ICTs.

C11 **International and regional cooperation**. This deals with aspects such as the priority of ICT projects in development aid, the mainstreaming

of ICTs in the programmes of international and national aid agencies, and development of public/private partnerships.

The eleven action lines provide the main focus for attempts to give concrete effect to all the well-meaning rhetoric of the WSIS process. For each action line a UN organisation (e.g. ITU or UNESCO) has been appointed as "facilitator" or "moderator". Various "facilitation" and consultation meetings have taken place to set the follow-up activities in motion. IFLA has allocated priorities to each of the action lines, and is concentrating on the action lines that it has prioritised, namely:

Highest priority:
    C3   Access to information and knowledge
High priority:
    C1   Promotion of ICTs for development
    C4   Capacity building
    C8   Cultural diversity & identity, linguistic diversity and local content
    C10 Ethical dimensions of the Information Society
Medium priority
    C7   ICT applications (some of these are allocated a high priority, e.g. e-Science)

Some of these action lines have been subdivided into sub-groups or sub-themes, each with its own sub-moderator. IFLA has been appointed as the moderator of the sub-theme "Libraries and Archives" in Action Line C3, and the sub-theme "Memory and Heritage" in Action Line C8.

In 2006 IFLA set up a working group, designated as the President-elect's Information Society Working Group (now the President's Information Society Working Group), to keep abreast of progress in respect of the action lines and other important issues (such as Internet governance) arising from WSIS, but not limited to it. The Working Group met at the 2006 and 2007 IFLA congresses and has set up a discussion list to enhance information sharing and networking among its members.

3. The role of UNESCO

The United Nations agency with which librarians most closely identify, and which has played a major role in library development worldwide is the United Nations Educational, Scientific and Cultural Organization, UNESCO. UNESCO

is taking the lead in facilitating the follow-up of five of the eleven WSIS action lines, including those most relevant to libraries (C3, C7 e-learning, C7 e-science, C8, C9 and C10). The rest of this paper is devoted to an analysis of the place of libraries in UNESCO programmes.

3.1 Background on UNESCO

To understand what follows, it is useful to have some background on UNESCO. UNESCO's general policy and strategies are set by a biennial meeting of all its member states, known as the General Conference. An Executive Board of 58 member states is elected by the General Assembly. It is responsible *inter alia* for overseeing the management of UNESCO between the General Conferences. These bodies, as well as the Intergovernmental Council and Bureau that are referred to later, are made up of persons serving not as individuals but as accredited representatives of their governments. Many are career diplomats.

The staff establishment of UNESCO is known as the Secretariat and is headed by a chief executive known as the Director-General, currently Koïchiro Matsuura. UNESCO is organized into five "major programmes", also referred to as "sectors". Each major programme is headed by an Assistant Director General. For each of the major programmes there is a Commission which meets during the biennial General Conference:

I   Education (ED Commission)
II   Natural Sciences (SC Commission)
III Social and Human Sciences (SHS Commission)
IV Culture (CLT Commission)
V   Communication and Information (CI Commission)

Each of the major programmes has a number of divisions. One of these is of particular interest to librarians: the Information Society Division, which is part of the Communication and Information major programme. In addition to the major programmes there are also some specialised units, such as the UNESCO Institute for Statistics.

UNESCO has a six-year strategic planning cycle. A Medium Term Strategy (MTS) is approved every six years by the General Conference. Within the six years of the MTS there are three budgeting cycles of two years each. For each two-year period (known as a biennium) a programme and budget is drawn up for approval by the respective commissions and the General Conference.

UNESCO'S Medium Term Strategy (MTS)

UNESCO's MTS for 2008-2013 (UNESCO 2008b) should be considered in its broader strategic context, which I have recently described elsewhere (Lor 2007). For our purposes it is important to note that UNESCO sees itself as a laboratory of ideas, standard-setter, clearing house, capacity-builder in member states, and as a catalyst for international cooperation. These are considered to be UNESCO's five established functions (UNESCO 2008b:7).

For 2008–2013 UNESCO has prioritised Africa and gender equality in all its fields of competence. In Africa UNESCO will support the implementation of the action plans of the African Union and the New Partnership for Africa's Development (NEPAD). During this period UNESCO will also prioritise youth, the least developed countries (LDCs), and small island developing states (SIDS).

For the period of this MTS UNESCO has identified a number of "global challenges and opportunities for UNESCO's action" that affect UNESCO's strategic priorities. The most important in our context is globalisation, which implies inter alia contributing to:

- the MDGs of the 2000 Millennium Declaration, the themes and languages of which are constantly echoed in all of UNESCO's current policy and planning documents

- the recommendations of the World Summit on the Information Society

- the Education for All (EFA) goals. (The EFA was an outcome of the 1990 World Conference on Education for All. UNESCO is responsible for coordinating this movement (UNESCO 2007b).)

Of particular relevance to our profession is that UNESCO has identified "building knowledge societies based on the principles of freedom of expression, universal access to information and knowledge, promotion of cultural diversity, and equal access to quality education" as one of its global challenges in the strategic context for this MTS (UNESCO 2008b:11).

There is also more emphasis on the coordinated action of United Nations agencies, and greater accountability and effectiveness. Accordingly, the MTS adopts a "programme-based approach". Five strategic "overarching objectives" are used to structure the strategy. The overarching objectives are translated into 14 more concrete "strategic programme objectives", all but one of which are sub-

sumed under an overarching objective. The overarching objectives and the corresponding strategic programme objectives (UNESCO 2008b:16-31) are set out in Table 1.

Table 1: UNESCO's "Overarching Objectives" and corresponding "Strategic Programme Objectives"

Overarching objectives	Strategic programme objectives
Attaining quality education for all and lifelong learning	1. Strengthening UNESCO's global lead and co-ordinating role for EFA and providing support for national leadership in favour of EFA. 2. Developing policies, capacities and tools for quality education for all and lifelong learning as well as promoting education for sustainable development.
Mobilising scientific knowledge and policy for sustainable development	3. Leveraging scientific knowledge for the benefit of the environment and the management of natural resources. 4. Fostering policies and capacity-building in science, technology and innovation. 5. Contributing to disaster preparedness and mitigation.
Addressing emerging social and ethical challenges	6. Promoting principles, practices and ethical norms relevant for scientific and technological development. 7. Enhancing research-policy linkages on social transformations. 8. Fostering research on critical emerging ethical and social issues.
Fostering cultural diversity, intercultural dialogue and a culture of peace	9. Strengthening the contribution of culture to sustainable development. 10. Demonstrating the importance of exchange and dialogue among cultures to social cohesion and reconciliation in order to develop a culture of peace. 11. Sustainably protecting and enhancing cultural heritage.

Overarching objectives	Strategic programme objectives
Building inclusive knowledge societies through information and communication	12. Enhancing universal access to information and knowledge. 13. Fostering pluralistic free and independent media and infostructures.

There is a fourteenth strategic programme objective which transcends the five overarching objectives, namely "Support through UNESCO's domains to countries in post-conflict situations and post-disaster situations" (UNESCO 2008b:31-32).

The five "overarching objectives" correspond more or less to UNESCO's five major programmes. Cynically one might say that in spite of the elaborate conceptualisation, not much has changed.

3.2   Libraries in the MTS for 2008-2013

A detailed analysis of how libraries feature in the MTS (cf. Lor 2007) is beyond the scope of this paper. Librarians would argue that not one of the 14 strategic programme objectives can be successfully pursued without support from library and information services. However, in some of the strategic programme objectives libraries are barely mentioned, if at all. This is generally true of strategic programme objectives 1 to 8, which happen to fall under the first three overarching objectives. For example, in the context of Education for All (EFA) in strategic programme objective 1 no mention is made of school libraries or of the role of libraries in literacy. There are many more examples of a failure to see libraries as part of the solutions that are being sought.

Libraries are generally more relevant to the remaining strategic programme objectives 9-13, which fall under the last two overarching objectives, Culture, and Communication and Information. In some of these strategic programme objectives libraries are explicitly mentioned, in others they are not. For example, in strategic programme objective 9: *Strengthening the contribution of culture to sustainable development,* the Memory of the World programme is mentioned in the context of "capacity building to create, preserve and provide access to diverse cultural contents" (UNESCO 2008b:26). However, libraries as such are mentioned neither here nor in strategic programme objective 11: *Sustainably protecting and enhancing cultural heritage*. This is concerned with immovable

heritage and movable cultural property but, while reference is made to the role of museums, neither libraries nor archives are mentioned.

Under overarching objective 5, *Building inclusive knowledge societies through information and communication*, mention is made of UNESCO's aims to "consolidate and put into practice its concept of knowledge societies that are inclusive, pluralistic, equitable, open and participatory" and to ensure "broader access to scientific and technical knowledge" (UNESCO 2008b:29). Libraries are highly relevant to these aims, which are developed in two strategic programme objectives, numbers 12 and 13.

Strategic programme objective 12: *Enhancing universal access to information and knowledge* is the most relevant to libraries. A number of themes are featured which are of great interest to our profession:

- the provision of equitable, appropriate and affordable access to information

- freedom of expression and the right to information

- building the capacities of information professionals to create, disseminate and preserve information and knowledge

- building the capacities of users to access, analyse and evaluate information,

- building information-literate communities

- increasing opportunities for marginalised and disadvantaged groups

- promoting diversity of information sources in all languages

- preservation and dissemination of various forms of cultural expression

The Information for All Programme (IFAP) is referred to here, but although at the country level "community access facilities, including community media" are envisaged, the L-word (library) does not occur. Rather, the emphasis is on "media and information networks" (UNESCO 2008b:30).

In strategic programme objective 13: *Fostering pluralistic free and independent media and infostructures* there is again much emphasis on media and ICTs. However, library and information services are specifically referred to in the context of building infostructures:

UNESCO will enhance its emphasis on establishing infostructures, including the promotion of library and information services, with a focus on building digital libraries and the role of archives and records management services. Such mechanisms contribute to democratic practices, accountability and good governance, providing citizens with access to official information. (UNESCO 2008b:31).

While it is gratifying to see a specific reference to libraries and information services here, it must be noted that UNESCO's focus is very much on the more glamorous development of *digital* libraries.

Generally it is disappointing that not much is said in the Medium-Term Strategy about libraries as central agencies in the coming knowledge societies. When libraries are mentioned, it is often incidentally. The only time libraries generate any sort of excitement is when digital libraries are mentioned. There is also not much about open access. Generally, in spite of a declared intention to follow up the WSIS action lines for which UNESCO has assumed ownership, the strategic programme objectives show insufficient evidence of serious engagement with these action lines.

3.3 Programme and budget for the Major Programme for Communication and Information

When it comes to giving practical effect to the MTS, we need to consider the programmes and budgets for the five major programmes. These are prepared, debated and implemented biennially. Since the MTS is for six years, during this period there will be three programmes and budgets, for 2008-2009, 2010-2011 and 2012-2013. Here I briefly consider UNESCO's programme and budget for the biennium 2008-2009 (UNESCO 2008a). It translates the overarching objectives and strategic programme objectives of the Medium-Term Strategy into biennial sectoral priorities for each major programme. The biennial sectoral priorities are then developed into a limited number of main lines of action (MLAs). In an effort to concentrate and focus on UNESCO's core strengths the programme and budget has significantly reduced the overall number of MLAs for the period 2008-2009 compared to earlier years. Although, as indicated earlier, all five major programmes have relevance for libraries, this discussion is limited to the Major Programme for Communication and Information (CI)

For 2008-2009 two biennial sectoral priorities were set for Major Programme V, Communication and Information (CI):

1. Fostering free, independent and pluralistic communication and universal access to information (principal priority)
2. Promoting innovative applications of ICTs for sustainable development (priority 2) (UNESCO 2008a:157-158, 165)

In an earlier version of this document (UNESCO 2007a) six MLAs appeared, four for Biennial Sectoral Priority 1 and two for Biennial Sectoral Priority 2. However, in the version as approved, these have been conflated, leaving four MLAs shared between the two biennial sectoral priorities. For each MLA a set of "expected results at the end of the biennium" is stated, and for each of these a set of performance indicators is given. In Table 2 the MLAs and their expected results (UNESCO 2008a: 168-172) are listed.

Table 2: Main lines of action for Major Programme V and corresponding expected results

Main lines of action (MLA)	Expected results
1. Promoting an enabling environment for freedom of expression and freedom of information	* Awareness of freedom of expression as a basic human right increased and related internationally recognized legal, ethical and professional standards applied * Public service broadcasting enhanced, and editorial independence and diverse and responsive programming fostered to facilitate good governance
2. Fostering universal access to information and the development of infostructures	* UNESCO policy frameworks for universal access to and preservation of information established * International multi-stakeholder partnerships for enhancing universal access to information fostered * Information management structures to support sustainable development strengthened * Strategies and practices for ICT in support of knowledge creation, acquisition and sharing in

Main lines of action (MLA)	Expected results
	the field of education, the sciences and culture developed in consultation with the media
3. Promoting the development of free, independent and pluralistic media and community participation in sustainable development through community media	* Development of free, independent and pluralistic media fostered, particularly by increasing capacities of media training institutions to offer high-quality training * Community radio and community multimedia centres fostered as catalysing tools for community "voice" and people-centred development * United Nations inter-agency collaboration in communication for sustainable development strengthened * Media literacy and civic participation in media enhanced
4. Strengthening the role of communication and information in fostering mutual understanding, peace and reconciliation, particularly in open- and post-conflict areas	* Assistance provided to create an enabling environment for free and independent media and to build the capacity of media and ICTs in countries in transition and post-conflict situations within the perspective of fostering governance and democracy * Media and ICTs encouraged to contribute to building peace, facilitating dialogue, fostering cultural diversity and safeguarding intangible memory

Since Africa is regarded as an "overarching global priority", there is an additional section entitled "Addressing the needs of Africa", for which the following expected results are listed:

- Information policy frameworks for universal access to information established, and advice given for the adaptation of media laws to international standards

- ICT competencies of teachers at all levels, and capacities of media and training institutions to offer high-quality training increased, including through intersectoral cooperation

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- Community radio and community multimedia centres fostered as catalysing tools for community "voice" and people-centred development

- Capacity of free, independent and pluralistic media to report according to professional standards, as established by journalists themselves, enhanced in post-conflict environments (UNESCO 2008a:159).

The General Conference resolution 34 C/Res.48 for Major Programme V author-ises the Director-General to implement the plan of action. It makes a very posi-tive statement about MLA 2, which is to:

> foster universal access to information taking requisite measures, given the fact that the growing concentration of ownership of media and infor-mation and communication technology tools could jeopardize the actual implementation of universal access, and to that end: assist in the formula-tion of national information policy frameworks, in particular within the framework of the Information for All Programme (IFAP); support the preservation of analogue and digital documentary information through the Memory of the World Programme; establish policy frameworks and international standards to increase information literacy; monitor develop-ments and foster the exchange of best practices with regard to the ethical dimensions of the information society, building on the priorities of IFAP; foster international partnerships for enhancing universal access to infor-mation; encourage the development of knowledge societies (UNESCO 2008a:157)

All this is very relevant to the library profession, especially the themes of access to information, preservation and information literacy. However, in the chapter dealing with Major programme V libraries are mentioned only twice, once in the context of digital library services (UNESCO 2008a:166) and once in the context of information management. In MLA 2, one of the expected results is: "Informa-tion management structures to support sustainable development strengthened", and here libraries and archives feature in a performance indicator:

> Strategies and action plans established for libraries and archives to become key actors for building knowledge societies:
> -- *Benchmarks: 5 national strategies formulated to strengthen the role of libraries and archives; 5 digital library services established* (UNESCO 2008a:170)

The intention to strengthen the role of libraries and to make them (with archives) key actors for building knowledge societies is encouraging. But again, there is an emphasis on the development of digital libraries. How the establishment of five digital library services can be seen as a benchmark when digital library products, services, collections and facilities are springing up like mushrooms all over the world, is hard to understand.

MLA 2 is to receive the lion's share of Major Programme V's budget for 2008-2009: $10,7 million (33,7%) of the regular budget and $36,5 million (86,4%) of the extrabudgetary funds (UNESCO 2008a:154) but it is not clear how this amount will be distributed to the various activities covered by MLA 2. The general emphasis in the Programme is on media and information, with very little attention being paid to libraries. A word count of the text of the chapter on Major Programme V (UNESCO 2008a:154-172) illustrates this (Table 3).

Table 3: Frequency of key words in the section on Major Programme V in UNESCO's Approved programme and budget 2008-2009 (34 C/5 Approved)

Word	Frequency
media	113
information	111
ICT, ICTs	32
communication	31
knowledge	29
multimedia	6
library/libraries/librarian	5
IFAP	5
archive/archives/archival/archivist	3

In the debate in the CI Commission in October 2007 libraries and archives were said to be active partners of IFLA. It was stated that libraries are central to UNESCO and UNESCO will continue to work with them to promote them as sources of information for the people. However, on the evidence of the programme and budget document the implication is inescapable: libraries hardly

featured in the thinking of those who developed the programme and budget for UNESCO's major programme for Communication and Information.

4. UNESCO's Information for All Programme (IFAP)

4.1 Background

The Information for All Programme (IFAP) was established by UNESCO in 2001 with a mandate to

> …be a key participant in the fulfilment of UNESCO's mandate to contribute to "education for all", to the "free exchange of ideas and knowledge" and to "increase the means of communication between peoples".

It was also expected to "contribute to narrowing the gap between the information rich and the information poor", to work on "all aspects of access to and management of information", to work with all UNESCO sectors and to cooperate with other United Nations bodies (UNESCO 2007c:76).

IFAP was in effect the result of the merger of two existing UNESCO programmes—the General Information Programme (GPI) and the Intergovernmental Informatics Programme (IIP) (Gurstein & Taylor 2007:6). The Programme is governed by an Intergovernmental Council composed of 26 UNESCO member states elected at the General Conference. Every two years the Council elects a Bureau composed of eight members. The work of the programme is supported by a small Secretariat (one officer and a part-time secretary) provided by the Information Society Division of the Communication and Information Major Programme. IFAP has encouraged the creation of IFAP national committees in member states. The national committees provide a mechanism for two-way communication between IFAP and the national stakeholders in the member states.

4.2 External evaluation of IFAP, 2006

By 2006 it was clear that IFAP was not fulfilling the high expectations that had been held when it was launched. An external evaluation (Gurstein & Taylor 2007) was commissioned. The evaluators found that IFAP had achieved some successes, including:

- the establishment of the intergovernmental framework of the Council and Bureau.

- fund raising (with limited success)

- the selection, funding and implementation of projects in the IFAP priority areas of information literacy, information preservation and information ethics

- the establishment of National Committees (some very successful but most of them inactive)

- publications in the IFAP's field of expertise

- providing support for the development and implementation of policy and standard setting instruments

- the organization of thematic debates with governmental, NGO and other representatives (Gurstein & Taylor 2007:6-7)

On the other hand, the evaluators found that IFAP faced a number of key challenges:

- IFAP's mandate "lacks clarity and focus and does not readily lead to clearly identifiable outcomes and achievements".

- IFAP lacks the necessary financial and human resources.

- IFAP lacks a capacity to monitor the projects it funds and to evaluate their outcomes

- IFAP's governance structure is cumbersome: its Council meets only every two years and the IFAP Bureau lacks the resources to carry out substantive activities.

- IFAP lacks the capacity to respond to the rapidly evolving policy, institutional and technological framework within which it has to operate (Gurstein & Taylor 2007:7-8).

The evaluators concluded that, while IFAP had achieved some successes, its impact had been limited. In particular, its visibility during the process leading up to the World Summit on the Information Society and at the two summits had been minimal. However, the evaluation report also recommended that

> IFAP align itself with the activities in the follow-up and implementation of the WSIS Plan of Action. This could include developing a Programme responsibility for carrying through on the areas of involvement and responsibility assigned to UNESCO in the WSIS follow-up and Plan of Action (Gurstein & Taylor 2007:42)

4.3 The IFAP strategic plan

The report on the evaluation of IFAP was submitted to UNESCO's Executive Board, which responded by asking the Director General to prepare a results-based strategic plan for IFAP, relating it to the Geneva Plan of Action. The proposed strategic plan was drawn up by the IFAP Bureau under time pressure, using electronic consultation and teleconferencing, and version 17 of the draft (IFAP 2008) was sent to Council members for discussion at its meeting in April 2008.

The draft reaffirms the global goal of IFAP as "information for all". This goal should be as prominent in UNESCO as "education for all". In this connection the document recognises the role of libraries, stating that:

> Community libraries, public archives, telecentres, community multimedia centres and other community-based centres where people can get access to information, have many of the key functionalities required to build information literate communities… Libraries, archives and community information centres are good examples of how "information for all" could materialise within a community (IFAP 2008:8-9)

"Information for all" is such an ambitious aim that it is beyond the resources of UNESCO alone. It is necessary to focus on what UNESCO can do. Therefore an achievable mission has to be chosen for IFAP. Hence in Section 6 an "overarching goal" is proposed for IFAP:

> To help Members States to develop and implement national information strategies and knowledge strategies in a world increasingly driven by digital technologies (IFAP 2008:11)

IFAP should concentrate its efforts on preparing resources for use by all member states in preparing their own national policies and strategies, in five priority areas:

- Information for development
- Information literacy
- Information preservation
- Information ethics
- Information accessibility

For each of the priority areas a strategic programme objective is identified and elaborated:

Table 4: IFAP priority areas and strategic programme objectives

Priority	Strategic programme objective
Information for development	Mainstreaming the importance of information in national development plans
Information literacy	Fostering information literate societies
Information preservation	Identifying and promoting cost-effective technical solutions for information preservation
Information ethics	Raising awareness on ethical issues related to information
Information accessibility	Enhancing universal and multilingual accessibility to information

Each of these is briefly discussed and for each a number of activities is listed (IFAP 2008: 14-18). Surprisingly, libraries do not feature here, although in the section on Information Preservation the Memory of the World programme is mentioned, as is collaboration with international NGOs including IFLA.

A set of eleven "expected outcomes" is proposed. The strategic plan recognises that most of the outcomes are at the level of member states and outside the direct control of UNESCO. The outcomes relate to the following:

1. Parameters for national information policy frameworks to help governments to develop comprehensive information policy frameworks or strategies.
2. Information for development: IFAP will fund and publicise (using an online "success stories" platform) projects that illustrate practically how communities use information for development.
3. Information literacy indicators: IFAP will develop indicators that will enable member states to measure their progress in building information literate communities.
4. Information literacy strategies in national education policies: IFAP will encourage member states to integrate information literacy into national education curricula.

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5. Cost-effective technical solutions for information preservation, particularly digital information.
6. Ethical issues of emerging technologies: IFAP will encourage every country to establish an "info-ethics advisory board" or "info-ethics council".
7. Clarification of the role of free and open-source software (FOSS): IFAP's role here is somewhat ambivalent, since unreservedly championing FOSS runs counter to the interests of powerful member states.
8. Creation of multilingual digital content: IFAP will encourage member states to develop a "digital content strategy" encompassing the creation of new content as well as the storage and preservation of digital content.
9. Making digital resources accessible to people with disabilities.
10. Enhancing the capacities and competencies of information professionals: "IFAP's vision is for every community to have access to a library or a library-type facility with digital access." These centres need competent information professionals. For librarians there is a worrying subtext here: an acceptance that it is not possible to have community libraries everywhere and that other forms of community centres will do in developing countries.
11. Development of measures of the effectiveness of information infrastructures in improving the lives of people: IFAP will collaborate with agencies such as the UNESCO Institute for Statistics to develop such measures, starting with information literacy indicators (IFAP 2008:19:26)

The outcomes are rather a mixed bag. Some are quite specific and may be measurable, others are little more than lofty statements, leaving it unclear what, if anything, IFAP could do to help bring them about. There are rather too many outcomes, and it seems that the sense of focus that is imparted by the five priorities has not been maintained.

Section 10 of the draft presents a table comparing the eleven IFAP outcomes with the objectives set in UNESCO's Medium Term Strategy 2008-2013 and the WSIS action lines (IFAP 2008:26-28). The table shows that there is considerable alignment between the IFAP outcomes and WSIS action lines C3 (Access to information and knowledge; IFLA's high priority) and C10 (Ethical dimensions of the Information Society), where libraries are mentioned several times. However, no mention is made of other action lines which are equally relevant to the development of Information Societies and which are very relevant to libraries, for example C1, C4, C7 and C8. This reflects the limitations imposed by UNESCO's silos. C1, C4, C7 and C8 fall within the domains of other UNESCO major programmes and hence outside the scope of IFAP.

The draft stresses that progress towards knowledge societies is only possible in a "multi-stakeholder collaborative environment" and that UNESCO needs to engage with the other stakeholders on a more equal footing.

The most controversial part of the draft is found in Section 12, which presents a proposal for "a phased approach to mainstream the programme [IFAP] and eliminate the need for a separate IFAP Council" (IFAP 2008:32-44). The rationale for this is that information for all should be an integral part of UNESCO's regular Programme and Budget. It should so thoroughly permeate the work of UNESCO that no separate structure for it should be necessary. The proposal provides for three phases, corresponding to the three biennia of the Medium Term Strategy. By the third phase (2012-2013) the formal IFAP structures (the Council, its Bureau and the IFAP Secretariat provided by the Information Society Division) are to be disbanded and all "information for all" activities integrated into UNESCO's regular programme. However, evaluation of progress in each biennium would make it possible to opt out of this drastic step.

Although inadequate resources have been a major cause of IFAP's unsatisfactory performance in the past, no additional funding is proposed, only a reallocation of IFAP's existing budget over the three phases.

In the Council debate on the draft Strategic Plan in April 2008 there was a chorus of opposition to the proposal to phase out the Council. Questions were raised about whether the Council can operate virtually, and concern was expressed that "mainstreaming" will result in loss of focus on information as a UNESCO priority. The lack of a clear plan for funding the programme was a further concern. After much debate the resistance to the phasing out proposals in the draft plan led to a postponement of its adoption. The Council requested its Bureau to revise the draft plan in light of the discussion and to arrange an online consultation on the revised draft. It agreed to adopt it in a virtual meeting six month later, after which it would be submitted to the Executive Board for endorsement, six months after the Executive Board's deadline.

At time of writing it is not yet known how the Executive Board will respond to this outcome, but it is unlikely to convey to the Executive Board a positive image of a dynamic programme and Council. It also illustrates the structural weakness of IFAP already pointed out by the external evaluators: it is a programme in a rapidly developing field, but its policies are decided by an indecisive Council that meets only every two years. The Council's unfortunate failure to endorse the IFAP Strategic Plan casts doubt on the future viability of IFAP.

5. Conclusion

There is no easy road to library development. Libraries do not feature in high level declarations such as the Millennium Development Goals. Libraries are not visible and relevant enough to the politicians and diplomats who craft such statements. Librarians themselves have to make and demonstrate the connections between these goals and the contributions that libraries can make to achieve them. As the presidential theme of IFLA's current President, Claudia Lux, suggests – the theme is "Libraries on the agenda!" (Lux 2005) – librarians have to demonstrate the relevance of their institutions to society.

The WSIS process demonstrated that this can be done. Energetic and focussed advocacy during the WSIS process yielded positive results in that language favourable to libraries was included in the outcome documents. However, if these gains are not exploited, the effort will have been wasted. Thus the WSIS action lines have to be followed up painstakingly and systematically, through constant monitoring, patient networking, the formation of partnerships and being seen to contribute. This has to be done not only at the international level, where IFLA as an international NGO recognised by international intergovernmental organisations can take the lead, but also at the national level.

Librarians have long looked to UNESCO as a source of support for library development. Because of its leading role in following up the WSIS action lines that are most relevant to libraries, UNESCO still offers the best opportunities for inserting libraries into national development plans, national information policies and national knowledge society strategies. However, an analysis of the UNESCO medium term programme for 2008-2013, the programme and budget of the Major programme for Communication and Information for the biennium 2008-2013, and the draft strategic plan of the Information for All Programme, suggests that librarians should not take UNESCO's support for granted. Amid the lofty verbiage in the UNESCO documents and the repeated, obligatory references to currently fashionable themes such as SIDS, LDCs, gender equity, youth, vulnerable segments of society, and Africa, one is hard-pressed to find text that implies a significant role for libraries in the development of knowledge societies. This is frustrating for librarians: it is so obvious to us that libraries are essential to UNESCO's goals and objectives, but libraries seem constantly to be overlooked.

Colleagues in Africa are familiar with the term "Afro-pessimism". Among colleagues working in international NGOs there is something analogous:

"UNESCO-pessimism". Some are tempted to give up on this slow-moving, labyrinthine organisation. However, I believe that there is still much to be gained by engaging with UNESCO. This has to be done at various levels. For example, at the international level there is a major challenge for IFLA to break out of the "Information Society" pigeonhole in which it has been placed in UNESCO, and to build relationships with other UNESCO divisions in the other UNESCO major programmes, to each of which libraries are relevant. IFLA is working on this, and is also working to build stronger relations with other international NGOs in related fields.

Here are some opportunities at the national level:

- Participate in the work of your country's national IFAP committee. If there is no such committee yet, help set one up, if applicable in collaboration with other IFLA members in your country. Use the IFAP Committee to disseminate the concept of "information for all" in your country, to network with colleagues in related professions, and to communicate your country's experiences and needs to IFAP.

- Participate in the work of the National Commission for UNESCO, to ensure that information and library matters are addressed there, and that the representatives of your country who go to attend UNESCO meetings in Paris and WSIS action line meetings in Geneva, are properly briefed about the role of libraries. The National Commission also offers a means of connecting with other UNESCO major programmes.

- Work through contacts in the National UNESCO Commission and relevant ministries to insert library issues into the regional consultations of member states of UNESCO that are being held every two years to discuss the draft programme and budget for the next biennium. At time of writing such meetings were being held to discuss the programme and budget for 2009-2010. Librarians in developing countries should gear up for participating in the next round of consultations, for the biennium 2011-2012.

It will not be easy for librarians to stake out the central ground in the information or knowledge society. The library community will have to invest significantly in the building of partnerships and in the conduct of effective advocacy. This is tough, but not impossible: "When the going gets tough, the tough get going."

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THE E-AGRICULTURE INITIATIVE:
ACHIEVING THE MDGS THROUGH SHARING OF INNOVATIVE EXPERIENCES

Justin Chisenga

Abstract

e-Agriculture is relatively new emerging field within agricultural informatics, agricultural development and business. It involves the conceptualization, design, development, evaluation and application of innovative ways to use existing or emerging information and communication technologies (ICTs) in order to boost agricultural production and related activities. The paper discusses how innovative e-agriculture initiatives can contribute to the attainment of the Millennium Development Goals (MDGs) with a specific emphasis on Goal 1 – Eradicate Extreme Poverty and Hunger. It reviews three cases of innovative e-agriculture initiatives – Virtual Extension and Research Communication Network (VERCON) from Egypt, Tradenet.biz from Ghana, and ITC's e-Choupal from India – and shows how these are contributing to changing the lives of rural-based farmers. Finally, it discusses the Food and Agriculture Organization (FAO)'s e-Agriculture Initiative (e-Agriculture Community of Expertise Forum) whose main goal is to enhance the contribution of ICTs to agriculture and rural development through a multi-stakeholder, people-centred, cross-sectoral platform that brings together all stakeholders from relevant constituencies. It concludes that there is an urgent need to learn and share lessons from various isolated e-agriculture innovations if they are to be scaled up or replicated successfully in other countries. FAO's e-Agirculture Initiative provides a forum for sharing experiences in e-agriculture. It is contributing to furthering e-Agriculture on a global scale, and thus the attainment of MDG Goal 1.

Keywords: e-Agriculture, e-Agriculture Initiative, Millennium Development Goals, Tradenet.biz, VERCON, e-Choupal

1.   Introduction

1.1. Millennium Development Goals and Agriculture

In September 2000, at the United Nations headquarters in New York City, representatives of the UN member states adopted the Millennium Declaration as a re-

newed commitment to human development. The declaration, later consolidated into 8 goals (better known as the Millennium Development Goals), 18 targets and 48 indicators, became a formal commitment by the international community to fight against poverty and hunger, disease, illiteracy, environmental degradation and discrimination against women by the year 2015.

The Millennium Development Goals (MDGs) consolidated from articles 19, 20 and 21 of the Millennium Declaration (United Nations 2000) are the following:

- Goal 1: Eradicate extreme poverty and hunger

- Goal 2: Achieve universal primary education

- Goal 3: Promote gender equality and empower women

- Goal 4: Reduce child mortality

- Goal 5: Improve maternal health

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

- Goal 7: Ensure environmental sustainability

- Goal 8: Develop a Global Partnership for Development

About 70 percent of the MDGs' target group live in rural areas, particularly in Asia and Africa (Rosegrant et. al. 2006.), and a large number of the people in this group depend largely on agriculture (encompassing crops, livestock, aquaculture and fish, forestry and agroforestry) for their livelihoods. About 75% of 1.3 billion people living on less than $1/day live in rural areas. Therefore, agriculture and rural development are vital for achieving the majority of MDGs, and progress on these goals can in turn advance agriculture and rural development (CGIAR & IFPRI 2002). A more productive and profitable agricultural sector in the developing countries of Asia and Africa could contribute immensely to the achievement of the MDGs, especially Goal 1.

1.2 MDGs and Information Communication Technologies

It is now widely recognized that the use of information and communication technologies (ICTs) – encompassing the "old" ICTs of radio, television and telephone, and the "new" ICTs of computers, satellite and wireless technology and the Internet (UNDP 2004) – can foster the implementation of development goals, and in 2003, the United Nations ICT Task Force established a link between most of the targets related to the MDGs and information and communica-

tion technologies (United Nations ICT Task Force 2003). The UN Millennium Declaration also recognized the role that ICTs could play in enhancing development and this is indicated in Goal 8, under Target 18 which outlines a focus on cooperation with the private sector to ensure that the available benefits of new technologies, especially information and communication technologies are available to all. ICTs have a role to play in contributing towards combating poverty, hunger, diseases, illiteracy, environmental degradation and discriminations against women.

Regarding *Goal 1 – Eradicate Extreme Poverty and Hunger*, ICTs have the potential to increase agricultural production which could result in improvement in the quality of lives in rural areas and this could contribute to the eradication of extreme poverty and hunger among the rural populations. If properly deployed, ICTs could enable rural-based farmers to access information and knowledge that could lead to improvements in the farming methods and processing of their produce, access up-to-date information on prices of their produce, and sell their produce to external markets. The challenge for governments, private sector, civil society and other stakeholders in developing countries, therefore, as declared by the World Summit on the Information Society (WSIS), "is to harness the potential of information and communication technology to promote the development goals of the Millennium Declaration" (WSIS 2003). ICTs have enormous potential as tools to lift the marginalized, rural poor people in developing countries out of poverty, which according to the Department for International Development (DFID):

> "has multiple and complex causes. The poor are not just deprived of basic resources. They lack access to information that is vital to their lives and livelihoods: information about market prices for the goods they produce, about health, about the structure and services of public institutions, and about their rights. They lack political visibility and voice in the institutions and power relations that shape their lives. They lack access to knowledge, education and skills development that could improve their livelihoods. They often lack access to markets and institutions, both governmental and societal, that could provide them with needed resources and services. They lack access to, and information about, income-earning opportunities" *(DFID 2002)*.

Therefore, as part of a wider strategy to eradicate extreme poverty and hunger, rural populations in developing countries should be empowered to access information and knowledge that is vital to their lives and livelihoods, and to use ICTs

as a tool to support their efforts to lift themselves out of poverty (WSIS 2003). Considering that 75% of the world's poor live in rural areas and 85% percent of them are directly or indirectly involved in agriculture, the application of ICTs to the eradication of extreme poverty and hunger must take into account the needs of the rural populations.

2. Innovative ICT Application in Agriculture (e-Agriculture)

E-agriculture involves the conceptualization, design, development, evaluation and application of innovative ways to utilize existing or emerging ICTs (Mangstl 2005) in order to boost agricultural production and related activities. Examples of e-agriculture applications include the delivery of agricultural information and knowledge services, i.e. market prices, extension services, information on agricultural practices, soil condition and weather condition, etc, using the Internet and related technologies, and the more advanced applications such as using sophisticated ICTs, i.e. satellite systems, Global Positioning Systems (GPS), Geographical Information Systems (GIS), advanced computers and electronic systems, to improve the quantity and quality of agricultural production.

Efforts to harness the potential of ICTs in agriculture and contribute to the realization of the MDGs, especially Goal 1, are resulting in several innovative e-agriculture initiatives by various stakeholders, i.e. private, public, civil society, international non-governmental and governmental organizations, etc, in various parts of the world. The following are just three of the innovative e-agriculture initiatives that have been implemented and are operating successfully:

- Tradenet.Biz – Ghana

- Virtual Extension and Research Communication Network – Egypt

- ITC's e-Choupal – India

2.1 TradeNet.biz

TradeNet.biz (http://www.tradenet.biz), developed by a team of young Ghanaians at BusyLab, a software research and development business based in Accra, Ghana, is a customizable, web based platform offering online tools for the exchange and management of market information. It is designed to be used by farmers' associations and commodity traders in developing countries. Its major goal is "to make African markets more transparent and efficient, improve intra-regional trading, and provide stakeholders with enough recent and accurate in-

formation to make better decisions on bringing products to market and at what price" (BusyLab n.d)

The platform offers the following facilities which were developed in consultation with market price analysts, farmers, traders and agricultural specialists:

- Six modules for managing price information, document library, news, offers, contacts, and commodity information;

- Space for producer and trader organizations to create websites which can incorporate information from the above six modules;

- Access to information using Short Message Service (SMS) available on digital mobile phone networks;

- Facilities for users to configure local measures, i.e. sacks, bowls, bags, etc and specify a metric conversion and upload or display prices in local measures.

Fig. 1: TradeNet.biz website[1]

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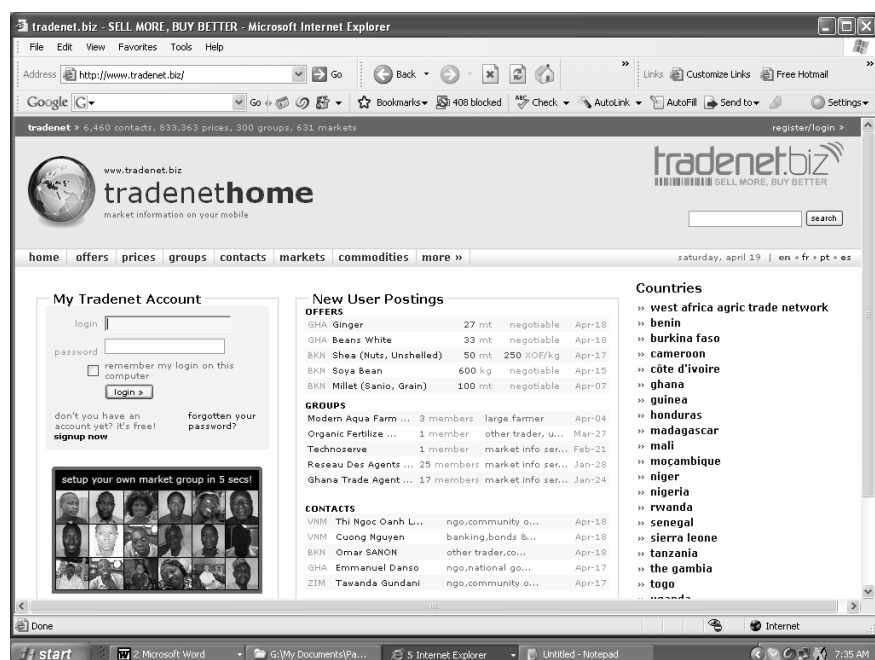
[1] Website screen captured on 19 April 2008.

TradeNet.biz is a result of public/private partnerships. During the pilot phase in 2003, which focused on providing market information on Shea butter, TradeNet.biz received initial support from FAO and TechnoServe Ghana, while its major development phase was conducted in partnership with the regional project *"Market Information Systems and Traders' Organizations of West Africa"* (MISTOWA), a USAID West Africa-funded managed by IFDC[2]. Other partners included the International Center for Tropical Agriculture (CIAT); FoodNet, a post harvest and market research programme of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA); and Areeba[3], a mobile phone service provider based in Ghana.

TradeNet.biz, launched on 30 January 2007, is covering over 300 major markets in West and Eastern Africa, and the primary users of the platform are MISTOWA's partner organizations, associations of farmers, producers, and market information networks in almost all the 15 Economic Community of West African States (ECOWAS) countries[4]. Under the MISTOWA project, TradeNet.biz provided the technology side of a solution to the challenge of improving market information flows in West Africa, a region in which lack of access to market information has been a major barrier to trade and food security. MISTOWA has trained government and private market enumerators to upload price and other information to Tradenet.biz, producer and trader organizations to access the information and develop their own websites on the platform, and helped partners create and manage on a for-profit basis Agribusiness Information Points (ABIPs) where information can be uploaded and accessed. The platform, accessed via SMS, fax, web, and Personal Digital Assistants (PDAs), is allowing potential traders and buyers to have access to daily price information of goods, identities of potential buyers and sellers, post buy/sell offers to the community, download video/audio files, access research documents.

Outside the West Africa sub-region, the TradeNet.biz platform is available to users in Madagascar, Mozambique, Rwanda, Tanzania, Uganda and it has also been piloted in Honduras, in South America. TradeNet.biz has the potential to become a continent wide platform for market and trade information in Africa and could contribute to opening up agricultural trade among countries in Africa and putting more money in the farmers' pockets.

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[2]   An International Center for Soil Fertility and Agricultural Development
[3]   Changed the name to MTN as from August 2007
[4]   Benin, Burkina Faso, Cape Verde, Cote d'Ivoire , The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria , Senegal, Sierra Leone, and Togo.

2.2 VERCON – Research and Extension Network

The Virtual Extension and Research Communication Network (VERCON), is a process and conceptual model for improving communication between research, extension and farmers developed by the FAO. VERCON aims to harness the potential of the Internet and apply it to strengthening and enabling linkages among the research and extension components of the national agricultural knowledge and information system. The VERCON's innovative nature is its capability to achieve effective linkages by connecting geographically dispersed people and enhance two-way communication, managing large volumes of data, and rapidly collecting, processing and dispersing information in a variety of forms (FAO n.d).

The VERCON concept has been implemented in Egypt. The pilot implementation, with the support of FAO's Technical Cooperation Programme, was done in 2001-2002 in collaboration with several national organizations including the Egyptian Central Laboratory for Agricultural Expert Systems (CLAES) and the Agricultural Extension and Rural Development Research Institute. The official launch of the platform (http://www.vercon.sci.eg/vercon_en/) was in April 2003.

The overall goal of the VERCON implementation in Egypt is "to improve, through strengthened research-extension linkages, the agricultural advisory services provided to Egyptian farmers and in particular to resource poor farmers in order to increase production in food and agriculture with the goal of raising farm incomes" (What is Vercon? n.d.). The platform in Egypt provides authorized users access to:

- Expert/decision support systems for wheat, rice, beans, grapes and tomato;

- Digitized extension brochures and bulletins produced by research institutes and central administration for extension;

- Statistical databases.

The platform also provides access to growers' problems system that enables extension workers to interact with researchers at different levels, and keep a repository of all problems raised by the farmers and the solutions; and unsolved problems, if any, to be referred to researchers to find solutions to them through their research programmes (Rafea 2004). It also facilitates communication between researchers and extension workers through online discussions, and announcements of news and events pages.

Fig. 2: VERCON Egypt website[5]
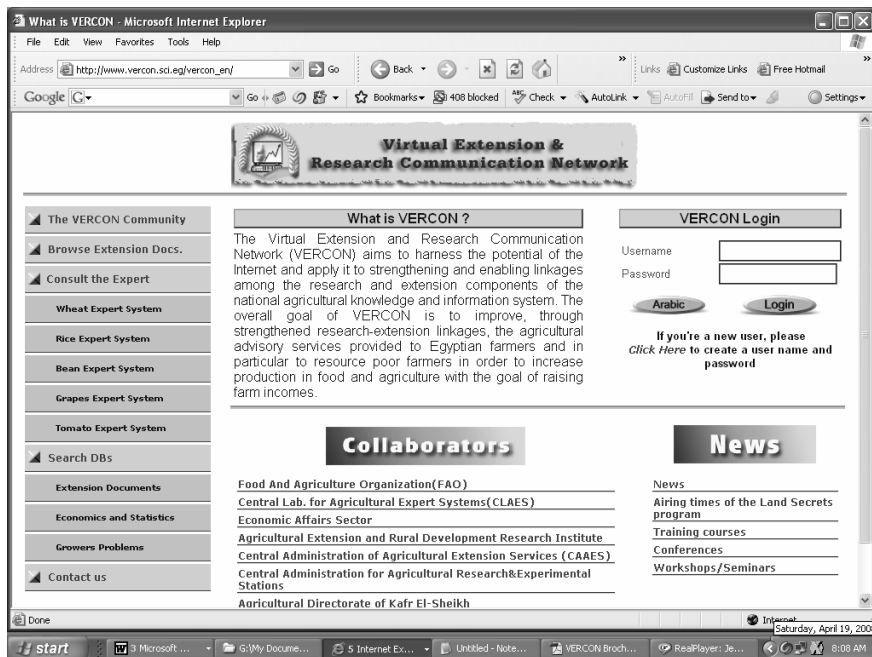
2.3 ITC's e-Choupal

The e-Choupal[6] initiative (http://www.echoupal.com/) is well documented. e-Choupal is a private company initiative in which Internet kiosks (e-Choupals) for e-commerce are being used to enable farmers in rural Indian villages to access crop-specific, customized and comprehensive information in their own language on websites that ITC has created. The initiative, launched in June 2000 by ITC's International Business Division, one of India's largest exporters of agricultural commodities, provides farmers with access to content that includes expert knowledge on best farm practices, prevailing Indian and international prices and price trends for their crop, risk management and farm insurance, and local weather forecast.

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5   Website screen captured on 19 April 2008.
6   *Choupa*l means village meeting place in Hindi

Fig. 3: e-Choupal website[7]
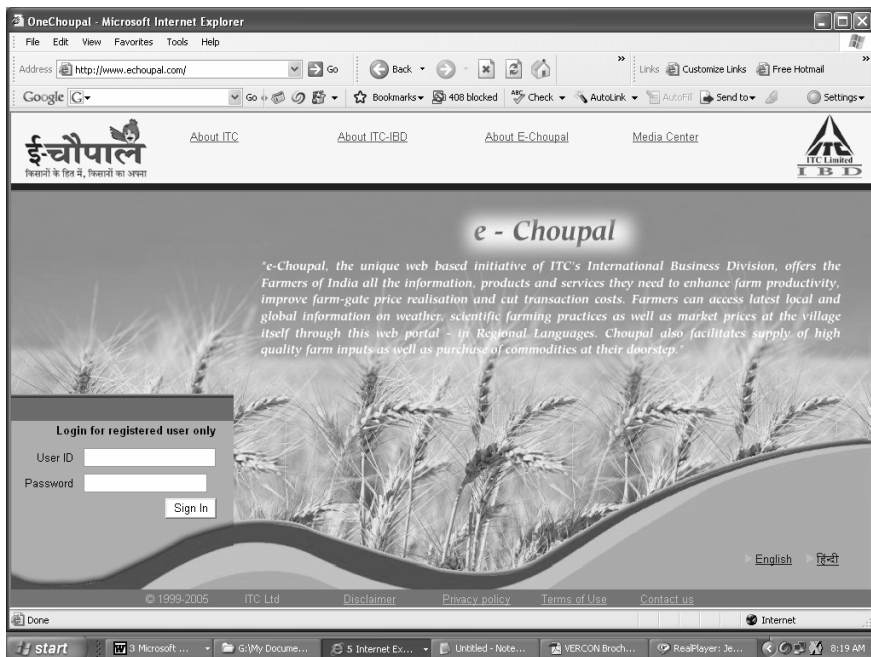
Under the e-Choupal initiative, ITC has set up Internet kiosks in villages which are managed by farmers known as '*Sanchalaks*' (coordinators), selected from within the community. The '*Sanchalaks*' are trained to run the e-Choupa and they help the farmers to access the different agricultural crop-specific websites that ITC has created in the relevant local language. The '*Sanchalaks*' also facilitate the ordering and supply of high-quality agricultural inputs such as seeds, fertilizers offered by the participating partner companies.

The e-Choupal initiative initially started as an effort to re-engineer the procurement process to facilitate sourcing of high-quality farm produce (i.e. soy, tobacco, wheat, shrimp, and other cropping systems) for ITC's fast growing agri-business in rural India. It was designed to tackle the challenges posed by the unique features of Indian agriculture, characterized by fragmented farms, weak infrastructure and the involvement of numerous intermediaries, among others (ITC n.d.). The initial objectives of the initiatives were to (Bowonder, Gupta & Singh n.d):

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[7]   Website screen captured on 19 April 2008.

- enhance farm productivity by disseminating latest:
  - information on district level weather forecasts for short and medium terms
  - information on best practices in farming (generic as well as specific)
  - information supply of quality inputs (seed, herbicide, fertilizer, pesticides etc) in the village itself

- improve price realization for farm produce by making available:
  - live data on markets viz. location/buyer wise prices offered
  - international market prices of relevant agri-commodities
  - historical and up-to-date information on supply and demand
  - expert opinion on expected future price movements

- minimize transaction costs in marketing farm produce:
  - by buying output at the farmers' doorstep
  - through transparent pricing & weight management practices

Since its launch, it has gone on to become the largest initiative among all Internet-based interventions in rural India. By May 2007, e-Choupal services were reaching more than 4 million farmers in about 40,000 villages through more than 6500 Choupals across eight States of India, and farmers' incomes in the areas covered by the initiatives had increased by 20% and productivity increased from 14% to 29% (ITC 2007).

3. The e-Agriculture Initiative

There is an urgent need for a platform to promote innovative e-agriculture initiatives taking place in many parts of the world, and to share experiences. If brought together in a more coherent and systematic way, the wide range of enterprises will have greater potential impact by learning from each other than if they remain isolated or fragmented. In this regard, at WISIS Phase I in Geneva in 2003, FAO launched its partnership-based Bridging the Rural Digital Divide (BRDD) programme which addresses the first Millennium Development Goal, *eradicating extreme hunger and poverty*, and the Plan of Action of the World Summit on the Information Society, which undertakes to build a people-centred, inclusive and development-oriented Information Society (FAO 2006). The objectives of the Programme are:

- to increase the availability of *information content* related to *rural areas* in digital form;

- to develop *innovative mechanisms* and processes for information exchange and communication; and

- to *establish networks and communities of practice* in information and communication for development and for exchange of information on agriculture and rural development

In 2005, at WSIS Phase II, the Organization launched an interactive website – *www.fao.org/gil/rdd* – for the Programme which is being used to promote best practices in e-agriculture; provide a range of approaches to information and communication for development and illustrative case studies; provide access to tools for capacity building; links to community practice; and news and other resources.
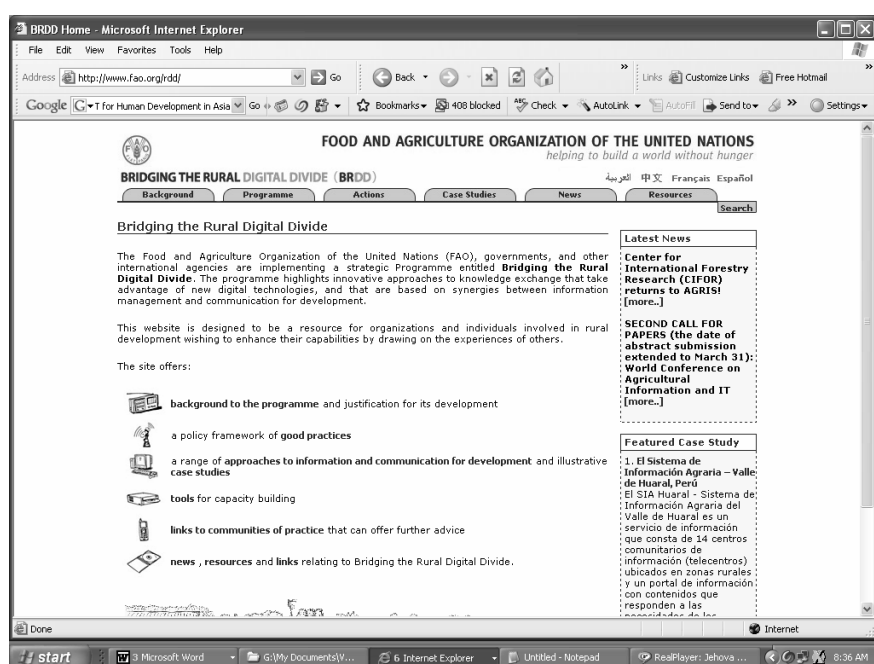
Fig. 4: BRDD website[8]

The need for a platform to share innovative e-agriculture experiences was also supported by the results of a global online survey on e-agriculture, conducted from 1 October to 15 November in 2006 by the FAO, as a follow-up to the World Summit on the Information Society. In the survey, a total of 2121 participants (62% of the 3,433 respondents) from 135 countries requested to be part of an e-Agriculture Forum. Based on the request made by the survey participants, the FAO, which has been assigned the responsibility of organizing activities related to the WSIS Action Line under C.7 ICT Applications on *e-Agriculture,* on 28 September 2008, launched an e-Agriculture Community of Expertise forum. The goal of this initiative is to enhance the contribution of ICTs to agriculture and rural development through a multi-stakeholder, people-centred, cross-sectoral platform that will bring together all stakeholders from relevant constituencies (FAO 2007). This forum will foster:

- focused online dialogue and knowledge exchange;

- development of good practice guidelines;

- creation of opportunities to find and interact with other practitioners around the world; and

- sharing resources and build relationships that can be applied to shared projects.

The e-Agriculture Community of Expertise will (FAO 2007):

- identify stakeholders, individuals and organizations (e.g. farmers groups etc), that might wish to take part in the Community;

- enable regional, national or local sub-communities to be developed;

- host Forum discussions to enable sharing of knowledge on topics related to e-agriculture and to foster collaboration;

- contribute towards the development of policies, guidelines, strategies and priorities related to e-agriculture and to advocate sound practices;

- share documents, resources and experiences (case studies) with other members in this global community;

- generate news feeds that help to promote the Community and advances in e-agriculture;

- allow stakeholders to promote themselves and their experiences.

The overall aim of the forum's portal, *www.e-agriculture.org*, which was pilot launched on 23 May 2007, is to enable members of the e-Agriculture Community of Expertise to exchange opinions, experiences, good practices and resources related to e-agriculture, and to ensure that the knowledge created is effectively shared and used. The portal provides access to a forum for registered members, news and events and to a collection of global examples of e-agriculture related projects and initiatives.

Fig. 5: e-Agriculture Forum website⁹
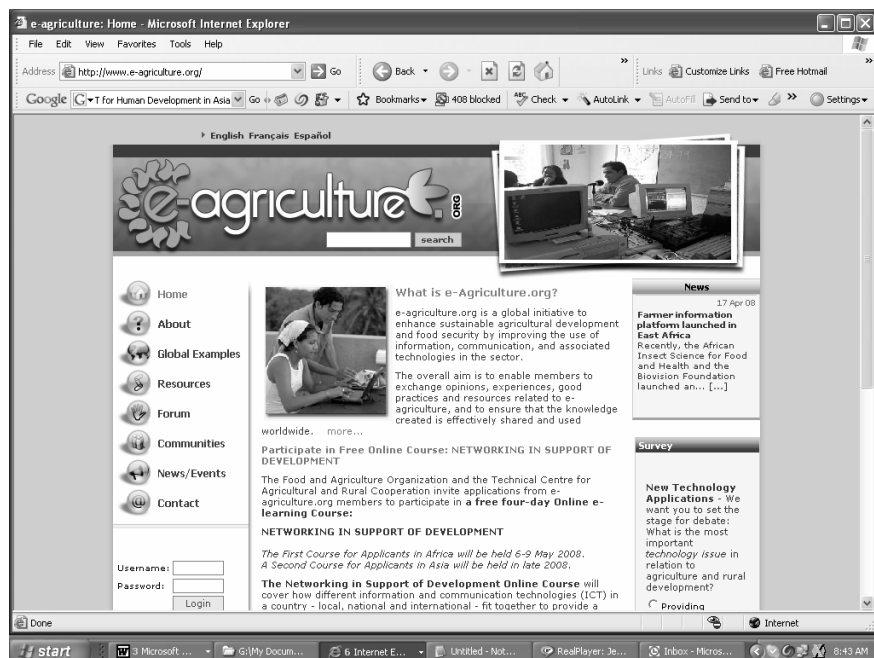
4. Conclusion

If properly used, information and communication technologies have great potential to effectively contribute to achievement of the Millennium Development Goals, particularly those related to income poverty reduction, health, education, environment and gender equity. As seen in the three cases of innovative e-agriculture approaches briefly discussed in this paper, ICTs can facilitate the

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9   Website screen captured on 19 April 2008.

creation of economic opportunities and opening up of markets to farmers. Timely access to relevant information and knowledge, made possible by both old and new ICTs, on improved farming practices, agricultural inputs, weather conditions, local and international prices for agricultural commodities, government agricultural policies, etc can result in improved and increased production and sale of more farm produce by the farmers. This in turn can bring in extra income and ultimately contribute to poverty reduction.

Several isolated innovative e-agriculture projects are being implemented in many parts of the world. There is an urgent need to learn and share lessons from these innovations if they are to be scaled up or replicated successfully in other countries. FAO's e-Agirculture Initiative provides a forum for sharing experiences in e-agriculture. It is contributing to furthering e-Agriculture on a global scale, and ultimately to the attainment of MDG Goal 1.

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MANAGING INDIGENOUS AND EXOGENOUS KNOWLEDGE THROUGH INFORMATION AND COMMUNICATION TECHNOLOGIES FOR AGRICULTURAL DEVELOPMENT AND ACHIEVEMENT OF THE UN MILLENNIUM DEVELOPMENT GOALS IN TANZANIA

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and
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Abstract

Approximately 1.2 billion people in the world live in extreme poverty. In that light, the first United Nations – Millennium Development Goal (UN-MDG) targeted eradicating extreme poverty and halving hunger by the year 2015. In support of the UN efforts, Tanzania set itself a goal to halve extreme poverty by 2010 and eradicate it by 2025. Poverty is principally a rural phenomenon and agriculture is the main economic activity for the rural population, therefore the reduction of hunger and poverty significantly depend on agricultural development. The expertise and knowledge to improve agricultural productivity and to reduce poverty are there. However, Tanzania's farmers are not only deprived from accessing global knowledge on agriculture, but they also lack opportunities to share their own indigenous knowledge. Information and communications technologies (ICTs) provide a possibility for rural farmers to share and preserve their own knowledge and use external information and knowledge. This paper addresses the extent to which ICTs can appropriately be used to manage agricultural indigenous knowledge to reduce extreme poverty and hunger in the rural areas of Tanzania. It also discusses ways that ICTs can be used to disseminate exogenous knowledge in the local communities in order to attain the first UN-MDG of reducing extreme poverty and halving hunger by the year 2015. Recommendations are given on how IK can be effectively managed using ICTs by citing examples from Tanzania.

Keywords: indigenous knowledge, information and communication technologies, agriculture

1. Introduction

About 1.2 billion of world's population lives in extreme poverty (World Bank 2007b:1). The majority of these world's poor are in developing countries, they are rural based and derive their livelihoods mainly from agriculture (Academy for Educational Development and Winrock International 2003). To address the challenges faced by the poor, governments worldwide committed themselves to the United Nations Millennium Development Goals (UN-MDGs). The first UN-MDG aims at eradicating extreme poverty and halving hunger by the year 2015 (United Nations Development Programme (UNDP) 2005). In line with UN-MDGs, Tanzania set itself the goal to halve extreme poverty by 2010 and eradicate it by 2025 (United Republic of Tanzania (URT) 2001). The National Strategy for Growth and Reduction of Poverty (NSGRP) also focused on poverty reduction in the country (URT 2005a).

Despite the efforts made to address the food insecurity and poverty, the number of rural poor in sub-Saharan Africa (SSA) has continued to rise (World Bank 2007a). Consequently, the highest incidence of under- nourishment is in SSA where one in every three persons suffers from chronic hunger. In Tanzania, poverty levels have also remained high and poverty reduction during the past decade has taken place mainly in urban areas, while rural areas have seen relatively little changes. The aggregate poverty level in 2000/01 was 35.7 percent compared to 38.6 percent in 1991/2, and it is highest in rural areas, where 39.9 percent of households are below the basic needs poverty line (URT 2006a). While such progress shows that Tanzania can achieve the UN-MDGs with political commitment, good policies and increased resources, still several challenges remain. Rural areas continue to be marginalized. Poverty is still concentrated in rural areas in Tanzania, and agriculture is the major source of livelihood for rural population. That means that the sustained reduction in hunger and poverty mainly hinges on agricultural development.

Agricultural information and knowledge to improve agricultural production and linking increased production to remunerative markets do exist in developing countries. Local communities possess a wide range of indigenous knowledge (IK) that has significantly contributed to the improvement of agricultural systems in relation to production techniques and post harvest techniques (Koda 2000:21). The integration of exogenous knowledge into indigenous knowledge systems has also allowed better results on farming activities in many developing countries including Tanzania (Kilongozi, Kengera and Leshongo 2005). However, many African farmers are not only deprived from accessing global knowl-

edge on agriculture, but they also lack opportunities to share their own local knowledge. If the UN-MDG of reducing poverty by half by 2015 is to be achieved, intervention must take place to revive the processes of managing agricultural IK and integrating exogenous knowledge into indigenous knowledge systems (IKS) to enhance agricultural productivity.

Information and communications technologies (ICTs) provide a window of opportunity for developing countries to harness and utilize IK and exogenous knowledge. In particular, ICTs can address the essential information, knowledge and communications dimensions of persistent poverty and low agricultural growth in developing countries since they can enable rapid and efficient exchange of information and knowledge across distance (McNamara 2003).

2.   Indigenous knowledge

IK may be used to solve local problems, to help grow more and better food, to maintain healthy lives, to prevent conflict, to manage local affairs (Mkapa 2004:1-2), to reduce poverty, decrease environmental degradation, and enhance equity which may lead to sustainable development (Henning 2004). Despite its importance to sustainable and equitable development, IK has largely been marginalized, neglected and suppressed due to ignorance and arrogance (Ocholla and Onyancha 2005:248). Nevertheless, there is a renewed interest on IKS due to its important role for sustainable development and rational resource use (Brokensha, Warren and Werner 1980). For instance, an informetric analysis of eight indigenous knowledge databases hosted by EBSCOHost and SABINET revealed a significant growth of IK documents from 1997 – 2002 (Ocholla and Onyancha 2005).

Notwithstanding the increased interest in IK and support for IK research, IK is threatened by what Chisenga (2002) termed "modernisation, urbanisation and globalization". It is estimated by Food and Agriculture Organization (FAO) that 30% of animal genetic resources are at high risk of loss due to negligence of IK in favour of conventional scientific findings (Muyungi and Tillya 2003). Thus, there is an urgent need to document and preserve IK so that it can be available for developmental initiatives before much of it is completely lost.

3.   Poverty and agricultural sector

Agriculture may contribute to poverty reduction and is a source of livelihood and a provider of environmental services in many developing countries (World

Bank 2007a). In Tanzania, the agriculture sector accounts for 45 percent of the GDP, provides 85% of exports and employs about 85% of the total work force (Central Intelligence Agency 2007). The importance of agriculture in enhancing poverty reduction is well supported by key development policies and strategies in Tanzania. The Agricultural Sector Development Strategy (ASDS) of 2001 is in resonance with the poverty reduction objectives of the NSGRP and the Tanzania Development Vision (TDV) 2025 (URT 2006b).

Despite the importance of agricultural production for poverty reduction, low agricultural growth has been a major factor in the Tanzania's slow progress towards poverty reduction. For instance, the agricultural sector in Tanzania grew by 4.1 percent despite the projected growth of 5 percent in 2006, and the actual growth rate of 5.1 percent in 2005 (Ngasongwa 2007). Considering that the overall GDP growth target for halving abject poverty by 2010 is in the range of 6-7 percent, this performance falls short of the needed growth (URT 2005b).

Regardless of the fact that agricultural yields continue to decline in SSA including Tanzania, previous studies show that agriculture growth in Africa remains fundamental to poverty reduction on the continent. Cross-country estimates show that for the poorest half of a country's population, GDP growth originating in agriculture has an impact on household expenditure that is on average four times larger than growth outside agriculture. Agriculture thus offers a great opportunity for reducing hunger and poverty. Although, the knowledge and resources to improve agricultural productivity and reduce poverty are there, their utilisation is limited, especially in Tanzania. The poor lack access to knowledge and information, the primary source of economic opportunity and political empowerment. That renders them vulnerable and prey to social exclusion (United Nations (UN) 2004).

4. Potential of indigenous and exogenous knowledge for agricultural development and poverty reduction

The potential of IK in improving agricultural performance is widely recognized (Hart and Mouton 2005; Ocholla and Onyancha 2005). For ages, farmers particularly in developing countries have planned agricultural production and conserved natural resources by using their IK. IK is an important aspect for agricultural development and poverty reduction because it is the social capital of the poor and a basis for their decision making. It provides local solutions to development challenges facing poor communities, and building on IK and leveraging other knowledge can help to alleviate poverty jointly with the poor (Gorjestani 2005).

In Tanzania, the potential of IK for reducing hunger and poverty can be gauged by the "*matengo* pits" practiced in Ruvuma region, the Ufipa mound system, the traditional terracing systems of the Iraqw and the rotational farming systems in Mufindi District in Tanzania. These systems demonstrate how the local communities, through their IK can reduce land degradation (especially soil erosion), maintain soil fertility and increase crop production (Kauzeni and Madulu 2003).

However, in Tanzania, a specific policy that deals with IK has not been formulated. Instead, IK is covered in various national strategies and sectoral policies. Among others, the National Strategy for Growth and Reduction Poverty (NSGRP) acknowledges the usage of IK for agricultural development and wildlife management (URT 2005a). A sectoral policy, such as the Agriculture and Livestock Policy of 1997 emphasizes the importance of integrating IK and conventional scientific knowledge in agricultural research (URT 1997). There is thus a need to develop the policy, strategies and action plans on the development and management of IK in Tanzania in order to reduce poverty and hunger.

It is also important to integrate IKS with exogenous knowledge since local farming systems at times face challenges that farmers are unlikely to be able to address without access to exogenous knowledge and information. Exogenous knowledge refers to the information made available to the rural community from the sources outside its boundaries as part of the information transfer process to support modernization (Mchombu 1995:124). The importance of improving the existing agricultural IK by integrating it with exogenous knowledge is well documented (Hart and Mouton 2005; Madukwe 2006). The integration adds value to local knowledge, innovations and practices rather than replacing them. For example, Dove (2000) found out that the successful production of rubber resulted from the confluence of indigenous and exogenous knowledge in Southeast Asia.

It is obvious from the aforesaid that not only indigenous knowledge is significant for reducing hunger and poverty but also exogenous knowledge is important too. However, poor people lack access to exogenous knowledge and information, as well as opportunities to share their own knowledge.

5.   The poverty-reducing potential of ICTs in the agriculture sector

Previous studies indicate that ICTs can positively enhance access to relevant information and knowledge to reduce poverty among poor farmers in developing countries (Gerster and Zimmerman 2003; Souter *et al* 2005; Soriano 2007; Wa-

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verman, Meschi and Fuss 2005). Access to ICTs has been growing rapidly and developing countries have embraced them in order to enhance socio-economic development and reduce poverty. Despite the rapid growth of ICT access and usage, the rural poor and vulnerable populations may have little opportunity or capacity to use or benefit from ICTs due to the digital divide. Uneven growth rates of ICTs access exist in many developing countries. For example, three quarters of all Africa's fixed lines are found in just 6 of the continent's 55 countries (World Summit on the Information Society 2005).

Similar divides are also found within individual countries, where rural areas tend to be marginalized in terms of access and use of ICTs. Although 19 telecentres have been introduced into some of the rural areas in Tanzania, access of the Internet and email services has remained predominantly confined to the urban areas (Tanzania Commission for Science and Technology 2005a). However, the major challenge is not only to increase the quantity and accessibility of ICTs in the rural areas but also to improve the access to relevant knowledge for local development.

5. 1 Approaches towards the application of ICTs in poverty reduction

Experiences from Tanzania and other developing countries will be discussed on the basis of the Sustainable Livelihoods Framework (SLF) of the Department for International Development (2001). SLF has widely been used to examine the contribution of ICT for poverty reduction in developing countries (Arun, Heeks and Morgan 2004; Soriano 2007; Souter *et al* 2005). The approach has also been adopted by the FAO's ICT programmes, for the reason that linking ICTs to sustainable rural livelihoods enables the poor to share knowledge and information that is significant to develop appropriate livelihood strategies and empower poor communities to participate in decision-making processes (Batchelor and O'Farrell 2003).

The major principles of the SLF approach include capital assets, vulnerabilities context, processes and livelihoods outcomes that are all related to poor livelihoods. The fight against poverty partly depends on access and use of five capital assets. The five major capital assets include (Batchelor and Scott 2001):

- natural capital: natural resource stocks used directly for production, or necessary to sustain life;
- social capital: social resources on which people draw in pursuit of livelihoods i.e. relationships, membership of networks;

- human capital: skills, knowledge, ability to work, good health which enable people to pursue different livelihood strategies;

- physical capital: basic infrastructure for the supply of energy, shelter, water, transport and communications, production equipment, markets; and

- financial capital: financial resources available which provide livelihood options, for example savings, credit, remittances, pensions.

This article uses the SLF framework to discuss the role of ICTs in managing IK and exogenous knowledge. Access to more livelihood resources/assets may help to reduce the poor's vulnerabilities and improve their agricultural livelihoods.

6. Role of ICTs for managing indigenous knowledge for poverty reduction

The usage of ICT to manage IK within and across local communities can improve cross-cultural understanding, enhance their well being and sustain their agricultural practices which they depend upon. In addition, IK management may lead to economic gain (access to markets, job creation, improved livelihoods); empowerment of communities; wide application of indigenous technologies; and promotion of community conservation of biodiversity (FAO and Vetaid Tz 2000). Experiences from Tanzania indicate that ICTs can be used to manage IK that may contribute to the reduction of hunger and poverty. The rural poor have been using ICTs available to them to acquire human capital in order to generate livelihood outcomes.

Tanzanians' farmers have been able to access knowledge and skills on the effective agricultural indigenous production methods through ICTs. For example, the Tanzania Development Gateway has enabled the rural poor to access agricultural indigenous production techniques in the local language "Swahili" (Tanzania Development Gateway 2007). Similar project have been set up in India (Traditional Knowledge Digital Libraries) to disseminate various types of IK and to prevent international companies from patenting the Indian IK (Traditional Knowledge Digital Library 2007). Other international agencies, such as the World Bank, CAB International, FAO LinKS project and Canadian International Development Agency (CIDA) have established research centers and websites to preserve and share IK (CIDA 2002; FAO 2007; World Bank 2007a). However, the impact of these national and international databases in managing IK of the rural poor is negligible due to the language barrier (most of the IK information is in English language), inappropriate packaging, poor ICT infrastructure in the rural areas, and low ICT literacy.

On the other hand, telecenters have contributed to the management of IK in the rural areas with reasonable success. For example, the Sengerema telecenters in western Tanzania has recruited several sectoral experts to collect local content in various fields. The experts gather information on issues such as indigenous chicken farming, use of organic manure and share this knowledge through the community radio and a website (Tanzania Commission for Science and Technology 2005b).

7. Role of ICTs for disseminating exogenous knowledge for agricultural development and poverty reduction

Apart from having limited ways to manage their IK, the poor also lack access to knowledge and information from the policy makers, researchers and business community which may be fundamental to reducing hunger and poverty. ICTs can improve access to exogenous knowledge and information that may meet the location specific information needs of the farmers (FAO 1998). ICTs can improve access to prices, markets and agricultural production information and knowledge (International Institute for Communication and Development (IICD) 2006:29) that may increase access and the use of capital assets such as social, human and financial within the SLF framework discussed above.

ICTs have contributed enormously to building and promoting social capital in Tanzania. ICTs have enabled farmers to interact with other communities at regional and national levels, thus reducing their social isolation. For instance, the experience from the Sengerema telecenter shows that the local community not only uses Internet communication but constantly communicate through the community radio instead of travelling long distances on bicycle and on foot (Tanzania Commission for Science and Technology 2005b). Studies done in India, Mozambique and Tanzania also indicate that telephones were largely used for social networking, particularly within the family (Souter *et al.,* 2005).

When it comes to financial capital, ICTs have been effective in raising the income levels of the poor communities and families in many developing countries. In Tanzania, the CROMABU telecenter and price information services are examples of how small-scale farmers have been able to increase their income through access to best market prices for their produce, as well as securing direct buyers from abroad through the Internet, especially when prices were low in Tanzania (Menda 2005). Apart from income gains, ICTs have also been influential in improving food security as demonstrated by the CROMABU telecenter and price information services in Tanzania (Menda 2005).

Further, access of information on market prices has empowered the local communities to make informed decisions regarding their marketing strategies. For instance, the Maasai pastoral people in northern part of Tanzania are now agreeing to sell their livestock and engage in marketing and businesses due to the Orkonerei Radio Programmes on food and nutritional security (Development Associates Ltd 2004).

Short message services (sms) are also used to effectively deliver market information through mobile phones to farmers in Tanzania. This sms project was implemented by the Ministry of Industry, Trade and Marketing, and Vodacom since 2005. Although, there has been no impact evaluation of this initiative as yet, evidence shows that many people utilize the service to request for information (Economic and Social Research Foundation 2007). Similar projects have been implemented in other African countries such as in Senegal, Benin and Zambia (Stienen, Bruinsma and Neuman 2007).

Exogenous knowledge gained from ICTs has enabled farmers to adopt new agricultural technologies that have improved their food security. For instance, the Agricultural Research Institute in northern Tanzania is an example of how a number of requests for agricultural information increased from farmers due to a weekly 15 minutes agricultural radio programme (William, Manyama and Schouten 2003:137). Further, telecenters have also been influential in equipping the local communities with the useful agricultural information. For example, the Sengerema telecenters in western Tanzania has enabled farmers and livestock keepers to search for information on agricultural chemicals (that is, herbicides and pesticides) and types of fertilizers from the Internet (Tanzania Commission for Science and Technology 2005b).

ICTs have also demonstrated greater impact on overall vulnerability in the developing countries including Tanzania. ICTs can effectively provide accurate weather forecasting and timely warning systems to lessen the effects of natural disasters, as well as improve crop yields and lessen the effects of severe weather or drought (World Bank 2007c). For example, in northern Tanzania, the broadcasts on breakouts of livestock's diseases through the Orkonerei radio station made quicker response from responsible parties possible (Development Associates Ltd 2004).

As far as livelihood outcomes are concerned, ICTs have shown a significant positive impact. ICTs have had significant positive economic impact as demonstrated by the CROMABU telecenter and price information services in Tanzania (Menda 2005). The information services it provides help farmers to effectively

utilise the existing knowledge to improve agricultural production. A study by Waverman, Meschi and Fuss (2005) examining the impact of ICTs in 92 countries (both rich and poor) revealed that ten extra phones per hundred inhabitants can lead to 0.59% extra annual GDP growth in a typical low-income country.

8. Conclusion and recommendations

ICTs are not a panacea, but they can facilitate the management of IK and the dissemination of relevant exogenous knowledge to achieve efficiency in agricultural productivity and poverty reduction. Further, ICTs can enable the rural poor to combine their assets to improve the agricultural livelihoods and expand their asset base within the SLF framework. Experiences from Tanzania indicate that the impact of ICTs for managing IK is mainly apparent in managing human and social capital (indigenous agricultural production techniques and networking knowledge sharing). On the other hand, the role of ICTs in disseminating agricultural exogenous knowledge also include financial aspects (better earnings and market prices) over and above the assets covered in the IK dimension.

Despite the fact that utilizing ICTs have the potential to reduce poverty, their effective use may be limited by the lack of relevant content, language, financial resources and ICT policies. To improve the situation, ICT strategies should be incorporated into agricultural sector policies and programmes, and the use of low cost ICTs options such as open source applications should be promoted. Pro-poor ICT investments and national budgets should be linked to poverty reduction strategy plans and specific sector plans. The dissemination of content should not be limited to the exogenous knowledge, but should also cover knowledge possessed by local people. Finally, mixed ICT options should be used such as mobile phones, radio, telecenters, television and loudspeakers to enable the local communities to effectively communicate information and improve their media literacy.

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THE SIGNIFICANCE OF MARKETING LIBRARY AND INFORMATION SERVICES IN ENSURING THAT LIBRARIES CONTRIBUTE TO THE ATTAINMENT OF THE MILLENNIUM DEVELOPMENT GOALS

Benson Njobvu

Abstract

The high poverty levels in Zambia and indeed most countries in East, Central and Southern Africa send a message to the general populace that it is no longer up to the governments to find ways of abetting it, but that organization such as libraries in the various countries need to join the fight. This paper establishes the importance of information in the development process. The paper underscores the significance of marketing libraries in helping in the attainment of the Millenium Development Goals. Steps of how libraries could develop market plans are outlined. Finally, Challenges which library staff may face in the marketing process have been outlined.

Key words

Information, Development, Millennium Development goals (MDGs), Marketing

1.   Introduction

The high poverty levels in Zambia and indeed most countries in East, Central and Southern Africa send a message to the general populace that it is no longer up to the governments to find ways of abetting it, but that organization such as libraries in the various countries need to join the fight. According to the report by the Department for International Development (DFID) (2008), Zambia's economic performance has improved in recent years and the economy is enjoying sustained growth of around 5.5% per annum. Zambia has also received extensive debt relief as a consequence of the G8 meeting in Gleneagles and Multilateral Debt Relief Initiative (MDRI). Zambia's external debt burden was reduced from around $7.1 billion to $0.5 billion. This means that the money that would have been used to pay back loans is now available to the Government to spend on health , environment and education and other priority sectors. The report also confirms that Zambia is performing well against some of the Millennium Development Goals (MDGs) particularly in primary universal education

and promoting gender equality in schools. Net enrolment rates for primary education improved from 63% in 2000 to 89% in 2005. However, more needs to be done if MDGs are to be achieved by 2015. Despite the introduction of free basic education in 2002, many girls and other vulnerable groups drop out of school before they complete primary school, largely due to poverty, and the impact of HIV and AIDS on families.

Good progress is being made in the fight against HIV and AIDS, malaria and other diseases, with indications that the HIV epidemic appears not to be spreading, and there are indications that there are fewer new infections in the 15-19 year old age group. According to China news (2008), HIV infection rates in Zambia appear to have reduced from 15.6% to 14.3 %. Services are becoming more widely available for the prevention of mother to child transmission (PMTCT) of HIV with over 90% of the districts having some PMTCT service sites. However while prevention efforts are improving, more still needs to be done. There are currently around 130,000 Zambians on anti-retro viral (ARVs) but this is only 40% of the estimated number of people who need access to these.

The current progress on the MDGs on poverty, hunger, child and maternal mortality and environmental sustainability targets is poor. Maternal mortality has increased from 649 per 100,000 between 1996-2000 to 729 per 100,000 A big effort is required if Zambia is to achieve these targets by 2015.

It is in the light of all this background that the vigorous participation of libraries in making information available would further enhance the efforts of achieving the MDGs.

2. Role information in development

According to Neelameghan and Akhatar, any economic, social and political system is likely to perform more efficiently if there exist within that system mechanisms, for ensuring that the functions, and tasks of gainful decision making, effective problem solving, planning, minimizing the chances of unnecessary duplication of effort, promotion of innovation are supported by the timely provision to all those participating in and contributing to the development process with relevant, up to date and reliable data and information.

Mathew (1986: 19) identifies information as a critical resource for development. The author is of the opinion that the inability of traditional or orthodox development theorists., economists, and statesmen to identify this critical resource results in the colossal failure of their efforts.

It can therefore be concluded that information is power that drives any development it be social, economic or political because all those engaged in planning need to have access to the best options in a particular situation. The Zambian people need to be well informed of the ills of not sending the children to school, destroying the environment, lack of maternal health programmes, lack of programmes of combating HIV/AIDS etc. Libraries have a critical role to disseminate information relating to these developmental issues. Libraries should use the marketing techniques applied by the corporate organizations to market services so that the Zambia citizens are well informed in their various disciplines.

3.   The importance of Marketing Libraries Services

The Chartered Institute of Marketing define marketing as a process responsible for identifying, anticipating and satisfying customer requirements profitably. While Kotler (2000: 4) define marketing as a social managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others.

Marketing is critical in as far as determining suitable products for the users is concerned. There are many times when library staff take users for granted and have ended up with our services un-tapped. On the other hand Chang (1996: 19) believes that most library users take it for granted that libraries are for students who study for examinations. The author continued to say that it is therefore imperative for public libraries to be marketed.

The marketing process takes the librarian through the product cycle which begin with the product idea generation and screening, the business analysis of the product, test marketing, product modification and offering the product to the users. Once the service has been introduced, it is incumbent upon the service provider in the library to ensure that they monitor the product life cycle through the stages which include the introduction, growth, maturity up to the time the uptake start declining.

Marketing is critical for libraries in that it enables library managers come up with promotional strategies which suit their users. The library managers think through the best channels to be used to communicate to the users of the specific libraries. Effective promotional mix include advertising, personal selling, public relations and lectures.

In the process of market planning, one is able to say whether the location of the library is convenient to users, and whether a choice of access though remote access would be best for the users. It is also very important when examining the

suitability of a place whether the opening hours of the library are in line with user needs.

Harper (1998: 115) contents that marketing of LIS services would be useful in the presentation of the new range of information services. He argues that marketing concepts help in arriving at some fundamental decisions about pricing. Library, staff have to ask the questions as to whether the charges demanded from users are in their interest.

Some of the charging strategies in practice today include price discrimination where users are charged differently in line with the market segments e.g. pensioners, students may be charged less than the well paid.

Offering discounts during events such as Christmas, New Year, would also attract a number of new users to the library.

Lastly but not the least, marketing is a critical tool for libraries to maintain their traditional users in the library. This can be achieved through understanding customer needs . Information services must retain users by ensuring that their information needs are being met by giving them services not offered by other libraries therefore retaining the competitive edge. Libraries should ensure that services are tailored to meet customer requirements. This can only be attained if needs of the users are constantly evaluated. It is also important that users are reached using the communication modes suitable to them. Regular consultation has also proved to improve the services of the library.

4. Steps in coming up with marketing strategies for libraries:

Background analysis

The first step in the marketing process is to analyse and review what a particular library has offered in the past and to critically think of what it will do in the future. Mohamedali (1999: 310) says that the initial analysis should involve a careful examination of the overall mission of the library and also of its collections , services, budgets, plans, reports, and any statistical information the library may have on library use and users. Some of the questions which need to be answered identified by Miller in Mohamedali (1999: 311) include

- What is the overall mission of the organisation which supports libraries?

- What services or products have the information professionals tried to market in the past?

- How successful/unsuccessful have they been?

- What are the current resources e.g. personnel, materials, financial?

- How good are the current services?

- Are they already promising people more than they can deliver?

- How likely are they to have the personnel, financial and material resources to sustain an increased level of services in the future?

- How much marketing can they really afford?

- Should they consolidate their existing marketing strategies or develop new ones?

Segmentation of users

The second step in marketing library services according to Cuesta and Mc Govern (2002) is to identify the segment of the target group of the library that you want to reach. Everything else in the marketing effort flows from this decision.

They say that the needs assessment process identifies a long list of pressing community needs that it becomes necessary to segment the market.

marketing efforts because you are afraid that you will disappoint the community with what little you have to offer. Or you may be afraid of being overwhelmed with the demand for services.

Some of the factors to be considered in narrowing down the focus of the initial marketing efforts include as identified by Cuesta and McGovern include:

- Size of the group within the community or emerging group within the community: To have the greatest impact at first, the specific focus of the marketing activities may need to be the largest or the fastest-growing segment of the target group. For example, the community may be experiencing a large influx of limited English-speaking immigrants from a specific country.

- Urgency of need: The results of your needs assessment may show that a specific segment of the target group has pressing needs that deserve immediate attention. For example, recent immigrants or refugees may need basic survival information about where to find adequate housing, how to get a job, or how to access medical services.

- Library resources available: Find a match between the needs assessment data and already-existing services or strengths of the library. For example, the data may show that parents are very concerned about the educational oppor-

tunities for their children. If one of the library's strengths is the variety and depth of children's services provided, this may be the focus of your initial marketing effort. Other strengths to capitalize on may include staff expertise, language ability, and size and depth of collection.

- Community or political concerns: The community may be facing a particular issue or problem that is of critical interest or importance. For example, community leaders may need immediate help in distributing current and reliable information about upcoming deadlines and changes in immigration policy that could result in deportation for many members of the community.

- Partnering opportunities: Other agencies and groups in the community may already be addressing a pressing need in the community, such as the need for information about changes in immigration policy mentioned above. The library's willingness to collaborate and be a part of this effort will help the library build trust within the community.

- Demands for service: There may be segments of the community that are particularly vocal and pressing for attention to their specific needs.

- Existing community contacts or strengths: The library may already have well-established contacts within a community that can serve as the focus of an initial marketing effort. For example, in the course of their general outreach activities, children's librarians may have made connections with a variety of different groups and agencies serving the target group.

Library staff need ton define and describe the library target community or segment as specifically and completely as possible.

Analysis of Resources

Once the segmentation has been established, it is necessary to find out what resources are required to carry out the marketing of the services. An indication of what resources that will be required to accomplish the marketing assignment can be achieved from the analysis and assessment done earlier of the weakness and strength of the collection, facilities, services, equipment, staff and finances of the library. It is sometimes possible that some marketing strategies may not require additional money at all.

5. Development of the marketing plan

It is critical at this stage to develop a market plan which should have specific and measurable objectives which should be consistent of the parent organiza-

tion. If the objectives of the plan are not consistent with the parent organization, it would be very difficult to obtain funding for the implementation of the plan.

Library Staff should ensure that the following Components of the plan are included:

- **Executive Summary**: which should include a brief introduction of your library and what services it offers. The mission of the organization should be included.

- **Describe the current situation:** Define where the library is at the moment, and where you want it to be in future. Outline the current users, the services being offered, the size of the collection and the current budget.

- **Market audit:** The competitor analysis is outlined in this section. The strength, weaknesses, opportunities and threats of the library are defined. An environmental analysis including political, economical, and technological of the area where the library is situated has to be stipulated here.

- **Marketing objectives:** It must be clear from here whether the aim is to open another library, introduce a new service or improve on the existing service. The time frame of when the introduction or improvement of a new service would be done should be clear.

- **Market strategy:** outlines the approach that will be used to achieve the plan's objectives. Here the 4Ps which include product, price, promotion and price are discussed in detail.

- **The action Plan**: Specific programs and activities are outlined here designed to meet the objectives, with timelines and assignment of tasks.

- **Budget**: This section details any financial constraints or profits.

- **Evaluation**: This section provides measures of assessment and feedback.

6. Challenges of Marketing Library and information services

Most librarians in Zambia and other countries do not market libraries because of a number of reasons which include the following:

Myth: There is a belief that libraries do not need to be marketed in any special way because their importance to society should be known to all. Most University libraries do not market their libraries because they say that the university already has a defined segments of users who do not need to be in-

formed about the library services. This has led to some of the university library services being underultilised or even not used at all. An example in point are electronic resources at the university of Zambia which at some point were not used, however with promotional strategies this was turned round.

Lack of training and education: Steadley (2003) notes that Often librarians do not promote library services well due to lack of training and knowledge of marketing tools and techniques. It has also been observed that although marketing is more widely discussed and accepted professionally than in the past, this acceptance hasn't necessarily resulted in more marketing classes in library schools' curricula. Despite the growing literature on library marketing, there remains a lack of familiarity with the total marketing concept among librarians. The University of Zambia Department of Library and Information Studies is just now in the process of introducing a full marketing course in its programme.

Money and attitude – Lack of funds is often used as a reason or excuse not to market library services. Although money should be available for marketing purposes, the attitude of library staff to users has a great impart on what users think about a particular library. Staff need to work harder to ensure that services are improved to the expectation of users. This has to start with library students who in most cases are ashamed of talking about their profession with their colleagues.

Lack of appreciation of library services by political leaders: Libraries in Zambia have suffered a high degree of neglect from the politicians. This has resulted in the country to date having no law in place to ensure that libraries are well coordinated and managed. This has resulted in libraries being at the mercy of the departments they have been placed under. In Zambia, public libraries are under the ministry of Education as well as the ministry of local Government and Housing. The two ministries have their core business which from the look of things does not include libraries. Librarians in the too ministries feel they have nothing to market.

Resistance to change: Most Librarians and libraries are limited by their traditional image – that libraries offer books for lending and provide services for children, but do not contribute to more sophisticated information needs. As long as this mentality is with the librarians, the battle of changing the way libraries could contribute to the MDGs will be lost.

7. Conclusion

It is important that libraries double up their efforts in contributing to the development process through the MDG platform. The adoption of the corporate world's marketing principles is part of the solution. However, librarians need to shake off some of their myths and beliefs in traditional practices if they are to be relevant in the current competitive world. The development of effective marketing plans is key to the survival of libraries in the midst of alternative sources of information such as the internet.

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THE ROLE OF LESOTHO ACADEMIC LIBRARIES IN THE ATTAINMENT OF MDGS

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and
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Abstract

The role of tertiary institutions is to produce highly trained manpower for the country. They also provide leadership in different fields of development including community service. In all their endeavours the library plays a pivotal role through its provision of informational resources and related services. For the library to contribute positively to the training of this manpower it needs to have certain things in place without which the product of the institution will be lacking in some aspects. These are the products that go out into the field as agents of development.

This paper will specifically look at the challenges faced by libraries of higher institutions of learning in Lesotho and how they may adversely affect the realization of the Millennium Development Goals (MDGs). The focus will be on the libraries of the following tertiary institutions: National University of Lesotho (NUL), Lerotholi Polytechnic (LP), Lesotho College of Education (LCE), Lesotho Agricultural College (LAC) and the National Health Training Centre (NHTC). These are the major institutions of higher learning in the country. The need for addressing the challenges faced by the libraries of these institutions cannot be overemphasized.

Lesotho as a member of the United Nations Organization is committed to the attainment of the MDGs as agreed upon by the member states. For the government of Lesotho to succeed in the realization of the MDGs it needs assistance of all its institutions especially higher institutions of learning of which libraries are an integral part. Libraries in these institutions play important roles of not only stocking various information resources to be used by their clients but they also impart crucial information skills into the users. Both roles are important in the attainment of the MDGs.

Clearly libraries should play an active role in the realization of the MDGs. By addressing the challenges faced by academic libraries in Lesotho this paper attempts to find the way forward in attaining the MDGs in Lesotho. The paper also highlights some of the programmes currently being undertaken by some

academic libraries in Lesotho that are inline with the efforts towards the attainment of MDGs.

Keywords: MDGs, attainment of MDGs, academic libraries, information literacy programme, higher education in Lesotho, challenges of academic libraries.

1. Introduction

Lesotho is a small mountainous country covering an area of 30, 355 square kilometres, of which only one quarter, in the west is lowland. The remaining three quarters consist of the highlands. The population of Lesotho is estimated to be 1.8 million (Lesotho Bureau of Statistics, 2006). However, more than half of the population living in rural areas is categorised as living in poverty, caused by factors such as drought, heavy snowfall and HIV/AIDS pandemic.

Lesotho is a proud signatory to the Millennium Declaration, which was adopted by 189 UN member states and signed by 147 heads of state and governments during the UN Millennium Summit in September 2000. The Government of Lesotho is committed to the achievement of the Millennium Development Goals (MDGs). The MDGs are drawn from the actions and targets contained in the Millennium Declaration (UN, 2000). These MDGs which are eight in number are:

- Goal 1: Eradicate extreme poverty and hunger

- Goal 2: Achieve universal primary education

- Goal 3: Promote gender equality and empower women

- Goal 4: Reduce child mortality

- Goal 5: Improve maternal health

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

- Goal 7: Ensure environmental sustainability

- Goal 8: Develop a global partnership for development (UN, 2005).

In addressing the ways and means of achieving the MDGs the Government of Lesotho has come up with pertinent strategies. For instance the Government has a vision of attaining universal primary education by 2015. It has also developed relevant documents such as the "Vision 2020" (Ministry of Finance and Development Planning, 2004) and "Poverty Reduction Strategy" (PRS) which lasted

from 2004 to 2007. Thereafter, the government began a process of updating and upgrading PRS into Lesotho Strategy for Growth and Poverty Reduction (LSGPR) starting from the period 2008/2009 to 2012/2013 aimed at achieving sustained and accelerated economic growth (UNDP Lesotho, 2007a).

With support from the UN Country Team the Government of Lesotho has developed a database tool known as Maluti-Info**.** This database will be used in the dissemination and monitoring of the MDGs, LSGPR, National vision 2020 and the Lesotho National Development Goals indicators. The Maluti-Info database has been made accessible to policy makers, private sector, NGOs and academic institutions. Obviously the libraries of academic institutions are expected to play a crucial role in the use and marketing of the database (UNDP Lesotho, 2007b).

For the Government of Lesotho to succeed in the realization of the MDGs it needs the active support not only of its various ministries but also of its higher institutions of learning, which according to Lor & Britz (2007:50-51) need to keep abreast of the changes in their environments. Needless to say, the higher institutions of learning are the producers of manpower upon which the successful implementation and monitoring of policies including those pertaining to MDGs depend. The role of the libraries of these institutions in the training programmes of their parent institutions cannot be overemphasized. Five academic libraries and challenges that they face vis-à-vis their contribution towards the realization of the MDGs in Lesotho are under the spotlight in this paper.

2.   Educational system of Lesotho

The provision of education in Lesotho is largely carried out by the Government, the main churches and the community. However, determination of curricula and syllabuses is the responsibility of the Ministry of Education. The Lesotho Government (2000) indicates that ongoing revision of the education system takes place and policy directions include provision of the following:

- Opportunities to develop competencies and education programmes, cultural values and activities that enhance individual and social development

- Sufficient numbers of individuals equipped with the appropriate occupational, technical and managerial skills to enable them to participate in socio-economic development

- Opportunities for continuing education through non-formal programmes in literacy and numeracy, and vocational and in-service training in private enterprises

- Active, cooperative partnership between all parties concerned in education management and service provision, with expansion of the roles of family and community in school activities

- Enhanced access to education.

These policy directions are meant to improve the human resource from early stages of learning to late adulthood. Once the human resource has been empowered with information literacy skills then their participation in socioeconomic development is likely to take place.

Within Lesotho's education system there are three main levels of learning namely: Primary, Secondary and tertiary levels of education. As a cosmopolitan country, Lesotho admits children of all nationalities in its schools and tertiary institutions.

2.1 Primary Education

Primary education is free in government and church schools and runs from standard one to standard seven for children aged between six and thirteen. The offering of free education in Lesotho was effected by the Government of Lesotho in 2000 (Lesotho Government, 2000). Similar to the example given by Chiobe (2006) free primary education enables the majority of poverty stricken rural poor children and HIV/AIDS orphans countrywide to have access to primary education and thus building on the literacy rate of Lesotho. Successful completion of primary education leads to secondary schooling.

2.2 Secondary Education

Secondary education includes both junior and senior secondary schooling which takes five years to complete. The Examination Council of Lesotho administers the examination at junior and senior level. Successful completion of higher level of secondary education opens the doors for admittance into tertiary or higher education. This includes the five institutions of higher education around which the discussion of this paper partly revolves.

2.3 Tertiary Education

The third level of education offered in Lesotho is tertiary or higher education. This type of education is offered by higher education institutions such as the National University of Lesotho (NUL). The Lesotho College of Education (LCE) is mainly concerned with training of pre-school, primary school and secondary

school teachers and it awards only certificates and Diplomas. The Lesotho Agricultural College (LAC) deals mainly with training in agriculture including Food production, Nutrition and Forestry. The LAC offers its programmes at undergraduate certificate and diploma levels. The Lerotholi Polytechnic (LP) provides technical and commercial training, which aims at meeting the demands of the local industry. The National Health Training Centre (NHTC) aims at training paramedics, nurses and social workers that will assist in the fight against HIV/AIDS pandemic and other common diseases. All five institutions of higher education are expected to produce quality graduates that will address the challenges facing Lesotho as they join the labour market. The UN system in Lesotho (2004:22) indicates that slow pace of job creation in the country has resulted in continuous poverty. McFarlane (2005:134) and Major (2005:18) are of the same opinion that the products of higher education institutions should be creators of jobs, not necessarily job-seekers, in order to foster development.

The administration and management of tertiary institutions is the responsibility of both the government and the concerned institution. The management and administration of the institution is run through the Senate, faculty boards and management committees. The main target of education in Lesotho is to attain universal basic education by meeting the demands for education for all (Lesotho Ministry of Education, 2006). The education programmes aim to address Lesotho's development requirements and to improve quality of products and the standard of living through efficiency, effectiveness and increased access to education (Kakoma, 1999). The government of Lesotho supports increased financial allocation to education and authorizes the National Manpower Development Secretariat division to effectively manage the scholarships (Lesotho Government, 2000).

The Government has made an effort to increase the number of universities within the country by allowing "Limkokwing University of Creative Technology" to establish a campus in Lesotho. This University was expected to be in full operation by June 2008 starting with six faculties (Lesotho Ministry of Education and Training, 2007).

3. The five institutions

The five higher institutions of learning whose libraries are the subject of this paper, are the major producers of skilled manpower in Lesotho. The government supports all the five institutions. These institutions are NUL, LAC, LCE, LP and NHTC. Each of the institutions offers various programmes and produces gradu-

ates that are qualified in various fields and at various levels of training. The local job market absorbs most of the graduates. The following is brief information on each of the five institutions.

3.1 The National University of Lesotho

Currently the NUL is the only university in Lesotho. It was established in 1945 as a Catholic College (NUL Public Affairs Office, 2006:1). It has evolved over its sixty-three-year history and is now a fully-fledged university offering programmes ranging from certificate to PhD in various fields (NUL Academic Office, 2007). Presently the student population stands at over 7000 (NUL statistics Office, 2007). The library of the NUL is not only the biggest but also the best equipped, the best-stocked, and the best staffed academic library in Lesotho. Apart from the main University library there are also two documentation centres, belonging to the Institute of Education (IE) and Institute of Southern African Studies (ISAS) respectively. Both institutes are based on the main campus of NUL.

3.2 Lesotho Agricultural College

This institution offers sub-degree programmes in Agriculture, Forestry and Home Economics. It has two campuses, the main one in Maseru and the other one in Leribe. All in all, the college has a student population of 600. It has a well-stocked library.

3.3 Lesotho College of Education

The Lesotho College of education offers programmes that lead to three sub-degree qualifications. These qualifications are: Certificate in Early Childhood Education, Diploma in Primary Education and Diploma in Secondary Education. The college has 992 students. It has a spacious and well-stocked library.

3.4 Lerotholi Polytechnic

This institution offers technical and commercial programmes at sub-degree level (LP, 2004). The student population stands at 1620. The library is spacious and is quite well stocked.

3.5 National Health Training Centre

Presently this institution offers only sub-degree programmes in Health Sciences. It has 410 students. The institution's library has just moved to newly erected purpose-built premises.

Out of the five libraries only one, the NUL Library, has a branch library. The branch library in question is based at the NUL's Institute of Extra-Mural Studies (IEMS). There are also plans to establish libraries at the three IEMS Centres situated in Mohales' Hoek, Mahobong in Leribe and Thaba-Tseka.

It is envisaged that when established, the libraries in all the IEMS centres will also serve users who will be undertaking training with the assistance of the Development Partnership for Higher Education (DelPHE) Project. This collaborative project sponsored by the Department for International Development (DFID) of the United Kingdom is a joint project run by the University of Dundee on the one hand and the NUL, specifically the Faculty of Health Sciences and the NUL Library on the other. The project will train health personnel through the distance education mode.

4. The situation on the ground vis-à-vis the five libraries

Like academic libraries elsewhere in the world as indicated by Mehra & Srinivasan (2007:123), the libraries of the five institutions, as catalysts for change, are there to support mainly the learning, teaching and research activities of their parent institutions. They support the three activities in as many ways. First, by acquiring relevant information resources. This is done in consultation with the teaching departments. Secondly, making the materials available to the clients on long-term and/ or short-loan basis and through having adequate opening hours. The academic governing body of the institution of learning normally determines the opening hours. Thirdly, the clients have to be taught how to effectively use the various information resources. Consequently many academic libraries have introduced User Education programmes and/ or Information Literacy programmes. The user education programmes or the information Literacy programmes are aimed at equipping students with information-seeking skills. In other words, the programmes are meant to produce independent information seekers and users. This is crucial given the great need for life-long learning. Obviously the attainment of the MDGs is dependent, to some extent, on lifelong learning activities (Clouston, 2005:54-55).

Clearly, the role of the management of the institution of higher learning must go beyond the exercise of erecting a library building. For any library to operate smoothly, it needs a reasonable annual financial allocation or budget. It also has to be adequately staffed. The need for the commitment of the institution's management towards the success of the functions of the library cannot be overemphasized.

4.1 Enquiry

As already stated the aim of this paper is to bring to the fore the challenges faced by libraries of higher institutions of learning in Lesotho. It is believed that these challenges impact negatively on the overall training offered in the institutions. This may in turn adversely affect the realization of the MDGs. In the quest for data librarians in the five institutions were asked the following questions:

- Do you know anything about MDGs?
- Does your library have deliberate efforts towards acquiring materials on MDGs?
- Does your library have materials related to the attainment of MDGs?
- Is your library automated?
- What is your library's annual budget for books and serials?
- What programmes are offered by the institution?
- Do you offer User Education/ information literacy programme?
- Is there any faculty-librarian collaboration?
- Does your library cooperate with other libraries in Lesotho?
- Do the students have any work-based learning programmes?
- Who are your library's clients?
- What are the challenges faced by your library?

In addition to the above questions some data had to be sourced or verified by observation and by consulting institutional documents in some cases.

4.2. Findings

The following account constitutes the findings based on the responses to the questions. All but one (NHTC) responded in the affirmative to question 1. In response to question 2 only two libraries (NUL and LAC) stated that their libraries have deliberate efforts to acquire materials on MDGs. To question 3 all responded in the affirmative. It should be specially noted that even the libraries which responded in the negative to questions 1 and 2, responded in the affirmative to question 3. This is so, because they acquired the materials through donations or through other default means. Upon further inquiries and discussions almost all librarians interviewed agreed that there was great need for their libraries to stock information resources on MDGs. They also agreed that they would undertake deliberate efforts to collect all the materials if not the pertinent ones, in order to meet the needs of their clients. Two librarians also indicated that many clients always inquire about the materials and they always refer them to other libraries especially NUL Library.

Automation or computerization of libraries of higher institutions of learning in Lesotho is yet to be undertaken by most institutions. Currently out of the five libraries only one (NUL) is automated. Of the remaining four, two (LCE and LP) are partially automated and the other two (LAC and NHTC) are not automated. Internet facilities are also hardly available in most of the libraries being looked at in this paper. It was stated that the lack of Internet facilities was frustrating to library users. The lack of current information resources such as academic journals in many of these libraries was supposed to be supplemented by library online databases such as EBSCO-host, HINARI, and AGORA. But the lack of both Internet and computers in these libraries means that clients cannot access online and off-line databases.

Financial support to most of the libraries is a source of concern. Apart from NUL library that has an annual allocation of over four million Maluti (M4, 000,000.00) for books and serials the rest receive much less than one million Maluti per year. As a matter of fact their financial allocations fluctuate from year to year. In short the four libraries do not have what may be termed as adequate budgets. Their acquisitions efforts are therefore adversely affected by this state of affairs. As a result librarians in these institutions are faced with the challenge of providing better services with grossly inadequate budgets. Given this unfavourable situation the librarians in the four institutions are of the view that their libraries should be allocated their own budgets which must be increased every year to cater for library inputs, outputs and outcomes. They emphasised the need to make presentations to relevant authorities.

Once again it is only the NUL library whose parent institution offers programmes leading to qualifications ranging from certificate to PhD. The remaining four libraries service mainly clients who pursue sub-degree programmes i.e. programmes leading to certificate and diploma qualifications. It is however important to note that most of the programmes offered are relevant to the realisation of the MDGs. This brings into focus the need for deliberate efforts by libraries to acquire materials on MDGs.

Three libraries (NUL, LAC, and LCE) responded in the affirmative to question 7, which was on User education/ information literacy. Currently all the three libraries offer this as a Communication Skills module of the first year compulsory English Course. However, the LP Librarian lectures to students about the library only during orientation or when requested by individual lecturers. All respondents agreed that information literacy is very important and were unanimous on the need to make it an integral part of the curricula of institutions of higher learning. This will enable the institutions to produce lifelong learners who are skilled information users.

Only one librarian (NHTC) responded in the negative to question 8. For those who responded in the affirmative (NUL, LCE, LAC and LP) they said they collaborated with faculty in the selection of books, training of students in library use, and faculty members are part of the library committee among other things. Strangely the librarian for the NHTC was the only one who answered in the negative to question 9, stating that the NHTC Library did not have any relationship with other libraries in Lesotho. This is strange given the fact that no library is self-sufficient hence the need for library cooperation through associations and consortia. The NHTC librarian was aware of the existence of the Lesotho Library Association (LLA) and the Lesotho Library Consortium (LELICO) but neither she nor her library participated in the activities of both bodies. The librarian regretted this situation and realised the need to correct it.

To question10 all respondents stated that the students in those institutions have work-based learning programmes. These include attachments, fieldwork, teaching practice, etc. These programmes expose students to various societal needs. The respondents generally agreed that work-based learning should be maintained by all institutions of higher learning because it provides creativity which involves critical thinking and greater responsibility.

All the respondents gave a similar answer to question 11. They stated that their main clients were students, staff and researchers. This is inline with the stipu-

lated role of their libraries which is mainly to support learning, teaching and research activities of their mother institutions.

The last question (12) was on the challenges faced by these libraries. Some of the challenges such as lack of computerisation and lack of information literacy programmes have already been stated. Inadequate budgets and poor staffing situation also rank high in the list of challenges. For instance the NHTC and LAC libraries are run by Para-professionals (both are diploma holders). It is a serious oversight that libraries of such big institutions could be run by para-professionals however efficient they may be. Definitely, with this calibre of staff in charge the full potential of those libraries will never be realised.

5.   Challenges vis-à-vis attainment of MDGs

The five institutional libraries being looked at in this paper service training and learning programmes of institutions that produce most of the manpower for Lesotho. Needless to say, the produced manpower is in various fields. The graduates of these institutions are supposed to be the agents of change in the various communities that they serve. It goes without saying that the attainment of MDGs is to a greater extent dependent on the participation of the graduates from these institutions.

It is a fact that the library plays, or is supposed to play a crucial role in the training of a student. This is the reason why the library occupies the central part in the philosophy of a learning institution. The modern academic library does not only stock information resources but it must also be pro-active in ensuring that clients are aware of the resources and that the resources are used. Among its other functions are carrying out orientation programmes and conducting user education and/ or information literacy classes. By embarking on such exercises the library is playing the important role of equipping the students with information-seeking skills. These skills come in handy even after the students have left the institution of learning.

For the library to succeed in its functions it has to be adequately supported. This support should be in the form of adequate space, financial resources for acquisition of information resources and equipment, above all adequate staffing in terms of numbers and training. Definitely all efforts, however good meaning they may be, will be futile if the staffing component is overlooked. All these are lacking in acceptable quantities and quality in most of the libraries dealt with in this paper.

It is not an over-statement to point out that most of the libraries as shown in the previous section have serious challenges in terms of inadequacies. Consequently, most of the graduates leave the institutions without information skills, which are crucial to lifelong learning. Similarly, due to inadequate pertinent resources in these libraries most graduates are not aware of the MDGs and of the role they are supposed to play in relation to their attainment.

6.   Library projects and MDGs

One wonders whether it is by design or not that the NUL library hosts three major projects that coincidentally are related to MDGs. But given the "best supported" status that it enjoys in the country the NUL Library had to host projects. One of these projects also mentioned by Nelson & Farrington (1994:21) is the Question and Answer service (QAS) of the Technical Centre for Agricultural and Rural Cooperation (CTA), which provides answers to questions by farmers and agricultural workers. The other one is the DelPHE project which is a collaborative initiative between the University of Dundee and NUL, aimed at training health workers based in different parts of Lesotho through the long distance learning mode. The third and final project is the Lesotho Development Information Centre (LDIC). This centre receives and makes available to clients information resources from cooperating partners. The partners are: The World Bank, National University of Lesotho, Food and Agricultural Organisation of the United Nations, United Nations Children's Fund, World Health Organisation and United Nations HIV/AIDS.

The LDIC is a partnership initiative of the World Bank and other development agencies that are active in Lesotho. It was established in 2005 at the NUL main library to promote the use of and access to development knowledge and to improve the effectiveness of development programmes in Lesotho. The centre, which is open to the general public, researchers, policy makers, and students, has an abundant and ample source of development information.

Compared with the other four libraries the NUL is steps ahead in terms of contributions towards the attainment of MDGs. Its aggressive weekly collection trips to government departments, publishing houses, and to all likely sources of publications has helped it to acquire numerous publications on MDGs besides the ones donated to the DIC. Unfortunately, for inexplicable reasons the other four libraries do not have a similar acquisition strategy. As a result their collections of information resources about MDGs are quite minimal. This does not augur well for these libraries because their clients specifically students are disad-

vantaged by not having access to a wide range of materials on MDGs. What more that the attainment of MDGs is a topical subject in Lesotho.

7. Observations and conclusions

The attainment of MDGs is the ultimate desire or aim of all the signatory states. To achieve this aim countries such as Lesotho need the support of all and sundry especially higher institutions of learning whose libraries should play an active role in the area of information provision. The current situation in the Lesotho libraries of higher institutions of learning vis-à-vis MDGs call for more concerted efforts. The paper has highlighted a number of constraints inhibiting the expected levels of support from these libraries to the efforts towards the attainment of MDGs in Lesotho. Among the most serious inhibitions being faced by some of the librarians are poor staffing situation, inadequate budgets, lack of automation and lack of computers for Internet services. These are serious problems, which require the attention of those in charge of the parent institutions. Clearly, the individual librarians in those institutions need the assistance of the Library Association for the message to be heard and taken seriously. Otherwise this state of affairs in which these libraries are, will continue year in and year out.

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RE-THINKING BOUNDARIES IN THE AFRICAN LIS WORK PLACE: A CONTRIBUTION TO THE ATTAINMENT OF THE MILLENNIUM DEVELOPMENT GOALS

Jaya Raju

Abstract

In the context of the historical influence of British and American trends on the African LIS context, the current knowledge society, as well as Africa's challenges in terms of the Millennium Development Goals, this paper reports on the work-in-progress in an aspect of a wider study currently being undertaken in South Africa. The aim in this aspect of the study is to interrogate how current technology trends are impacting on LIS work place qualification and competency requirements. The intention is to re-visit traditional boundaries and demarcations in the interest of the growth and development of African LIS workers who in turn may contribute to meeting the Millennium Development Goals in a number of creative and innovative ways. A qualitative research approach was employed, using semi-structured interviews to collect data from purposively selected managers and staff from a sample of academic, public and special library services in South Africa. The paper emphasizes the need for LIS in Africa, particularly in the context of the current knowledge-based society and the harsh realities facing African communities, to contribute to the attainment of the MDGs in Africa. In attempting to make this contribution, the paper recommends that the African LIS work place must not allow itself to be constrained by qualification and other work place boundaries that are legacies of the past, as evidenced in the limited study reported in this paper which demonstrates lessons of innovation as well as instances of restriction.

Keywords: LIS-Africa, LIS-South Africa, Millennium Development Goals

1. Introduction

The historical influence of British and American trends on the African library and information services (LIS) context is well documented in the literature, notably by Rosenberg (1999). Western values and priorities have implanted themselves both in LIS education and in the LIS work place in Africa. Okolie (2003: 254) usefully points out that while we in Africa should not "reject useful and useable elements of western civilization", we must also understand that African

development must be guided by African realities; indeed such realities as reflected by the Millennium Development Goals.

African development models, be they in education or in the work place, do not have to travel the same route advocated by our western counterparts. Dependency theorists have attacked these development and modernization routes for stifling Africa's growth and development and for deepening imperialism in Africa and leading to African underdevelopment. Hence the African LIS work place needs to re-think qualification and work place boundaries not only to more fully utilize its education products and in the process contribute to their growth and development but, importantly, to provide critical information required for everyday survival in many African communities as well as information for other development purposes.

The knowledge economy, influenced largely by rapidly advancing ICTs, has generated many opportunities and much excitement for information professionals. Automation of information-related functions has led to much down-shifting in the work hierarchy with support staff or paraprofessionals taking over many tasks that traditionally had been the domain of professional LIS workers, leaving the latter to engage in other value-added services to users. These changes present an ideal opportunity for us to re-visit old boundaries and demarcations often developed in a western context to meet western needs.

Toward this end, this paper reports on an aspect of a wider study currently being undertaken in South Africa; this study is researching the development of a LIS work place model that makes efficient and resourceful use of products of LIS education from different types of tertiary education institutions. Data is currently being gathered via semi-structured interviews with purposively selected managers and staff from a sample of academic, public and special library services in South Africa. The aim is to interrogate how current technology trends are impacting on work place qualification and competency requirements. The intention here is to re-visit traditional boundaries and demarcations in the interest of the growth and development of African LIS workers who in turn may contribute to meeting the Millennium Development Goals through the creative and innovative provision of information needed for literacy development, for everyday survival by many local African communities, for research projects working on African research problems, for knowledge creation needed for African development, and so on.

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The purpose of this paper is to report on the work-in-progress of the study mentioned. The paper presents this in the context of Africa's challenges in terms of the Millennium Development Goals.

2.   Millennium Development Goals

In 2002 the United Nation's Millennium Declaration committed the world's countries and development institutions to a series of goals that address issues such as poverty reduction, environmental conservation, gender equity, education and health. These goals, better known as the Millennium Development Goals (MDGs), are built into a framework of targets and indicators to measure world progress towards the achievement of these goals by 2015. The MDGs are particularly geared towards developing countries such as those in Africa, many of which are gripped by poverty and hunger, the HIV/Aids pandemic, ethnic conflicts, high debt burdens and weak governance structures often plagued by corruption. While there has been significant progress made in some countries, for example Ghana and Nigeria (Cleeve & Ndhlovu, 2004: 10), progress towards these goals in the world as a whole has been slow (Casal, 2007: 4).

3.   Africa's challenges

The United Nation's Millennium Declaration recognizes that African countries face particularly difficult development challenges as they are "largely marginalized from the benefits, while being exposed to the threats of globalisation" (Cleeve & Ndhlovu, 2004: 10). Furthermore, they are often plagued by internal constraints such as those already mentioned above as well as others such as political strife and natural disasters such as floods and droughts. Based on United Nations monitoring, it is claimed that Africa would not achieve most of the MDGs, including halving poverty and achieving universal primary education, by 2015 (Mutula, 2005: 592). While social indicators reflect hardships of populations growing faster than social services and economies can cope with (Dent, 2007: 205; Ahmed & Cleeve, 2004: 20), growth across the continent remains uneven. Botswana, for example, is the only African country to have shown consistently strong growth in terms of income per capita and GDP with similar trends in Mauritius and Seychelles, while Ethiopia, Burundi and Sierra Leone continue to record the lowest incomes in Africa (Ahmed & Cleeve, 2004: 20). South Africa has achieved a remarkable reduction in child malnutrition, while life expectancy rates in Sierra Leone remain low (Ahmed & Cleeve, 2004: 24-25).

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Notwithstanding difficulties in economic and social progress in most parts of Africa in the decades following independence and with aggregate economic performance of the continent remaining weak, Ahmed & Cleeve (2004: 12) claim that the new millennium shows "renewed signs of economic progress and broader commitment to reform" in response to initiatives such as the MDGs. These reform efforts, they insist, "need to be sustained, strengthened and directed towards the attainment of the Millennium Development Goals". As the gap between the rich and poor of the world widens, particularly as a result of the effects of globalisation, initiatives such as the MDGs seek to improve the living conditions of the poverty stricken of the world. How then can we in the LIS profession, especially in Africa, make our contribution to the attainment of the MDGs?

4. The LIS profession

It has been well documented in the literature (Raju, 2007; Rosenberg, 1999) that African LIS education and training, historically, has been influenced by British and American trends. This emulation of western models was inevitable given that in the pre-independence era African librarians generally trained abroad or engaged in distance education with institutions abroad; and that in the post-independence era, assistance and funding and even academic staffing came from the west in the setting up of the first library schools in Africa (Rosenberg, 1999). Thus western values and priorities were imported into the African LIS context. Curriculum content too tended to be based on what was taught in the United States of America and in the United Kingdom.

However, more recently African scholarship generally has de-emphasized Euro-American values with higher education and research striving to reflect the lived experiences of the vast majority of Africans. Okolie (2003: 235) in his call for knowledge production in higher education for sustainable African development, appeals for African-centred higher education where African ideas, knowledge and ways of knowing are affirmed and promoted. This is reiterated by Raseroka (2005: 4) in her call to help bridge Africa's knowledge divide, where she appeals to African scholars and librarians to "stimulate knowledge creation and its analysis by local researchers and communities [and] thus stimulate rigour in the critical analysis of local research issues". LIS education and research in Africa, which is located in higher education, too needs to heed these calls particularly in view of efforts to strive for the attainment of the MDGs. LIS curriculum design and research should empower Africans "to deal with their peculiar conditions and fast changing … information environment" (Mambo, 2000: 391).

Likewise, LIS services too need to make a contribution to these efforts. According to Raseroka (2005: 4) African populations generally lack the "requisite high level and varied types of needed literacy skills" required for access to critical information, particularly electronic access which, in the current knowledge society, is the dominant mode of access to information. Furthermore, this mode is dependent upon the existence of complex information and communication technology (ICT) infrastructure. Such infrastructure is poorly distributed, or even non-existent, among many African populations (Kari, 2007: 364; Raseroka, 2005: 4). African countries, in many instances, cannot afford investment in digital content, ICT awareness and skills, and Internet infrastructure, particularly in the vast expanses of rural areas (Kavulya, 2007: 212). These factors reinforce the information access divide that hinders Africa's meaningful participation in a true knowledge society; a society that affords equitable access to information by all communities and which indeed is required for African development in various sectors. Hence, Africa remains marginalized from the benefits of globalisation. Library and information services have a significant role to play in helping to bridge this divide. Examples of such contribution include making creative efforts towards literacy development of African populations, using innovative methods (e.g. repackaging) to make information needed for everyday survival available to local African communities and providing access to research outputs published abroad to scholars based in Africa and who are working on African research problems (Raju, 2007: 4).

5. The knowledge society

The knowledge society, driven largely by rapidly advancing ICTs, "has brought about a whole range of opportunities and excitement … the changing roles of information professionals has been a result of these inevitable forces" (Tin & Al-Hawamdeh, 2002: 331). In this knowledge-based context, increasing information needs and demands have prompted a global trend where LIS paraprofessionals or support staff take over the role of professionals "in providing basic reference service, thereby releasing the professionals to provide other value-added services to users" (Tin & Al-Hawamdeh, 2002: 333). Likewise, in many areas of information work particularly where there has been the automation of functions, paraprofessionals are being assigned tasks that were previously solely the domain of professionals (Neal, 2006). Significantly, this downward shift in the work hierarchy has resulted in much task overlap and blurring of lines between responsibilities of LIS professionals and paraprofessionals. In fact the Congress on Professional Education (COPE), held under the auspices of the American Library Association, relevantly pointed out that if information tech-

nology has changed the nature of work in libraries, then this calls for the contents of many jobs to be re-evaluated and re-defined (Congress on Professional Education (COPE), 2003). Is it perhaps not time then for us, especially in Africa, in the context of critical information required for everyday survival in many communities (e.g. dissemination of medical, preventative and other health related information) and hence for the attainment of important MDGs, to more fully utilize the skills and knowledge of LIS paraprofessionals (as argued by the author elsewhere (Raju, 2007)).

As also argued previously (Raju, 2007), this paradigm shift is also relevant in the context of many school leavers in Africa coming from severely disadvantaged educational and economic backgrounds; thus in many instances they are not able to access the more elite traditional universities but are in many cases able to access vocational institutions such as universities of technology and polytechnics (a case in point in South Africa), and thus emerge as paraprofessional LIS products after three years or so of study. Such available skills and knowledge should be harnessed not only for the provision of required LIS services needed for the attainment of the MDGs, but also for the educational development of these individuals themselves so that they too may grow and develop and in turn impact on the growth and development of African society and thus on the attainment of the MDGs. 'Information capabilities' on the part of both providers and users "can act as agents of change for individuals and communities enhancing their abilities to engage with formal institutions in the economic, political, social and cultural spheres of their life" (Casal, 2007: 5), and in this way take African society forward. Why then do we have to, in terms of qualification and work place requirements, adhere to demarcations and boundaries developed in a western context to meet western needs. Africa has its own development challenges unique from that of other parts of the world. Our qualification and work place requirements should be dictated by these challenges. Lessons for such a paradigm shift may be drawn from the following report on the work-in-progress of an empirical study currently being undertaken in South Africa.

6. Empirical study

This paper reports on just one aspect of a wider study (explained in the **Introduction**) currently being undertaken in South Africa. In the context of the current knowledge society which is being driven by rapidly advancing ICTS and which has led to the global trend of task overlap and blurring of lines between responsibilities of LIS professionals and paraprofessionals, this study, among other issues, interrogated the following:

If technology has significantly altered the nature of work in the LIS environment as evident in the literature (that is, in many areas of LIS, work is no longer carried out in the manner in which it used to be done), then have job functions devolved in response to the changing technology.

The author is currently gathering data via semi-structured interviews with purposively selected managers and staff from a sample of academic, public and special library services in four provinces in South Africa which house major LIS services of the country. The aim is to interrogate how current technology trends are impacting on work place qualification and competency requirements. The intention is to re-visit traditional boundaries and demarcations in the LIS work place in the context of changes and opportunities presented by the knowledge society. Although these interviews are still in progress, the researcher has completed most of them in one of the four provinces (KwaZulu-Natal) and wishes to report on some of the trends evident thus far. In total 12 interviews have been conducted: In each of four major academic libraries in the province a director or senior manager was interviewed and a group interview was conducted with three staff members (one with a traditional university LIS qualification; one with a technikon (now called university of technology) LIS qualification; and one staff member with no formal LIS qualification). The same was done with the major public library service (with about 90 branches) operating in the province. Special libraries are a different breed, being small departments within large organisations, and hence the head of each of the two special libraries surveyed thus far was interviewed. Each interview lasted between 50 minutes and an hour. The researcher worked from a semi-structured interview schedule, using different interview schedules for managers and general staff, with special library heads getting a mixture of questions from both interview schedules. However, the design of the schedules had enough common ground for purposes of triangulation of responses from the two groups of interviewees.

While other data collection methods were employed as part of the research design of the wider study mentioned, the particular aspect of the study being reported in this paper used interviews to interrogate the issue in question. Understanding LIS work place behaviour called for a qualitative research approach which according to Babbie & Mouton (2001: 270) investigates social reality by studying "human action from the perspective of the social actors themselves" (in this case LIS managers and staff). Interviews as a data gathering method, "the most frequently used technique in qualitative work" (Alvesson, 2002: 107) was used to gain access to the research subjects as this method allowed the researcher to focus on the aspect of social reality under study in its 'natural set-

ting'/in the 'real world' which would allow the researcher to try and understand the LIS work environment in all its complexity, an important aspect of qualitative research (Leedy & Ormrod, 2005: 133). Having collected empirical data in this way the researcher then carefully examined it for patterns and trends to understand and explain how current technology trends are impacting on LIS work place qualification and competency requirements.

In attempting to do this, it was evident that each LIS service surveyed had its own complexities and idiosyncrasies (context) that influenced the way it operated – which is what the qualitative research approach, as mentioned above, attempts to take into account in social enquiry. For example, each of the special libraries surveyed so far is so confined to the subject of the service that it supports (e.g. law or medical science) that there was very little that could be drawn by way of lessons for the wider LIS context. The importance of the LIS service, particularly in the knowledge context underpinned by ICTs, and the contribution of the incumbent operating the service are almost subsumed or overshadowed by the presence and work of specialists (lawyers, scientists, etc.) often to the dissatisfaction of the LIS worker in terms of: recognition as a professional; remuneration; job title/designation; library budget; additional assistance; little opportunity for upward mobility; and being required to engage in work from photocopying up to budgeting and providing a virtual information service for company users based sometimes nationally and even internationally. Much of the job, particularly about the subject area, is learnt 'on the floor' and hence a LIS degree or even a LIS diploma and some information work experience are general qualification and competency requirements for such positions.

The public library surveyed, on the other hand, with its almost 90 branches, over 500 staff in 10 districts with libraries servicing urban centres and outlying areas offers some important lessons for and is perhaps closer to the central theme of this paper, that of LIS and Africa's MDGs. As part of the transformation agenda in South Africa, public libraries are being made increasingly accessible to the historically disadvantaged communities, particularly in the rural areas. It is therefore not surprising to find that in more recent years the huge public library service surveyed has shed its erstwhile policy of only employing traditional university graduates (with an academic focus in their four-year training) as professional librarians and now also employs in this category, university of technology (UoT – previously called technikon) graduates, with a technological focus in their four-year training. Furthermore, UoT diplomates (holders of the three-year national diploma in LIS) may be appointed as paraprofessionals in Assistant Librarian posts, instead of, as was done in the past, being bundled together with

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Library Assistants who have matriculation (year 12) as their minimum qualification requirement. This shedding of old demarcations imported into the library system from foreign models indeed does allow for some career progression especially for those who, for economic or educational reasons, have only been able to access vocational institutions such as the UoT for their LIS training. Mobility within the system is further facilitated by the fact that labour unions, which are very active in the municipality and which by their very nature are acutely aware of the need to provide workers with development opportunities, have insisted, according to the District Manager interviewed, that experience requirements for positions be kept to a minimum – for example, for the position of Librarian, one year's experience in a library environment is required and not necessarily experience at a professional level. Senior posts such as those of District Managers and Deputy Director in the public library service do not require advanced qualifications in LIS such as Honours and Masters but a basic four-year LIS qualification with, obviously, an increase in the number of years of experience in a library environment.

Perhaps in terms of Africa's development challenges outlined in the first half of this paper, adjusting such boundaries in terms of local needs is not only realistic but also opens the way for LIS services to contribute to the attainment of the MDGs rather than being constrained by colonial legacies imported into our work environments. Okiy (2003: 126) realistically points out that rural dwellers in Africa are largely "characterized by ignorance, poverty, apathy, and illiteracy", and therefore cannot be "adequately served by print-oriented information media that use a language and format that is irrelevant to them". A public library servicing such a rural environment would need to tailor "its services to accommodate the non-literate rural majority" (Okiy, 2003: 126). Information required for making informed decisions in whatever context (health, crop production and other agricultural and economic activities, political and social contexts) needs to be supplied in alternative mediums such as oral, audio, visual or even electronic formats. The question to be asked is: Does the role of transferring this required information to the rural masses in an accessible format need to be carried out by a graduate who has spent five years at university (a professional LIS requirement in the west) and who might even be reluctant to work in rural areas? Could the role of assessing rural information needs and repackaging and remodelling information so that it can reach the rural populace to meet their needs, not be fulfilled by paraprofessionals based in the community and who have had exposure to basic training in LIS services from, for example, a polytechnic and not necessarily with a traditional university-based full professional LIS qualification. Struggling African economies are more likely to be able to afford the latter in

terms of human resources and, further, this provides opportunities for the educational development of local people. Hence shifting qualification and experience requirements to suit local needs, as we have seen in the South African public library example, is necessary if we in LIS are serious about contributing to the attainment of the MDGs.

The demands on an academic LIS service, however, are different because of the more intellectually sophisticated user population. Nevertheless, here too we can do things differently from the developed world, in order to contribute to the MDGs. Among the academic libraries surveyed, those based in the traditional universities continue to maintain traditional boundaries in terms of qualification and competency requirements. Here LIS graduates from traditional universities occupy professional positions (e.g. Cataloguing Librarian and Subject Librarian) and those from UoTs, including those with a four-year Bachelor of Technology (B.Tech.) degree, occupy support or paraprofessional positions (e.g. Library Assistant and Senior Library Assistant). Those academic libraries located in the universities of technology, however, employ LIS graduates from both the traditional university and the UoT in professional positions while holders of the three-year diploma in LIS from the UoTs qualify for paraprofessional positions (e.g. Assistant Librarian). The library of one of the UoTs (located in a township and therefore perhaps more sensitive to development needs), breaks traditional ground even further by regarding the diploma in LIS from the UoT as a requirement for entry level professional positions (Assistant Librarian) with routine clerical duties being allocated to incumbents (Library Assistants) who have no formal LIS qualifications. Once Assistant Librarians acquire their fourth year at a UoT (B.Tech.) they move up a grade and become fully fledged Librarians. Staff career progression is obviously a priority in this LIS service. The Director of this particular academic library service discourages the use of the label 'paraprofessional' as she believes that it does not allow for progression of staff in the work place. Senior positions involving management functions in all the academic libraries surveyed require senior LIS qualifications such as Honours and Masters (and rightly so because of the demands on the service from a teaching, learning and research community often located in a knowledge-based and ICT driven context), with the UoT libraries also including here the Master of Technology (M.Tech.) qualification. In terms of experience requirements, all of the academic libraries surveyed require multiple years of experience especially for professional posts with some libraries insisting on professional experience and others not.

It is evident from these findings that academic libraries located in traditional universities are still very Anglo-American in their outlook and resist embracing the new role functions that the university of technology (B.Tech.) graduate can contribute in a technologically advancing academic library environment. Technology has re-defined the information environment and the LIS profession is "re-defining itself to meet the challenges of the changing environment" (Omekwu, 2006a: 243). The time is opportune then to re-visit traditional work place boundaries, largely imported from the west, to meet development challenges that are particular to the local African context. Is it perhaps not time to change our qualification boundaries and re-define roles of professional, paraprofessional and other support staff as information technology particularly in a tertiary education environment, increasingly, allows people to seek information without the direct help of LIS personnel. This diminishes their role as information intermediaries to take on other roles such as developing strategies to manage technology and information in the knowledge age, repackaging and remodelling of critical information, literacy development, etc. Yet all of the LIS contexts covered in the survey so far, while enthusiastically admitting that technology has dramatically altered the traditional nature of work in the LIS environment, show no systematic and structured efforts at re-evaluating and re-defining all posts in the system as a response to the changes to traditional LIS roles brought about by technology (except for sporadic instances of responses to technology demands (e.g. creation of posts such as Electronic Media Librarian, Systems Librarian, IT Officer, etc.)). Many of the designations currently used in LIS services are exactly what they used to be fifteen to twenty years ago, yet technology has over this period almost re-defined the information landscape, and work place nomenclature should creatively reflect this re-definition. Admittedly, one might argue that the nature of some LIS jobs are essentially the same even though the processing tools have changed, but nevertheless these very tools (technology) have in many instances forced re-organising of the work hierarchy (as the literature reflects). It is this shift that creates opportunities for re-evaluating and re-defining the content of posts which should reflect itself in the choice of job title nomenclature. As Omekwu (2006a: 243) points out, the LIS profession should be "re-defining itself" ... "to meet the challenges of the changing environment".

If properly harnessed "the Internet offers [a] platform for unfettered global access" to Africa's rich cultural heritage (Omekwu, 2006a: 253). Africa may be deficient in ICT systems and infrastructures compared to other parts of the world but it abounds in undocumented indigenous knowledge (Omekwu, 2006b: 857; Mutula, 2004: 283-284).   University of technology graduates by virtue of the

nature of their technology-based training, are in an ideal position to harness Internet capabilities to the benefit of African society. The African continent is "being fast-forwarded into the digital revolution" (Omekwu, 2006a: 254), so why not use such available skills to globalise local African content and national knowledge assets and thus help make Africa an active and valuable participant in the global knowledge society .

Mutula (2004) emphasizes the benefits for Africa in developing digital libraries particularly the opportunities they present for Africa to create local content so that school and university curricula and African research need not be dependent on foreign content with formats and values that that are not relevant to African communities. LIS graduates with technology-based education from universities of technology and polytechnics are well placed to develop such digital libraries. Therefore the LIS work place needs to re-think traditional boundaries so as to allow it to make use of such available skills for the betterment of African society.

7.   Conclusion and recommendation

Africa's challenges are numerous and often daunting and more so in a globalised context of unequal participants. It is therefore imperative that every sector of African society make an effort to address these challenges. However the continent's development, particularly in the context of the current knowledge society which is being propelled by rapidly advancing ICTs, must be guided by African realities as reflected in the Millennium Development Goals. Thus the African LIS work place must not allow itself to be constrained by qualification and other work place boundaries that are legacies of the past imported into our environment from foreign contexts, as evidenced in the limited study reported in this paper which demonstrates lessons of innovation as well as instances of restriction. LIS work place boundaries and demarcations must be informed by local African needs, bearing in mind that within the African continent itself these needs will vary and would require appropriate responses. Only such a paradigm shift, particularly in the public and academic LIS contexts which are significant role players in the African development arena, would allow African LIS services to make a meaningful contribution towards the attainment of the Millennium Development Goals in terms of: literacy development; provision of critical information for everyday survival in poverty stricken African communities; supporting African research and knowledge creation towards addressing African research problems; and developing strategies to manage technology and information to help bridge the information access divide so that Africa can make meaningful contributions in a real knowledge society. Re-visiting traditional qualifi-

cation boundaries and other LIS work place demarcations in the context of local African needs would also promote the growth and development of African LIS workers, who are critical role players in striving to attain the Millennium Development Goals.

As LIS in Africa we have a moral obligation to contribute to what Ahmed & Cleeve (2004: 12) described as Africa's renewed commitment to economic progress and reform in the new millennium. In attempting to meet this obligation we must be bold and innovative enough to break traditional ground (as some are already doing) to make the LIS work place relevant to African needs, and thus make a contribution to alleviating the suffering of African communities which is what the Millennium Development Goals are ultimately aimed at.

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MAINSTREAMING NATIONAL LIBRARY AND INFORMATION SERVICES FOR THE ATTAINMENT OF MDGS: A CASE FOR THE NATIONAL LIBRARY POLICY IN ZAMBIA.

Charles B. M. Lungu

Abstract

The Zambia Library Association has been pursuing the idea of establishment of the National Library Policy since 1985. The Ministry of Education through the Zambia Library Services embarked on a renewed effort to establish a National Library Policy (NLP) for Zambia in late 1998. As was the case with previous attempts, this effort appears to have been worsted or abandoned along the way to the extent that to-date, there still is no National Library Policy for Zambia. As a consequence library developments have been negatively affected in terms of numbers, collections, staffing and sense of direction. For this reason, Zambia has trailed behind library developments in other countries in the SCECSAL sub-region because it lacks a national policy. The task of attaining the MDGs requires that as a country Zambia possess basic information services as can be provided under a well articulated national library policy.

National Libraries have a national duty and obligation to provide needed information as underpinned by the NLP directions in order to alleviate illiteracy and poverty. Such empowerment comes from well-planned library services. The absence of a NLP has slowed down the development of libraries and the library profession in Zambia, thereby affecting the country's preparedness to implement the MDGs. In basically all the MDGs, information or knowledge stand out as the primary commodity for empowerment.

The NLP guides the National Library on how best to harness, store and disseminate the national information resources in order to address the functional element of information, whether it be the eradication of illiteracy or the removal of ignorance. Zambia needs the National Library Policy to be adopted before information can effectively play its role in the attainment of the MDGs. Because of this importance of national library services, this paper seeks to argue that the establishment of the National Library Policy should be treated with such urgency and attention as to be considered the ninth MDG for Zambia.

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Information, Libraries and the MDGs.

Information is a very important resource for any form of development. Availability of the relevant information depends upon either the physical existence of information services like libraries, or adequate access to information available world-wide through the Internet or other means. Libraries constitute the institutionalized organization and management of information in a manner that it can be logically collected, stored, documented and consulted by anybody needing it.

As storehouses of information, libraries constitute a reliable source of information for any planned development. Consequently the development of the MDGs cannot be entirely successful without the use of information as a factor in development. The development of MDGs is not exempt from the need for organized information services to support it. Thus libraries as organized collections of information are an important factor to the development of MDGs. When the UN designed the 8 MDGs in 2000, it must have assumed that either all countries in the developing world had adequate information resources to support the MDG development strategies, or were prepared to develop necessary information services to support the process of establishing the MDGs.

The Significance of National Library Policies

A National library policy is a plan adopted by an individual country defining how its information resources need to be organized. Basically NIPs are formulated to pool the full potential of the available national information resources through the optimization of certain library services at national level, or the capacity to develop such national information services. Since some types of libraries need to be recognized as national resource centres for the transfer of information and knowledge, and as agents of fostering friendship and mutual understanding among the nations of the world, their management needs to be enshrined in some form of national policy. It is important to recognize the fact that the services of some types of libraries go beyond the demands or needs of the parent institutions but instead focus on the needs of the country as a whole. Those libraries whose mandate is to manage the nation's memory need to be guided by policies and strategies that support the overall development strategies of the nation.

The relevance of national information policies according to UNESCO as quoted by Niegaard (1999, 2) is that NIPs, including considerations of informatics and

telematics, are the key to coping with the challenges of the Information society. There has to be a complete re-examination of traditional information policies in the virtual, interactive, highly volatile reality of cyberspace, particularly in the framework of legal and ethical issues. UNESCO further observes that many developing countries are now struggling to 'catch-up with the industrialized.

A national library policy is a precursor to legislation that will define the establishment, organizational structure, funding arrangements, the services to be provided, and the clientele to be served by such libraries. National library development that is not planned or coordinated adds very little value to the information needs of any country. For purposes of meeting the MDGs, it follows therefore that countries still without NlPs will need to mainstream the development of such policies as a matter of urgency. It is imperative that the nation's information resources are organized in a manner that is responsive to any planned development as enshrined in all the millennium development strategies.

Basic Functions of National Libraries.

The concept of national libraries worldwide evolved out of the need to preserve national literary achievements for the benefit of future generations. Collection and storage of such material was the original pre-occupation and distinctive function. The advent of scientific and technological research and achievements accentuated the need to conserve such records of the nation's genius. Since such records increasingly became expressed in different formats, the conservation theory also included literature expressed in different formats (e.g. manuscripts, facsimiled on film, musical notation, and embossed characters on glyphs, maps, sound and electronic).

Other national library functions include legal deposit, coverage of foreign literature, maintenance of the National Union Catalogue and production of national bibliography, national bibliographic information services, planning and coordinating Inter-library lending services, and special services to disadvantaged groups. Additionally we even have special service national libraries such as national medical libraries or national science libraries, etc. Special national libraries usually specialize in specific subject collections, or focus on special groups of clientele such as the physically challenged. The bottom line about the identity of national libraries is that their clientele is the entire nation and not just the parent institution.

National Library Services in Zambia and policy implications

Zambia does not have a National Library as such (Lungu,1981:91). What it has is a distribution of national library functions among a number of different libraries. The Zambia Library Service is, in effect, the national 'Public and School Library' service. This is because it is basically a network of public libraries distributed in provincial and district centres country-wide. It is neither a legal deposit centre for local publications, nor does it manage a National Union Catalogue; it does not publish a national bibliography, nor does it have any bibliographic control authority.

The University of Zambia is the de facto national 'Reference Library' because it is the largest library in the country. Though it was declared as a 'National Public Library' by the Ministry of Education in 1967, there is no legal backing to that declaration. It receives no special funding from Central Government to sustain the 'national' status. The National Institute for Scientific and Industrial Research Information Service is the de facto 'National Science Library'. This is because it houses the largest collection of scientific publications in the country. It has no legal backing either. The National Archives is the 'National Legal Deposit Library. This is because it is the only library recognized under the 'Printed Publications Act', suggesting that copies of all local publications would be deposited there. However is pre-occupation is in managing government archives.

It is evident therefore that these developments evolved out of the activities of these institutions as they interacted with other forces either within or outside the respective parent organizations. They were not guided or influenced by any centralized national policy direction, or plan. Other than the National Archives which is guided by the 'Printed Publications Act', none of the remaining institutions is protected by any form of legislation.

The need for national library policy and library legislation therefore stems from not only this broad and unplanned distribution of recognizable national library functions, but also from the fact that these developments are not in any way centrally coordinated. Zambia needs a national library policy to create a roadmap for the development of nationally oriented library services. The current arrangement is that the principal loyalties of these libraries are to their parent organizations.

The History and Character of the elusive Zambia National Library Policy

Upon noticing the need for national library policies in Zambia, the library fraternity organized its first seminar in September 1985. The major purpose of this seminar was *'to debate, at the national level, and suggest concrete proposals that could assist in the formulation and implementation of a national information policy in Zambia'*. (ZLA, 1988: 3). During these early years, there was no distinction between 'information policy' and 'library policy'. This conference did not go beyond recommending that *'the party and its government (should) effect a national information policy, backed by appropriate legislation to guide the organization of our libraries, documentation and archival services so as to improve their utility to the nation'*. (ZLA, 1988, 88). In other words, the conference presumed it to be the responsibility of the party and its government to both draft such policy and provide for its legislation.

The next conference on this issue was in 1987. This was influenced by a number of factors. First it was the realization that the job of drafting the policy had been wrongly expected to be that of the government. Secondly, there were some regional developments such as the UNESCO sponsored SADCC conference in Tanzania in 1985 to which some Zambian information experts had been invited to discuss the issue of information sharing. This was followed up by the appointment of a consultant to undertake a feasibility study to examine the nature of resource sharing activities in Botswana, Malawi, Zambia and Zimbabwe. The SADCC conference and the appointment of a consultant by UNESCO inadvertently supported Zambia's own efforts to develop the NIP this far.

Building on the 1985 conference, the main objective of the 1987 conference was *'to prepare a document for the establishment of national information policy and library legislation in Zambia'*. This effort was planned to have a three-pronged approach namely;

- 'to sensitize national authorities on the need for and elements to be included in a national information policy for Zambia;

- to examine relevant issues on national information policy and the problems thereof with particular reference to Zambia's own social, economic, cultural, political. Scientific and technological context;

- to produce a draft document reflecting the thinking of information generators, producers, organizers, collectors and facilitators of information transmission as well as information users'. *(ZLA, 1988, 4-5)*

The major achievement of this conference was that it made an initial attempt of suggesting the basic components of the NIP. It is also worth noting that the two conferences included papers and participation from librarians, information scientists, and information users such as researchers, IT specialists, Broadcasters, as well as external participants from IDRC and UNESCO who sponsored the conference.

Between 1992 and 1993 the Zambia Library Association spearheaded the drafting of a Library Bill which was submitted to Cabinet. Although a committee of Cabinet approved the proposed Bill in principle, it was sent back to the formulators for further consultation and refinements. Discussions on the Bill continued throughout the intervening years until 1998 when another Draft Bill was made. However it was at this point when it was realized that the Bill needed to be supported by a policy document. Later the same year the Permanent Secretary in the Ministry of Education tasked Zambia Library Service to come up with a library policy document for Zambia Library Service.

The ZLS subsequently organized the workshop to draft the NIP in December 1998. Participants at this workshop were drawn from ZLS, the National Archives (NAZ), National Institute for Scientific and Industrial Research (NISIR), The University of Zambia (UNZA), The Copperbelt University (CBU), and the Ministry of Education Headquarters. The distinction between 'library policy' and 'information policy' became necessary this time around because the journalists and computer experts had also joined the chorus for national information policies covering their professions.

This workshop formulated the National Library Policy whose mission statement was:

> "To enable libraries contribute to personal and national development through planned and coordinated library services" *(MoE.1999, v)*

The policy document provided for the establishment of a National Library Service Council under the Ministry of Education whose major function would be to coordinate the development of library services in the country. The NLP provided for nine strategic directions as follows:

- **National Library Council**: To establish and legislate for National Library Service Council;

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- **Access to Information**: To ensure that all categories of users in all locations have access to information;

- **Capacity Building for Library Services**: To build libraries, as repositories of information resources which are vital to all human activities, into effective instruments of national development;

- **Coordination of Library Services**: To coordinate library services in the country in order to promote resource sharing and provision of a cost–effective library service;

- **Information Resource Mobilization**: To maximize the availability of information resources through various methods of acquisition;

- **Library Service Delivery**: To facilitate availability of information resources through various specialized library services to meet the needs of various user groups;

- **Information and Libraries in Society**: To promote in society, an appreciation of libraries so that they are perceived as critical strategic institutions where information may be accessed;

- **Regional and International Cooperation**: To participate in regional and international programmes and activities which are conducive to the development of national information resources as well as facilitate the sharing of resources regionally and internationally;

- **Information Technology for Libraries**: To harness information technology for library applications to enhance library operations and resource sharing at local, national and international levels". (Ministry of Education. 1999, 15-22)

Since 1999 there has been no follow up and the Ministry of Education is no longer pursuing the process of formulating the NLP. However, in 2007 the Zambia Library Association submitted the 1999 policy objectives to the developers of the 5th National Development Plan through a petition by members of the Association both at home and in the Diaspora. Indeed few of the objectives have been incorporated in the 5th National Development Plan, but the major idea of establishing a National Library Policy still remains unresolved to date.

It should be noted that the MoE inspired attempt to develop a NLP actually fell short of covering the needs of the entire national library spectrum in the country. Not even the University of Zambia library which also comes under the same ministry was covered under this effort. For the four institutions that dispense national library services in Zambia there are three different parent ministries. There is the *Ministry of Education* for ZLS and UNZA, then the *Ministry of*

Home Affairs for the National Archives and the **Ministry of Science and Technology** for NISIRIS. The question has always been which is the most appropriate ministry to develop a national library policy, and provide the necessary legislation for it? Is it possible to have one policy for all national library services, or several policies according to number of parent ministries? In formulating the current draft NLP, it was considered that the **National Library Council** would address the needs and functions of the other national libraries outside the Ministry of Education as part of its mandate.

The Consequences of the absence of NLP in information management

Zambia has existed without a national library policy for over forty years now. As a consequence of not having relevant library development policies evidence of lack of meaningful development abounds. Below is a list of some of the consequences for dillydallying or procrastinating in establishing policy guidelines for development of national library services:-

- *No national library planning directorate*. Each line ministry plans for the development of its own library. The overall picture of such development at national level can never be even. A national library planning directorate would look at the entire spectrum of generating, publishing, disseminating, storage as well as bibliographic control of national information, and determining which of the existing or future organizations should take up which responsibility. The absence of the national library planning directorate has made even those institutions that are responsible for certain national library functions to become complacent. This is because there is no monitoring organization to assess progress, or the lack of it. The absence of the planning directorate has also denied those institutions performing national library functions to be accorded appropriate funding from the state.

- *No coordination of library services*. That national library services are distributed among no less than four institutions requires that such services be coordinated at some point. The current situation is that there is no such institution mandated to perform this job. The only attempts at coordinating any library services are those spearheaded by Zambian Library Consortium (ZALICO). The need for coordination in national library service provision is particularly essential since the existing national libraries fall under different ministries. Coordination generates cost-effectiveness in providing such dispersed national library services. The idea of the National Library Planning Directorate is evident, and this role can be defined in the NLP.

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- ***Slow, uncoordinated library structural developments***. One rarely hears about any new state library buildings coming up anywhere around the country. It is a fact that since independence in 1964 Zambia has produced thousands upon thousands of school leavers, college graduates, etc. It is this growing crowd of literate people that need libraries to obtain relevant information from. Yet there has been no corresponding development of such library and information services.

- ***No jobs for new graduates from the Library Schools***. The Library and Information Science department at UNZA has produced hundreds of librarians since its inception in 1966. So has Evelyn Hone College as well as the Zamtel College. The rate at which these graduates are being absorbed in employment is however, very low. It is even more saddening to note that even the upcoming educational institutions are opting to employ non-qualified (or insufficiently qualified) librarians. National library policies would ensure not only planned development of library services, but also influence the employment of qualified staff. Nationally planned library services would have in-built standards of operation including levels of staff deployment. Specialized functions in national library services would also create markets for specialized training requirements which would also have a feedback effect to these training institutions.

- ***No Collection Development Policies***. Collection development policies are roadmaps indicating how and in which direction library collections should grow. Collection development policies for national libraries would provide guidelines on what subject areas to focus on. Where national library functions are distributed like in Zambia, collection development policies would guide these institutions on what areas to concentrate on to avoid unnecessary duplication, determine the individual institutional budgets, determine how such resources will be distributed, shared or accessed, and ultimately encourage institutional specializations. Collection development policies also guide in terms of what donations to either solicit for or accept.
  That Zambia has had no NLP has meant that collections in libraries shouldering national library responsibilities have been developed by accident rather than by design. This explains the accidental nature of the establishment of these institutions as national libraries.

- ***No Collection Development Budgets***. Where there are no collection development policies there will be no collection development budgets. The institutions performing national library functions have used own initiatives to develop whatever collections they are now associated with. The fact that national library status has been claimed by some libraries performing specific

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functions makes such claims superficial as such developments were accidental and not planned for. Parent organizations performing national library functions have neither publicly sought for separate funding to sustain the national library functions, nor introduced separate budgets for sustaining these national collections. With this situation, these collections cannot truthfully be claimed to be either comprehensive, or up-to-date. A National Library Policy would have influenced the enactment of relevant legislation to guarantee collection development budgets.

- ***Poor Access to (free) electronic information resources***. Access to e-resources as provided through either PERI or eIFL is very poor. Usage statistics from both these organizations attest to this low uptake by Zambian users. If on the other hand the national library network was properly and formally organized it would have been one obvious channel through which to administer such offers. Usage of such resources and maintenance of user statistics would have been some of the obvious tasks of these national libraries as such responsibilities would have been clearly articulated under a national library policy.

- ***Decision makers not alert to role of libraries in development***. Since the role of national libraries in development has not been clearly defined in any policy document, there is no pressure or compulsion on major stakeholders like decision-makers, to provide any library services at all. There is nobody feeling guilty about the poor state of our 'national libraries' as they do not feature in any of the tasks or strategies assigned to them. Alemna (1995, 31-36) also identifies lack of awareness by government officials of information uses among other obstacles Africa in general faces in creating library policies. If the NLP existed such compulsion would have been there and someone would have been expected to deliver on them. Without this pressure there is no real political will to develop the national library services that would in turn support all development programmes, including the MDGs.

- ***Nationwide Poor Reading habits***. Zambians generally are said to have poor reading habits. Reading is considered utilitarian, and only those who need to pass examinations have reason to read. This is a very poor synopsis of a nation as a lot of knowledge associated with all forms of development can be gleaned through reading. One of the tasks expected of national public libraries is the promotion of reading, especially among school children. The absence of a policy that would define such a responsibility makes the task impossible to achieve. Promotion of reading habits is especially essential in countries like Zambia where reading is not a natural pastime. The NLP

would provide for the identity of the institution(s) to manage and also provide for the financial scope within which to undertake the responsibility.

- ***No information Mobilization through the NUC***. One of the important responsibilities of national libraries is the maintenance of a National Union Catalogue (NUC) of collections available in all national libraries. This function has not been possible in Zambia to date because of the lack of policy identifying the institution to carry out this task. Early efforts by ZLS never matured into anything purely due to lack of cooperation from some libraries who considered ZLS to have no mandate to demand such cooperation. The function of linking national library databases is now possible using ICTs. However, this remains a theoretical possibility as some of the national libraries still maintain manual records. That information available in current Zambian libraries cannot be accessed from one location is a problem that can be solved by appropriate clauses in the NLP.

- ***No special focus on specific needs of specific user groups***. There is a special library in Zambia dealing with the special needs of the physically challenged. This is but one such institution in the country and can be said to be addressing the needs of only Lusaka-based users. Other national library services have no obligation to develop collections for such user groups. The NLP would remove this bottleneck and make it mandatory for as many libraries in the country as possible to address the needs of such groups as well.

- ***Slow uptake of ICTs by libraries***. Zambian libraries have recorded a slow uptake of automated library services in general. To date there are only two libraries that have automated library databases. This problem restricts the amount of resource sharing that can be conducted among libraries. It is also expensive for readers to physically travel to these libraries when their databases could be searched online. The NLP would, among other issues, define the need for application of ICTs in the management of our major national libraries, as well as define acceptable parameters to facilitate the sharing of our library resources.

- ***Poor Regional and International cooperation in resource sharing.*** Zambia is not faring well in terms of resource sharing internationally and regionally. Part of the problem is due to the slow uptake of ICTs, other reasons have to do with coordination activities. There are so many services that have been developed in the region like the African Digital Library, as well as those available internationally that Zambia has not been able to benefit from. The availability of NLP will not only define such cooperation as a national library function, but will also delegate such a responsibility to relevant institutions.

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Information management and the MDGs

In order for Zambia to meet the millennium development goals it will require a well managed, cost-effective and organized information base. The focus of all the MDGs is based on the assumption that there will be adequate information resources to guide the various countries in their quests for achieving the MDGs. This assumption is not only erroneous as has been illustrated by the Zambian situation, but also dangerous because no meaningful development can be planned on the assumption that relevant information to execute it will be available somehow. Somewhere in the proclamation of the MDGs there should have been a statement or statements alluding to not only the need for information mobilization, coordination, access, distribution and sharing among information services, but also elaborate plans for availing it where it did not exist.

National libraries constitute the collective memory of a nation. They need to be carefully planned for, and organized to ensure that the collection of this memory is systematic, that the collected memory is sustained, and properly preserved for posterity. National library policies ensure that these national memory banks are managed in a planned manner that will ensure the efficient collection, documentation, storage, distribution and dissemination of the nations' accumulated memory. The media fraternity has been lobbying for the enactment of the 'Freedom of Information Bill'. In a situation as Zambia is in, the bill will do little to make most information available. This is partly because national libraries whose mandate would have been to collect and store such information have no policy support to enable them to develop such collections.

Another point to make is that information will be necessary for the sustainability of the MDGs. When a country has a national library policy that is responsive to the needs of the MDGs sustainability is by design ensured. Achieving the MGDs is one thing, but it is not an end in itself. In order to sustain the MDGs that would have been achieved there is need for stakeholders to remain empowered by the knowledgeable on the sustainability of the achieved goals.

Way Forward – The ZNLP as the 9th MDG for Zambia

From the above discussions it is obvious that Zambia will need to '**mainstream**' the establishment of the NLP not only to meet the MDGs, but also to sustain them along with other national development plans. In recent years, good governance, democracy, transparency and accountability have become the catch phrases for national development especially in developing countries. I dare sug-

gest that libraries and information services constitute the most basic and relevant institutions for achieving these noble goals. National library services are usually available to all citizens, both rich and poor. Their collections are broad-based in subject coverage, thus covering the interests of everybody. Libraries neutralize ignorance and functional illiteracy, thus empowering the individual to interact with information to suit specific demands. However, just like a disorganized library is of no use to an information seeker because one cannot locate any specific information, the absence of national library policies is a recipe for a chaotic national library service.

The way forward for Zambia, and any SCECSAL member in the same predicament, is to mainstream the establishment of relevant policies for the development of national library and information services. For Zambia the situation is so critical that it needs to treat this assignment as the ninth millennium development goal.

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LIBRARIES RE-LOADED IN SERVICE OF THE MARGINALIZED

Juliano M. Kabamba

Abstract

Attainment of the Millennium Development Goals (MDGs) is a high priority development initiative of the United Nations and the concerned national governments in partnership with the international community. However, the responsibility to meet specific MDGs includes numerous players. Public libraries are expected to play a critical role given their strategic position to impact on ordinary lives in the communities in which they operate.

In most countries in Sub Sahara Africa the profiles of public libraries leave much to be desired. Funding bodies struggle to justify requests for more investments in public libraries while the larger population; the intended beneficiaries, generally find public libraries irrelevant to improving their socio economic circumstances.

The concept of a public library is essentially Eurocentric and elitist. The way public libraries are structured and function tells a story of institutions that are engineered to serve a relatively more educated and technologically sophisticated population. By and large public libraries are a luxury of the working class and the schooling society. As such people at the lower stratum of society; the poor, illiterates, unemployed and rural communities are primarily excluded. And yet it is the underprivileged and the marginalized that we should be targeting if public libraries are to be seen to be playing a meaningful role in national building in general and the realization of the MDGs, in particular.

Why are public libraries failing to meet information needs of the social groups that are less privileged? Why should it be that information needs of the poor are still unfulfilled many years after independence?

This paper is intended to identify basic flaws in the governing principles and functionalities of public libraries. More importantly the paper contends that there is need for a complete overhaul of public libraries in Africa. This will be necessary to arrive at a more inclusive and relevant community development information system: An information system that will be uniquely African and one

that will help to advance the mission of the Millennium Development Goals to alleviate poverty and mitigate the suffering of the African people.

1.0 Introduction

From inception the journey of public libraries in Africa has been very bumpy for reasons well documented in literature. Some of the key issues are discussed. The main thrust of this article is that public libraries as we know them today have failed the cause of the majority of Africans who are disadvantaged and marginalised. A radical shift to the general principles underpinning public library practice is proposed to give way to a recipe of an 'African public library': A model which is essentially based on relationship building and networking.

2.0   Millennium Development Goals

The United Nation member states adopted the Millennium Declaration and the Millennium Development Goals (MDGs) in 2002. The goals have since become a universal measure of development and a basis upon which developing countries can work together with development partners to fight poverty and improve the socio-economic circumstances. The majority of MDGs targets have a baseline of 1990 and a target date of 2015.

Half way down the line progress was reported (UN, 2007) in a number of areas but many challenges were also identified. For example in one of the primary goals it was noted that "The number of extreme poor people in sub-Sahara Africa has leveled off, and the poverty rate declined by nearly six percentage points since 2000. Nevertheless, the region is not on track to reach the goal of reducing poverty by half by 2015" (UN, 2007:4).

There are many factors that could contribute to achieving millennium goals. At national level one can single out economic growth, public investments and good governance as fundamental. Needless to mention that national effort alone may not be sufficient to meet the challenge. It is expected that the international development partners will rise to the occasion to honour their commitments to scale up national investments.

Having stated that it must be empasised that the responsibility to attain the MDGs does not only lie in the ambit of national governments and global development partners. It is an imperative that extends to a large body of organisations including provincial and local governments, municipalities, private entities and civil society. Public libraries, in whatever domain they might fall, are expected to play a critical role to support the attainment of the millennium goals.

3.0 Public good of Public Libraries

According to the IFLA/UNESCO Public Library Manifesto a public library is a "gateway to knowledge" which should provides "…basic condition for lifelong learning, independent decision-making and culture development of the individual and social groups"(IFLA, 2004). The manifesto highlights the mission of public libraries to foster information literacy, education and culture and looks at a public library as a vehicle for peace, development and spiritual growth.

One remarkable attribute of a public library is that it is expected to open its doors to all and on equal basis without prejudice to race, gender, religion, education, language, sex or social status. In this light a public library could be seen as a 'public good'; a social investment that prepares society for citizenship, democracy and development.

4.0   Libraries for fun

The purpose of public libraries, and their uses, has been an arena of curious contestations for many years. The globally acclaimed public good of public libraries, as agents of citizenship and development, often contradicts the pattern of use.

As early as 19th century library circulations statistics in the United States leaned more in favour of popular fiction (Akst, 2005) at the expense of educational materials. This provoked a raging debate on how to confront the overwhelming demand for fiction. Some libraries responded by scaling down on fiction holdings and one library in Pennsylvania took a more drastic decision by deciding to completely cut out fiction literature. It was only at the turn of the twentieth century that it dawn on many public library authorities that "the public preference for books of little or no educational value was an enduring one" (Akst, 2005).

Subsequently, in 1947, the Carnegie Foundation commissioned a large scale study of public libraries (Akst, 2005). The primary focus of the study was the

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purpose of public libraries. This study once more validated earlier observations about the preponderance of reading for leisure. The study, commonly referred to as the Public Library Enquiry, noted that much of public libraries use was recreational. "Most was fiction, most reference questions were simple, and most of the users, rather than proletarian hungry for knowledge, were comfortable middle class." (Akst, 2005).

The debate has continued to the present. With the advent of the Internet a new era has been ushered in. Public libraries are increasingly used as centres for e-based communication and information transfer. And of course a large portion of it is all for entertainment.

5.0   Study space rules

Africa offers an interesting point of contrast to the United States experience. School children have invaded public libraries in large numbers. The adult population is in the minority (Issak, 2000). The influx of the school going population in public libraries does not necessarily mean that public libraries are well stocked with school textbooks or curriculum based learning materials. Neither does it imply that children and young adults are more conscious and appreciative of the wealth of knowledge and information to be found in public libraries.

What appears to be the case is that school children are being attracted by the public space available for study purposes. In a research paper on information needs for poverty alleviation in urban poor communities (Mchombu, 2007:11) it is noted that adults and learners identified an existing community information centre as crucial to support education given that most homes in the community were 'too small' and did not have electricity, study tables and chairs. By and large school children find public libraries as convenient places for study; to complete their 'home work' and prepare for class tests and examinations.

6.0   Creating opportunities

Why should public libraries take centre stage to address the challenges of the Millennium Development Goals?

Seemingly the cardinal manifestation of underdevelopment in Africa is extreme poverty. It is therefore not surprising that eradication of poverty stands out as the key challenge to attainment of the millennium goals.

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Poverty is a humiliation to human civilization. It disrupts the entire fabric of human existence; culture, norms and traditional practices. It deprives people of choices and exposes them to the bondage of ignorance, diseases, insecurity, exploitation and discrimination. For these reasons public libraries will be well advised to embrace human development as a philosophical basis for advocacy and for programme of action.

Human development is not so much about the wealth of a nation but setting a foundation upon which society can create opportunities to improve social and economic conditions. According to UNDP (2007/8) human development borders on creating a platform that will assist people to realize their full potential and lead productive lives as they deem fit. In this respect human development can be described as a process of empowerment that will enable individual members of a community to access food, health, shelter, sanitation, education and other value adding attributes of modern life.

If empowerment is so crucial to fight poverty then access to information becomes the most powerful driver to make the disempowered become aware of options and opportunities that may lie ahead of them. It is generally acknowledged that knowledge is at the centre of development (World Bank, 1999). This places libraries in a very strong position to fast track attainment of the millennium goals.

7.0 Colonial legacy

Perhaps the most fundamental challenge facing public libraries in sub-Sahara Africa is the question of identity and relevance (Kabamba, 1999). It is not unusual to see a public library in an urban area however library services provided are essentially alienated from the communities they are intended to serve. Literature is abounding with evidence suggesting that there has been an underlying mismatch between the ideology, structures and activities of public libraries on one hand and the aspirations of the African people on the other.

It is common knowledge that Africa adopted public library models based on Anglo-American systems (Hart, 2007). Many pioneer librarians of independent Africa received library education overseas in countries such as the United States and the United Kingdom. The library education received was hardly appropriate to material conditions in Africa (Mostert, 2001). Similarly the curriculums of library schools that were opened in Africa were also influenced by imported library models that had little or no bearing to the political and social-economic situation prevailing in Africa (Issak, 2000).

In the same spirit public library products and services have also failed to find expression in the information needs and wants of the African masses. Depending largely on printed matter, acquired from colonial masters and other economically advanced countries, public libraries have, at best, appealed to the marginal information interests of the educated. Thereby leaving the information needs of the vast majority of the semiliterate, illiterate and underprivileged populations unfulfilled (Alemna, 1995).

The organization of public libraries into compartments that are better understood by librarians would not make an average man, with little or less education, feel welcomed. On the other hand the restrictive rules and regulations, coupled with penalties for noncompliance, could actually serve as a barrier to access public library services (Brain, 2005).

8.0   Compounding factors

The reality is that even Africans who are considered to be more enlightened in western languages and knowledge systems are not adequately catered for by public libraries. Most public libraries are chronically under resourced. Undue reliance on book donations, deployment of untrained staff to provide services and lack of capacity to analyse information needs have not helped the cause of public libraries in Africa (Dent & Yannotta, 2005). Economic hardships confronting many African countries and inability of governments to recognize the significance of libraries have made conditions far worse for public libraries whose existence largely hinges on government subventions. It is noted that "In the majority of cases, the government guarantees only payment of salaries and does note finance any activity within the sector" (Issak, 2002:12).

Many other factors have contributed to the current state of public libraries in Africa. Among such factors are the high costs of reading materials, weak local publishing industry, illiteracy, inadequate literature in indigenous languages and scarcity of materials that represents the 'world view' of Africans. For example, in the Western Cape; one of the more wealthy provinces of South Africa, one study notes that there were less than 1% of publications in indigenous languages in public libraries sampled (Ocholla, 2006). This is a dismal performance for the richest country in Africa that is constitutionally obliged to promote access to information in all eleven official languages that include ten indigenous African languages.

9.0 Library groupies

In general the reach of public libraries in Africa in terms of people served is unimpressive to say the least. Statistics on pattern of use of public libraries, in proportion to the intended user community, are hard to come by in literature. However there is sufficient evidence to suggest that public library services have very little meaning to communities they purport to serve. Mchombu (Mostert, 1998) writes that "Less than 2% of the population in Tanzania and approximately 5% in Botswana use libraries". Citing a UNESCO source on the number of users of public libraries in Uganda in 1992, it is observed that "… only 53,000 registered library users out of a population of over 20 million" (Dent, 2005:39). This represented a negligible 0.3% of the total population. South Africa; a country believed to have the most sophisticated public library system in Africa (Lor, Helden & Bothma. 2005:268) only attracts less than 10% of the population (Hart, 2007:15). In contrast a poll conducted in 2002 for the American Library Association noted that 62% of the adult populations were reported to be registered members of public libraries (Akst, 2005).

10.0   Alternative Information Services

The Library Association (Alemna, 1995) defines community libraries as "Services which assist individual and group with daily problem solving and with participation in the democratic process. The service concentrates on the needs of those who do not have ready access to other sources of assistance and on the most important problems people have to face, problems to do with their homes, jobs, and their rights".

Community libraries are more attuned to the needs of the disadvantaged or socially excluded populations than public libraries. One description of the disadvantaged population that comes to mind defines them as "Those who are disabled, mentally ill, addictive, less educated, less literate, less able to speak English, Those who have left school, have become parents early or have experienced or perpetrated violence. And many more" (Darla, 2005:265). To this list one could add the army of the unemployed and a large constituency of Africans who are struggling to make their living in the informal sector of the economy.

Community libraries are not normally funded by government. They are generally created by/for local communities under development aid or resources generated through community based initiatives. What is unique about community li-

braries is the idea of local communities taking responsibility for their own information and development needs.

Literature points to a variety of community libraries in Africa. For example we have Village Reading Rooms in Botswana and bare-foot librarians in Tanzania (Mostert & Vermeulen, 1998), (Dent, 2005:40). The Kitengesa Community Library in Uganda is another example (Dent &Yannotta, 2005), (Dent, 2006).

Nevertheless, in the main, community libraries on the African continent have not succeeded to cement their initial gains and develop into formidable broad based vehicles to uplift local communities and help alleviate poverty. Many reasons could be cited ranging from planning to communication and poor collaboration with community stakeholders to lack of skills for proper analysis and interpretation of community information needs. Donor support was one important ingredient that accounted for the early successes of many alternative information services. It provided the much needed momentum however the decline of donor support marked the beginning of their demise.

11.0   The telecentres option

In an effort to establish a pipeline for information flow and empower the disadvantaged rural communities the South Africa government experimented on yet another approach involving setting up ICT centres in townships and rural areas. This was a response to confront the growing digital divide and make telecommunication technologies available to enable local communities to access information for social and economic development. In essence telecentres were geared to provide government information, telephone lines, internet, photocopying, fax, and even word-processing facilities at nominal fees.

Snyman and Snyman (2003) elaborate on the evolution of telecentres pointing out the difficulties encountered to live up to the expectations of government. Despite the good intensions telecentres failed to attract local communities as mainstream sources of information and communication conduits for the poor. Primarily the clientele base was confined to school children who often frequented the centres especially during school holidays. The critical mass of the rural dwellers and the marginalised; the intended beneficiaries of the project did not catch the fever.

It is observed (Snyman & Snyman) that from the onset telecentre were riddled with numerous operational problems including poor financial systems, lack of

training of telecentre managers, security of equipment, technical problems with telephone lines and high costs of communication. According to the analysis of Snyman & Snyman (2003:105) the telecentre project did not bear desired fruits for three fundamental reasons: The unproven assumption that ICT can provide solutions to all social problems, greater attention to technology at the expense of human and social capital and the top-down approach to development.

12.0   Transforming the landscape

From the aforementioned discussion public libraries in Africa have not made significant inroads to fight poverty. The birth of alternative information services was heralded as a great relief to the socially excluded and the marginalized. However, continued success has been illusive.

Librarians should not look elsewhere but themselves to place public libraries on the development agenda. Rather than establishing parallel or alternative information services, what is envisaged is a bold move to completely overhaul public libraries. A new approach will entail bringing down the 'brick walls' of public libraries and starting anew, block by block!

12.1   Rethinking library philosophy

The tragedy of public library practice for many years has been that library authority and their cohorts; librarians, have colluded to provide the public what they think the public needs rather than what the public wants. Preoccupation with the broader values of the 'public good' of public libraries to the detriment of practical information needs and desires of the target library community is at the core of the inability of public libraries to win public confidence and support.

Lor, Helden and Bothma (2005:268) argue that libraries are not 'ideologically neutral.' Dick (Hart, 2007:15) comes out strongly to refer to the '…naivete of South African Librarians who, he claims, operate unconsciously from within a positivity paradigm and so see libraries as objective neutral reality isolated from their political and economic contexts.' One would imagine that this assertion might well be true of a larger segment of librarians on the African continent

Public libraries can not be everything for everybody irrespective of the political, economic and social circumstances. The stakes are too high! Not when the scorch of poverty continues to ravage the continent and there is a growing sense of disempowerment, disillusionment and hopelessness among the African

masses. Public libraries need to break away from this fallacy and touch base with reality. Public libraries should make informed choices about the nature of their transactions and engagements based on actual needs and not assumptions or common ideals. A public library should embody and mirror the hopes and dreams of the community it serves. Only then will it begin to win the acknowledgement and respect of the local population and broader society.

12.2   The fear factor

Why should public librarians be contended with a service that brings shame to the profession? It will be inconceivable to believe that librarians are not aware that they are off target in meeting the information needs of the needy and bigger portion of the population. Librarians do not hail from outer space. They are part and parcel of the communities they serve. More often than not they share the same neighbourhood with the intended beneficiaries of public library services and talk to some members of the community, from time to time, as friends, relatives, members of a church congregation or a 'community of practice' etc. As such librarians are, by and large, informed of the actual needs of the communities they purport to serve.

Is the reluctance to change borne out of stubbornness or professional arrogance or are librarians waiting for clues from library authorities and funding bodies? The message is clear. When library funders say that 'we are tired of pouring money in a bottomless pit' they are actually saying 'guys is this all you can do with all the resources we plough in your activities?' At another level it seems apparent that librarians in Africa are so obsessed and mesmerized by the Anglo-American standards and feel so contracted to their specifications that they are not inclined to consider other options even if common wisdom compels them to do so. They religiously cling to the blinded pledge to uphold 'professional status' when the situation on the ground is calling upon them to listen, and respond, to the plight of the disadvantaged communities.

12.3   In-house renovations

The public library, as an institution, has to be remade to be more accommodating to the disadvantaged populations. Currently it has all the trappings of elitism and bureaucracy. Public libraries are structured and organized to appeal to the appetite of the more educated populations. Library rules and the behavioral pattern that they promote depict the library as an organised and controlled environment (Brian, 2005). A semi literate, let alone an illiterate African, might feel

intimidated by the establishment. There is need to liberate the public space in libraries by abandoning the authoritative, formal and instructive cultures and move towards more flexible, more inclusive and more tolerant practices that will comply with the ethos of the local communities.

12.4   Knowing your boss

It is true that library authorities, be it at provincial or local government levels, ultimately decide on resource allocations for public libraries and are pay masters of librarians. It is also correct to state that library communities; both actual and potential beneficiaries, are the most important stakeholders in determining the nature of resources and activities of public libraries. Librarians should always be conscious of the political leverage that library communities wield as tax payers and people who will carry the vote in contests for political offices. A continuous dialog and alliance between librarians and community group leaders can be a potent rallying point for public library advocacy.

12.5   Courtship and networking

There is simply no substitute for needs analysis in determining information needs of local communities and yet not many public libraries will attest to the practice on a regular basis. Mostert (2001) emphasises the need to gauge information needs of the actual and potential audience. Ocholla (2006) laments the inability of libraries to reach out to the marginalized. He singles out poor 'design' of libraries and lack of sensitivity to the information needs and information seeking behaviours of the underprivileged, as missing links. In the same vein Mchombu (2007) argues that one of the prerequisites to eradication of illiteracy and poverty is identification of 'information gaps' and repackaging of information.

The method used for identification of information needs is of utmost importance. A community based approach is commended. This approach does not start with a product or library collection. It starts with relationship building between librarians and the local community. In relationship building librarians will begin to understand and appreciate the social and economic circumstances of the target audience. Relationship building does not happen overnight. It can be a painfully slow experience in which the librarian takes time to listen to the stories of grass root organizations, development agencies, religious, literacy, funeral societies and similar groupings that may exist in the community (Kabamba, 1999).

In relationship building a librarian could pay regular visits to a site, or several locations, of existing community development projects as a guest to seek understanding of the burning issues or intricacies of development initiatives. A librarian can also invite community group leaders to meet at the public library to share information on issues of importance to the community groups they represent. Such visits, if approached with sincerity and consistency, could help to reduce the social distance between libraries and the communities they are supposed to serve.

The main idea here is to connect with the local population in their own comfort zones, win their trust and create a non threatening channel to articulate their needs. These interactions can also assist the librarian to develop community profiles detailing existing community groups, their contacts, missions and activities. The mapping of stakeholders could be an asset to identify priority information needs of various interest groups in the community.

12.6   Harvesting stories

Relationship building will be augmented by small to medium scale needs assessment surveys. Caution must be exercised in conducting surveys and interpretation of results. Disadvantaged communities are not traditional library users, neither will they be comfortable with filling questionnaires. Socially excluded community members may not cooperate to answer questions or attend meetings as they have 'more important issues to worry about'. For many such people every day that comes is totally committed to a perpetual vicious circle of struggle for survival. However, a sustained cordial relationship between the librarian and the community, based on respect and trust and the networks that evolve as a result, can help in facilitating conversations and bonding.

Many public libraries do not have the capacity for conducting systematic needs assessment surveys. It is understandable that not all librarians will poses these skills. There are other people and organizations that can work with public libraries, to either develop skills or do the job on their behalf. Library schools, in particular, can provide support. Library associations and some development agencies can also be approached for professional guidance, material support or to commission studies. Librarians should be mindful that statistics alone may not give sufficient information or desired results. Sometimes quantitative data can even be misleading. As Brain (2005) points out "While most library services are justified quantitatively, working with the community is measured in charging lives and gathering stories."

12.7 Service level agreement

Information gathered by listening to 'stories' of community members, community maps and surveys will form a firm basis for setting up library services that are pertinent to the real and current information and development needs of the community.

If such information suggests a need for a child day care, book talk, story telling, life skills, indigenous art exhibition, crafts, drama, career guidance, literacy facilities etc, the library has to give serious consideration to those needs. If there is compelling evidence that a representative group of a community is in dire need of current information on employment prospects in the community, counseling services, HIV/Aids related information, or second hand dealership then the library has to give attention to how best such information can be sourced and disseminated. Similarly if a significant proportion of the community is interested in what is happening in the community or nation the library will give some thought to provision of current information in news papers, radio, or television, whatever will be appropriate.

A library does not need to have expertise in all these areas of need. In fact it will be unrealistic to expect a librarian to have sufficient knowledge in all sectors of need such as listed above. Nevertheless, in a networked environment, referred to above, the librarian will rely on the community maps and personal contacts to identify 'local expertise' and other resources.

In many instances the librarian will collaborate with other stakeholders like 'communities of practice' and non governmental organizations and even government agencies which might be endowed with resources or contacts that the library may not poses. In a number of cases the librarian will simply provides the venue and coordinate activities while regularly checking on feedback to ensure that maximum impact is derived from the services provided.

And so it is that the organization of a public library, its resources and services will be informed by these expressed needs paying particular attention to creation of a welcoming environment to the local community.

The hallmark of a successful information service is sensitivity and greater responsiveness to what the target community wants and desires. A need-based approach, receptive to the aspirations and information seeking behaviours of local communities, anchored on relationship building and networking, pro-

vides the framework of a 'service level agreement' between the library and the community.

13.0 Concluding remarks

The general performance of public libraries in Africa has not advanced far enough to galvanise a sense of pride to the profession. Cosmetic changes, alternative or parallel services have given new meaning to the image of libraries but have yielded short-lived or negligible benefits to the masses of the disadvantaged populations.

It seems unlikely that Africa will attain the MDGs, in the given time period, for various reasons outside the scope of this paper. However, Africa is granted yet another window of opportunity to transform public libraries to the extent that they can play a meaningful role in fighting poverty.

Scarcity of resources in Africa, and common sense, do no warrant new investments to establish functional libraries. What is envisaged is taking radical steps to transform existing building and services into practical libraries for Africa. It is very important that 'new public libraries' operate within the framework of public funding for sustenance.

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STRENGTHENING WOMEN FARMERS' INFORMATION NETWORKS TO CONTRIBUTE TO THE MILLENNIUM DEVELOPMENT GOALS

J.R. Ikoja-Odongo

Abstract

The most urgent priority in Africa is to ensure food and nutrition security for the rapidly growing population. Food production on the continent depends mainly on millions of small-scale women farmers. Yet, these women find it difficult to access information they need for increasing production and marketing due to handicaps such as illiteracy, distance from information centres, cultural inhibitions, domestic responsibilities etc. The aim of this paper is to discuss the contribution that librarians can and should make to strengthen women farmers' networks with information for agricultural production and marketing. The assumption is that if librarians supported small-scale women farmers to access vital agricultural information, it is likely that women would use information to enhance production levels and quality of produce. This would in turn make it easy for them to market their produce thereby addressing food and nutrition deficiencies. The essence is that increased agricultural production is one way of attempting to contribute to the attainment of the Millennium Development Goal One, the eradication of extreme poverty and hunger. The paper recommends that librarians should help women develop information competencies necessary for accessing, analyzing, using and communicating information and to develop or identify and apply information access tools and systems and services that they see can meet women farmers' information needs. Librarians should be able to identify, target and work with such networks as a strategy for disseminating information to women farmers at the village level. Tapping into these networks it is assumed, can cause women's move towards increased information seeking and retrieval.

Introduction

Information networks have become established methods of sharing information in and among organizations and communities in formal and informal ways. Networks have grown out of the members' interest in making change to happen. It is a development communication strategy in which an information service becomes more valuable as more people access and use it, thereby encouraging increasing numbers of adopters. The paper is motivated by two basic facts that ag-

riculture is the main economic mainstay in most African countries with about 70-80 percent of the population engaged in it. It is also because African women's fundamental contributions in their households, food production systems and national economies are increasingly acknowledged, within Africa and by the international community. This is due, in no small part, to African women's own energetic efforts to organize, articulate their concerns and make their voices heard (Takyiwaa, 1998). The paper aims to discuss the contribution that librarians can make to strengthen and support women farmers' networks with information so that increased agricultural production is realized. Food production in the continent depends mainly on millions of small-scale women farmers.

A situational analysis of the information environment in Africa reveals that small-scale women farmers find it difficult to access information they need for increasing production. Women living in rural areas are at a particular disadvantage in the digital world facing barriers related to both gender and location. Given their central role in the agricultural economy, women often have too much work and too little time to become familiar with these new technologies. And with their special responsibilities for children and the elderly, women typically cannot migrate as easily as men to towns and cities where training in the new technologies is more available. Cultural attitudes also prevent women from visiting public access points (libraries) frequented by men in addition to generally lower levels of education and less political and economic power than their male counterparts that limits women ability to enter the new world of ICTs. Added to this is the lack of ICT materials in local languages (Shore: 2002). It is further observed that the environment under which women operate is not adequately supportive for them to acquire information and document their experiences. The majority of women in Africa are illiterate or semi-illiterate and poor. Only 47 percent of women are literate on the continent (UN, 2006). Many a time women do not have time to look for information because they are heavily involved in family chores (Ikoja-Odongo, 2002). Married women have even more problems. Their movements are often restricted by their spouses who limit their participation in information based activities outside their homes, thinking that seminars/workshops are platforms for women to gossip and promiscuity. Many women are also disadvantaged by lack of appropriate information materials in local languages, absence of library and information services in rural areas in which case the oral culture predominates (Kigongo-Bukenya 1996:17). Ignorance of existing information services is also a barrier. The majority of them are not even aware of the information services that exist. This effectively amounts to women being poorly prepared and equipped to deal with using and managing information on a daily basis due to lack of abilities to locate relevant informa-

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tion. Under such circumstances women rely on oral media and information sources which are also located near and far from their homesteads. These local means of accessing information are informal using informal channels such as relying on personal experience as prime source of information, contacting people who may know what they need to know; asking friends, relatives and neighbours, customers; listening and talking to other people and relying on social networks. This is how women networks come about and become more pronounced in agriculture. It is a movement away from isolation into the mainstream of development ideas. The unfortunate thing about informal networks is that almost everyone knows what the others know and in most cases information requires a lot of filtering to make it usable. Women farmers may not be able to do that. This is how librarians become relevant.

Attention is paid to librarians partly because there have been many complaints that librarians in Africa are less relevant in rural communities. The ground breaking statement came from Mchombu who in 1982 raised the problem of librarianship of poverty and followed by Sturges (2001) who discussed the poverty of librarianship practiced in Africa. Both suggested a need for African librarianship and information work to become meaningful. African librarians needed introspection and opening up their minds to realities if change was to be achieved. Aina (2004:292) attributed this failure of library and information services to the practice of librarianship in Africa. He said librarianship followed in Africa was based on the western world, where the philosophy of practice is based on the concept of literacy. Only users with adequate literacy skills can benefit from them. Attention is also brought to bear on librarians partly because librarians understand that since the beginning of this century, information environment is greatly changing throughout the world (Ping Sun, 2002:210) and sub-Saharan Africa is no exception. One of the biggest challenges is the exponential growth of information. Information has become a valuable commodity affected by the knowledge-based economy. Individuals are facing multiple information choices within the escalating complexity of the environment. Information literacy therefore forms the basis that can lead to unlimited sources of knowledge. In this context even groups like rural women who cannot use libraries due to their illiteracy, inadequate access tools or other difficulties need information using alternative ways and should to be reached as a matter of their right. What is needed is creating conditions that enable women develop the attitudes and skills necessary to become knowledgeable producers and consumers (Adodo, 2006:116). Women farmers could perform miracles if intensive and sustained efforts were made to foster their "scientific education" at the village level and to involve them in decision-making on issues relating to food security and agricul-

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tural development. African librarians should know how to help women in rural communities' access information. Librarians are trained in knowing how to recognize the value of weaving information into activities. They know or supposed to know where to get the information women may need. They are the information processors and packagers who make information easier to access. They have the teaching and guidance function to assist women use information. They know better channels to deliver information to the women.

The declaration of the Millennium Development Goals (MDGs) (2002) in September, 2000 was historic event in the world history since it brought about the commitment of 192 world leaders from developed and developing countries to set goals that their countries should aspire to attain for a better and just world. The MDGs, eight of them, represent a global partnership in which the developed countries pledged to support the developing countries and the developing countries pledging to do better in the ways they do development work in their countries. This paper makes the argument that by librarians recognizing, strengthening and helping women farmers' information networks at community level, it will be easier for such women to access and/or receive information and innovations they need to increase agricultural production and consumption. By doing so, women would be contributing to the attainment of MDGs, a move that should see them ridding themselves out of poverty. MDGs may not actually be achievable by 2015 considering that half the journey has been done yet hunger and malnutrition still ravish the continent blocking development, investment and economic growth (RAIN, 2007:6). But what is important in my view is that the road map for development has been set and aspirations should remain our challenge.

Context and Justification

MDG 1 aims to eradicate extreme poverty and hunger. It is the aspiration of this goal that by 2015 the proportion of people earning below one dollar a day should have been halved, prevalence of underweight children less than five years of age should have also been halved and the proportion of the population living below minimum level of dietary energy consumption should have also reduced as much as possible. These symptoms of deprivation are prevalent in sub-Saharan Africa and relate directly to agriculture and food. To address the issues of nutrition African countries need to look critically at other MDGs that affect women's health and education. Women need more literacy now than ever before and universal programmes of education should be consistently implemented.

Nutrition education is equally relevant for mothers if families have to emerge out of poor health and growth.

In sub Saharan Africa women, produce between 60 to 80 percent of the food (UN 2006). The food situation depends largely on decisions made by millions of small-scale women farmers who are the major food producers and transformers in Africa (Adodo, 2006). Yet, despite their contribution to food security, women farmers find it very difficult to access information or new technologies from outside their communities. Women farmers instead rely on networks they create and are close by their places of stay. We must agree that women are intelligent but in most cases remain quiet in many issues. To allow them gain confidence, information education would be the key for them to become information literate.

Networks

A network can be defined as a formal or informal cooperation among three or more organizations with common interest and common goal. It may involve various relationships, including relationships with other organizations, customers, stakeholders and communities (CTA, 2001:24). Networks have emerged out of the realization that, public libraries in Africa are largely a failure. They are few and are poorly resourced. Information in those that exist is largely irrelevant to the needs of women farmers. In the absence of any reliable information system, networks have come in to fill the void. NGOs have and are setting up resource centres or telecentres centres for documenting their experiences and providing information to communities. Examples are, WOUGNET in Uganda, Wendano Farmers Knowledge Club in Machakos Kenya, *Arche d'Alliance*, of Democratic Republic of Congo. All these NGOs operate resource centers as organs for collecting and disseminating agricultural information to women. Through such networks, women use different ways for accessing information. Some of them are discussed below.

Talking model: By far the most widespread of these models is the community wide aural model. Women from the historical perspective have been and still rely on the informal and internal community sources to access agricultural information. The preference in this model is receiving information directly by word of mouth and face-to-face, listening and talking with fellow women, socializing, relying on personal experience, seeking and receiving information from friends, relatives and neighbours. Privileged occasions when this model is applicable include: community meetings such as local council meetings, chatting in market places and when drawing water from wells, after prayer service (espe-

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cially through Mothers Union meetings) discussions, during communal gardening, cultural ceremonies such as marriages, baptism etc. Using this model, women farmers rely mostly on tacit knowledge. A face-to-face mechanism that is growing in application is the farmer-field-schools. A field school is a group of around 20-30 farmers from the same locality who meet weekly for a whole cropping season. A facilitator guides the group and the learning is hands on. This non-formal environment encourages valuing and sharing of own knowledge (Braun et al, 2000). Experience with farmer field schools in East Africa show that farmers have been able to produce crops more effectively in addition to bringing about social change (FAO, 2001). Through this method, families without food security have also been reduced.

Mass media: Women are increasingly using radio and videos. With liberalization of most economies in Africa, markets are being flooded with cheap radios. Local video viewing halls are becoming popular in less privileged communities. These channels of accessing information provide opportunity for communication and are able to reach wide audiences quickly. Radio communication has been helped by the rapid growth in FM community radio stations in every country. In Uganda there are over 160 community radio stations operating. In these stations, phone in programmes (Question and Answer Services) are staged where community-based issues including those relating to agriculture are discussed. Local content is aired thus increasing interest and relevance in the subject matter, and the chance for communities to be heard (Rangi et al 2006:199). An example of community broadcasting that has been successful is Women's Voices of Practical Action, formerly Intermediate Technology Development Group (ITDG) in Zimbabwe. Tanzania has developed community television that uses batteries or solar instead of electricity to take information to remote areas of the country. Community Television is currently operating successfully in communities such as Orkonerei (Maasai), and Sengerema (Kapange, 2006:155).

Agricultural Advisory Services: Although the traditional approach of extension services is reducing in importance, government of Uganda introduced the National Agricultural Advisory Services (NAADS). This approach has been successful in delivering demand-driven private-sector-led extension services such as information dissemination to women. NAADS is enabling subsistence farmers to access agricultural knowledge, information and improved technology. The success of NAADS lies in the power of farmers calling for the extension agents to serve them and thereafter extension agents go away.

Agricultural shows: Participating in local agricultural shows is the model that has worked effectively in many parts of Africa. Women of Uganda Network (WOUGNET), one of the most successful Ugandan NGO has been participating in many projects aimed at supporting women access agricultural information. In 2005 through its Rural Access Project, this NGO participated in an exhibition for northern Uganda under the theme "improving rural food security and household income through organic farming." It exhibited publications in agriculture, food security, HIV/AIDS and posters on improved seed varieties. Its stall attracted a lot of interest since it was the only information stall in the agriculture sector and it won award for information and relevance and in disseminating information to rural women (Weddi, 2006).

Community theatre: Attending or participating in community theatre has been found to be effective way of disseminating information to women farmers. In Zimbabwe and South Africa, community theatre has been used as one of the ways of propagating information to people. As agricultural countries, information in languages of the local people is disseminated through theatre and people learn from it. Theatre is used mainly to identify farmers' problems and videos to show how the problems can be solved. Video is chosen to illustrate problem solving because it shows realities and viewers can replicate the idea. The value of theatre is that it is community based. Actors or drama actors are members of their own community. Language is the same making interpretation of messages easily done and instantly.

Mobile cinema: Cinema has been a popular model for reaching rural communities with information for a long time. Mobile cinema is particularly the work of the Ministries of Agriculture, Health in liaison with Information Ministry, and NGOs. This medium consists of vans carrying video projectors and screens, with operator vans traveling on appointed basis from location to location, staging outdoor shows in the evenings free of charge. This model has enabled entertainment and agricultural information to reach rural populace including women. For instance mobile cinema by some NGOs in Uganda traverses villages with film directly relevant to farmers e.g. growing cotton, fishing and ploughing using oxen. The cinema was very successful.

Consultative fora: Another model that has been applied with success is the discussion fora. In the Republic of South Africa, Rural Consultative Forum has been used as one of the models for distributing information for development for people in agriculturally rich Kwa Zulu Natal region. In using this method of accessing information, community members largely women find time to seek and

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learn much about different issues affecting them in agriculture and in their villages. Extension agents are present to help women with when they need to know about agriculture as a business. In this way solutions to problems are addressed simultaneously.

Community Information Networks: are networks providing the best opportunity for stakeholders to share information, since the culture and information sharing are well ingrained in the way of life of many African peoples. Going by the name of rural development networks online, this initiative targets rural farming communities, community development policy makers, researchers and other prime movers in the agricultural sector. According to Juma and Kahinga (2006:249) rural development networks aim at exploiting the rapid proliferation of ICTs, to empower the farming communities who form the bulk of the population. Rural development networks online is a Kenyan information system based on a database. The system contains critical information on rural community development associations, self-help groups, farmers cooperative societies, agricultural projects, milestones and achievements of the affiliated members and the viable agricultural development options in various locations. These networks enhance the local content of the Internet for the benefit of the rural community.

Community Telecentres: Although there are arguments that telecentres are mostly outfits for the educated, they are one of the most important resources for improving the plight of women in agriculture that has worked well in Africa (Asaba, et al, 2006:145). Known by various names, telecentres or multipurpose community telecentres were established to test and demonstrate new technologies and applications, to show their impact on the development of rural communities. They were also established to investigate innovative policies, tariff structures and new approaches to organizing telematics, to stimulate and create capacity for community to access local, national and international information services and resources. Furthermore they were established to serve as centres for utilizing information and library for rural community development, to generate local information and knowledge from resources available within the community (Ikoja, 2004:108). The centres are providing basic communication services such as phone, fax, library, Internet, email, community radio and video shows. Associations and self help groups (formal and informal) use telecentres as successful model for women to share information about agricultural and health related matters. The goal of the telecentre is building capacity of rural women in accessing and using ICTs through the training programme and effective use of radio and cell phones and the basic use of computers. In those centres women generate agricultural local content, are able to repackage information, document

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their experiences, in print, video etc. In Uganda four examples are worth emulating. Women have benefited from Nakaseke, Buwama, and Kasangati Telecentres in Central Uganda and Kubere Information Centre in Apac, northern Uganda and Sengerema in Tanzania. In these centres women come to read local literature in print, use ICTs for Internet, listen to community radio, watch television programmes on agriculture, view CD ROMs, listen to recorded tapes on improved agriculture, hold meetings to discuss problems of agriculture or exchange ideas of improving crops, animals and marketing. They are guided by programme officers in charge of information and librarians. Using this approach women enrich themselves with modern knowledge and integrate this with their indigenous knowledge instantly taking advantage of the synergy of both. Location, scope and language of information products of the telecentre are important. In the case of Kubere Information Centre, this is located in the market place and has a big notice board where vital information is pinned up for people including women to come and update themselves on new information. In the case of Nakaseke telecentre, this is located in a civic area where community leaders work. By being here, issues requiring answers are dealt with by leaders, and extension agents. The community radio is also located next to administration block.

Market Information Centre: Information about markets and marketing has been made available through a model called Market Information Centres. Kenya Agricultural Commodity Exchange (KACE) has taken a lead on this and has made progress in marketing agricultural information. The Exchange pioneered with market information centres (MICs) and market information points (MIPs) in several towns of Kenya. This approach is helping smallholder farmers' access current market information services such as fair prices and commodity stocks. MICs are equipped with computers and mobile phones that provide access to current market information. Farmers visit centres to access and to be provided with information services such as bids, offers and prices of agricultural commodities. The MICs also provide value-adding services like storage, transport and quality testing. Information is downloaded at the MIC and distributed to MIPs on every market day (Mukhebi in Asaba, et al, 2006: 145).

User knowledge Clubs: Engaging communities is an important aspect of promoting access to knowledge at a rural knowledge centre. Knowledge clubs constitute groups of people with common interest, supporting each other to access and use the resources of the centre. For example the Nakaseke Farmers Knowledge Club in Uganda and the Wendano Farmers Knowledge Club in Machakos, Kenya each has over twenty members who include farmers, traders, business people, women's groups, extension workers and people in community-based or-

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ganizations. Club activities include promoting access to information and training in ICTs. Topics include crop cultivation, pest management, post harvest control and agricultural marketing. Members pay a nominal fee (in cash or kind) which are used to facilitate activities of the club. The Club is enjoying many benefits including increased access to information and to markets of agricultural commodities (Asaba et al, 2006:149).

Agricultural Extension Services: Extension services have a long history in African agriculture. As government workers, agricultural extension workers move on a routine basis to provide the necessary information to women farmers within the communities and sometimes organize agricultural meetings either within the communities or at parish level for these women farmers to share experience. These extension workers also direct the farmers where to obtain agricultural information. But there is still a need to provide these extension workers with modern and up-to-date agric information which they can later pass on to the women farmers.

Tools

Cell phones: Women in villages have traditionally been networked by meeting and sharing information at the village well when they fetch water or when they are communally digging. But this sharing of information has expanded to infuse mobile telephony. For more than a decade now mobile phone technology has grown rapidly in Africa. There are many opportunities women say, cell phones are bringing to them. Women can find farmer prices by merely dialing preferred numbers and information is given directly. Women can ring friends about market prices or any other agriculture related information, compare notes and they are served. They can send short text messages to designated numbers and ask for whatever agricultural information they need and they are instantly served. Other opportunities that the new technologies are offering are cutting costs and time in information seeking, quick action and the emergence of new response to information use. This has been made more attractive by cell phones becoming cheaper due to increasing competition from investors. Example includes Lesotho, a country with declining farm activities where women have made a breakthrough in improving their productivity through Thulare-Eyking Agricultural Development Project. Women are able to find quickly what markets exist and at what market prices. In this project women are given cell phones and air time to create a well head and get connected (Shore, 2006). This project is expanding to cooperative groups. Related to cell phones are portable phone kiosks. Private phone kiosks, public call boxes are extending to local areas and technology de-

velopments that have made it possible for village entrepreneurs and phone companies to develop portable phone systems. Villagers can now have connectivity in their villages and are able to use the facility for information exchange. Another development in a country like Uganda is village phones that have been set-up in a number of districts in Uganda especially communities in northern Uganda. These phones are mainly used for communication in case of an emergency and disease outbreaks. But evidence on the ground shows that, village phones are also used for other communication purposes within the community such as the exchange of agricultural information especially relating to the prices/market of agric commodities.

The Internet: In the Democratic Republic of Congo (DRC), a country badly hit by war for most of 1999-2004, *Arche d'Alliance*, a non governmental organization (NGO) spearheaded a project in the Uvira region to raise women's status there. The project is teaching women how to use the Internet to find information and apply better farming methods and better ways to market their produce (Shore, 2006). Use of the Internet is bringing a real impact on their ability because it is helping rural women make strides in the agriculture, (animal) breeding, fishing, and crafts sectors. Realizing those practical goals is expected to lead to an improvement in the status of women in their communities partly because of the projects subsidiary impact of teaching women their rights while eliminating illiteracy. Related to that is the case study of Burkina Faso (Shore, 2006) where a similar situation is taking root. *Association Manegdbzanga* is running a project designed to stimulate much broader communication within rural communities using the Internet. This Association envisions the new Internet access, first as a way of allowing participants to communicate with other rural women around the world, so as to gather insight into how women elsewhere deal with challenges similar to their own. But during their daily work as farmers and gardeners, women also are in contact with neigbhours through their electronic connectivity. To support the Internet initiative, the Association is publishing a nation-wide newspaper that transmits more broadly the projects participants' new, Internet-derived knowledge.

Contribution of librarians

There are many things that librarians can and should do to enable women farmers' access information for agricultural purposes. In the first place it is my experience that many librarians especially in Uganda are employed in the NGOs sector as information management specialists. Taking this as an advantage such librarians are well placed to promote information use among women farmer

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groups. The need is to begin to succeed. Even if not, they can work together with public librarians to render the same services. There are many areas of engagement that allow librarians to do community librarianship and information services. For instance, conducting research on agricultural information needs of various women groups is a means through which the librarian can identify what types of information is required. Results of such studies have to be disseminated widely among women so that they come to realize the need for information. Compiling a directory of women groups in agriculture and putting this information on the Internet as well as producing hard copies for those who cannot access it electronically is important for reference service. That kind of directory could be used for promoting access to women groups. Policy makers and other stakeholders would use the directory for reaching women groups. Documentation of women information empowerment practices using women groups that already are success stories could be a big contribution. Librarians should be able to use outcomes mapping methodology to establish positive behaviour changes that have taken place among participating women and use the best practices for guiding other women to emulate. Research on information models and information user behaviours in different community environments and sharing the outcomes with community groups is a way of increasing womens' understanding of information environment. That should be part of the librarians' duties. Since no one model is deemed significantly successful in every environment, constant search for working and reader friendly information models is a useful proposition for librarians. Such studies would raise ideas needed in planning information services. Teaching and training women in information skills using multi media would enable them acquire better level of information literacy. This is in line with a Chinese saying that: "equip a person with hunting rifles rather than bags of food". By rifles are meant people's skills and abilities. Information literacy is the rifle. Once they have skills and abilities, then they become independent information seekers. Marketing of existing information systems/centres is fundamentally a way of creating awareness about existing information systems and encouraging their use. Equally important would be constant information updates in those systems so that women learn what is new. Participating in radio talks discussing topics relating to agriculture is an enterprising idea for librarians to do. This idea has worked well in Nakaseke Tele centre in Uganda where the librarian always addresses the communities on various topics especially agriculture. Librarians should also be organizing workshops/seminars for women farmers to learn more about new information, and methodologies brought about by research institutions. Likewise, repackaging of information in various formats such as CDs, tapes, or print and distributing them to women farmers is an important information service. Availing this information in alternative and local lan-

guages that women understand is an information service librarians can do to satisfy women's information needs. Within the information centre, the librarian can do information searches on behalf of women who are not quite capable of looking for information unsupported. The librarian can also organize discussion groups for purposes of exchanging innovative ideas and sharing of experiences. Participating in exhibitions and managing information stalls, encouraging Question and Answer Service and, taking stock of Frequently Asked Questions are essential tasks for the librarian. This can help the librarian to develop information databases out of such questions and requests. And there is no harm librarians' investing in information as a business. Information entrepreneurship is a good business especially when tailored to meet the needs of the educated women.

Network Model

What model can serve as a basis for bringing information closer to women farmers? Obviously this will require active imagination and innovative ideas to make it work. Before I propose any model introspective thinking reminds that already there are many models in use in different places with varying degrees of success. Analysis of them reduces their number basically to one, an information system. What is significant to note about them are their names as chosen by their founders. For instance, telecentres are so called because much of the information work is designed to use information technology. Resource centres is because information is a resource. Community information service and networks are because of their location in communities. Mass media, cinema, Internet, cell phones, radio and video are all channels. Advisory services, shows, theatre are services while clubs are just a group of people. It is possible to bring almost all of these under one roof and organize the rest through it. We need a librarian for the organization and managing. Secondly, in planning a model specific attention is paid to factors contributing to women's failure to access information. A model is needed that will be accepted and used by women irrespective of their literacy levels. It should be easily comprehensible and relevant to the women's agricultural needs. This, according to Mokgaboki (2002:78) will require more of physical exchange of information in many instances; the need for outreach information service with the librarians participating as information gateways. Thirdly like other government programmes, extending information services to rural women will definitely need a policy framework. I propose government finances it for sustainability purposes. Other stakeholders can support. The policy would detail issues relating to information system justification, goals, objectives, user (including women farmers) community, participation, funding, stakeholders, and

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expected impacts of such a service to communities. The model, its success and efforts would place emphasis on integrating women's information activities with other government programmes or agencies with similar objectives.

In this context I propose an inclusive cluster model that can serve women farmers and at the same time serving other community members. This model should take into account activities of other government departments or agencies within the communities. This reduces scattering of information units in one geographical area. In this model, communities forming the lowest government administrative unit within a geographical area are served from one point. Administratively it is easier and economical. This arrangement should allow communities to participate meaningfully in their socio – economic development. Justification for the inclusiveness is to reflect social characteristics of women (literate and illiterate) and other community members, use of formal and informal communication channels, information in different formats, use of ICTs (computers, radio, cell phones, TV). Information will be coming into the information system from different sources e.g. government, NGOs, lead farmers, other informal sources etc. Information will also go out to women and other community members in varying formats through civil servants, village leaders, secretaries of information, women affairs, production and marketing and lead farmers. Since there is government infrastructure at this level including land for demonstrations, seminars/workshops, and briefing sessions can be conducted here.

Conclusion

Librarians can succeed in disseminating agricultural information and support women's efforts in Agriculture when they move beyond their own discourse of formal information institutions. They should be in a position to develop innovative community based models that take into account women characteristics, information sources and information channels. Librarians need to understand how women groups work and manifest themselves and how they seek for information if we to move towards achieving the MDG one of eradicating poverty and hunger by 2015. A community based model that radiates to villages is most ideal.

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KNOWLEDGE MANAGEMENT FOR ENVIRONMENTAL SUSTAINABILITY IN AFRICA

Priti Jain

Abstract

Knowledge Management (KM) is interdisciplinary. It is a process of knowledge creation, distribution and application, which can be applied to almost all the eight Millennium Development Goals (MDGs). This paper will discuss how the major facets of KM can contribute to the attainment of the United Nations' 7th MDG on "environmental sustainability".

Environmental sustainability refers to the environmental actions of what we do or should be doing in order to maintain a sustainable environment. The focus of this paper is on environmental sustainability in relation to global warming. Environmental sustainability and global warming has become a serious global issue and concern for everyone, which requires efforts from all sectors of society including information professionals. This paper will explore how knowledge management can be applied in reducing the effect of global warming thus, contributing towards a sustainable environment. With a brief discussion of KM facets, the paper discusses causes, effects, solutions and challenges related to global warming with specific reference to Africa. The conclusion suggests a way forward for librarians and information professionals; how they can use KM for environmental sustainability in Africa.

Keywords:
Knowledge management, environmental sustainability, Africa, global warming, MDGs.

Introduction

Sustainability or sustainable development means protecting resources in such a manner that enables people to meet their current needs "without compromising the ability of future generations to meet their own needs" (Resource Renewable Institute, 2000). This paper deals with environmental sustainability, which is one of the four main types of sustainability, the other three being human, social, and economic (Goodland, n.d.).

In response to global environmental change, global warming is the greatest environmental challenge in the 21st century. It could lead to the ultimate end of existence of earth and man. Its devastating effects on the environment and for human life are one of the biggest concerns and most widely discussed issues in the world.

Climate change and "growth and responsibility in Africa" headed the agenda of the June 6 – 8, 2007 G8 summit in Heiligendamm, Germany (Global Policy Forum, 2007). In 2006, EnviroInfo's 20th anniversary was celebrated in Graz (Austria) and the conference aimed at exchanging environmental knowledge amongst scientists, public administrations, non-governmental organizations, companies involved in environmental informatics, and the end-users of environmental information systems.

The well-known "Kyoto Protocol" is a legal agreement, monitored by the United Nations, in which the signatory nations have agreed to reduce six, dangerous anthropogenic [man-made], key greenhouse gases (carbon dioxide, methane, nitrous oxide, hydro fluorocarbons, per fluorocarbons, and sulphur hexafluoride). The target is to achieve this reduction between 2008 and 2012 (UK Weather, 2008).

Global warming is "gradual increase in the earth's surface temperature" (Zfacts.com, 2008). It is not just limited to Earth, it spans to neighbouring planets, Venus and Mars. Greenhouse gases in a planet's atmosphere can radically affect the climate. On Earth, the majority of carbon lies in the oceans and rocks. Still, this little carbon dioxide, along with water vapour and other small amounts of greenhouse gasses can raise the average surface temperature of Earth by around 30°C. Without which, Earth would be frozen (UK Weather, 2008). The "greenhouse effect" is the heating of the Earth due to the presence of greenhouse gases. It is named after a greenhouse, since a similar effect is produced by the glass panes of a greenhouse.

Burgeoning information is available on climate change and global warming to make us all aware of what has been happening around the world. Still, many questions need answers: Are we all aware of what we need to know? What are the causes and effects of global warming? What can be done to reduce the global warming? Information professionals can play an important role in answering all or some of these questions and by doing so contribute towards environmental sustainability. This paper is an attempt in this direction namely: how information professionals can use knowledge management to foster a sustainable environment in Africa.

Knowledge Management (KM): Knowledge refers to information put into context and includes both explicit and tacit knowledge. In the framework of this paper such knowledge means information on environmental sustainability and global warming. KM can be defined as a purposeful management process to capture, exploit, share and apply both implicit and explicit knowledge for the benefit of diminution of global warming to bring environmental sustainability. Emphasis is on taking global warming related knowledge to all walks of society and communities and turning it into actionable knowledge.

Practitioners and researchers have come up with different KM facets. In literature, KM facets are defined in two ways: (1) faceted classification or taxonomy (Smith & Associates, 2007) and; (2) aspects of KM. In this paper KM facets refer to aspects/dimensions of KM. Wiig (2002) categorised KM facets into four groups: KM as a Technology, KM as a Discipline, KM as a Management Practice and Philosophy, and KM as a Societal and Enterprise Movement.

KM as Technology refers to methods, best practices, systems, and processes. IT is a mechanism to help people create knowledge: tacit to tacit knowledge via socialization; tacit to explicit knowledge via externalisation; explicit to explicit knowledge via combination, and; explicit to tacit knowledge via internalisation (Nonaka and Takeuchi, 1995). IT can also be used for sense making activities to support innovation by the decision makers. A "good IT infrastructure is not a sufficient condition for the success of KM but a necessary condition for it' (Arora, 2002). This facet is tangible; since its main focus is on the application of "How-To" use knowledge for various operational purposes.

KM as a Discipline is a basis to conduct research, develop educational curricula and provide training, or new and effective methodologies and approaches. It is considered multidisciplinary, since it deals with psychology and cognitive sciences, learning theory, philosophy, management sciences and theories, economics, social sciences, information technology, and broad artificial intelligence (AI) etc. The KM discipline facet focuses on knowledge-related phenomena and mechanisms affecting KM (Wiig, 2002).

KM as a Management Philosophy and Practice refers to management practices. KM proponents and practitioners consider KM as a management tool, since it is used to improve overall organisational productivity/performance irrespective of whether business is service or production based. KM is exploited and used to achieve desired objectives and results. To achieve the optimal benefits, KM is incorporated in business plans to address issues such as organisational needs,

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stakeholders, organisational culture, change management, staff motivation, and training to build KM capabilities etc. (Wiig, 2002).

The Societal and Enterprise Movement in KM emphasises that globalization makes KM an inevitable necessity to sustain or improve competitive edge and it has led to the 'Knowledge Era'. In the knowledge era the fundamental competitive factor is for intellectual capital (IC) to use and apply knowledge effectively. This calls to go beyond competition to the endurance of quality of life, basic personal values, and broad global, societal, and enterprise responsibilities and values (Wiig, 2002).

The Knowledge Management Connection (2007) categorized KM facets as: Products (a hierarchical description of each of the organization's products); Applications of the product; Organizations, businesses and other groups including a company's customers and prospects; People both within and outside the organization; Domain objects – the technologies, Events, Publications including Web pages, etc.

Based on Wiig's (2002) philosophy of KM facets and author's own observation, this paper focuses on four facets of KM: KM as a Technology, KM as a Discipline, KM as a Management Tool, and KM, as a Knowledge Transfer Device.

Causes of Global Warming: There are two major debates about global warning. Some believe global warming is a natural cycle of warming and cooling, while others consider it is an unusual phenomenon. However, the majority regards it as unusual and believes human activities are responsible for global warming (Global-Warming.lesinth.com,2007, National Aeronautics and Space Administration, 2007). Changes in the Sun and volcanic eruptions do not explain the strong warming in recent decades, when the effects of human-produced greenhouse gases became apparent (Science Museum of the National Academy of Sciences, 2008).

Sharing a similar opinion, Langdon (2003) confirms that there is "new and stronger evidence that most of the warming over the last 50 years is attributable to human activities". And "The evidence that humans are causing global warming is strong, but the question of what to do about it remains controversial. Economics, sociology and politics are all important factors in planning for the future" (National Geographic Society, 2008). In order to stop the devastating effects of global warming, it is imperative to understand the causes of global warming. The major causes can be summarized as follows:

- **Solar activity and cosmic rays:** These are instrumental in determining the warming (and cooling) of Earth (Long, 2007). Cosmic rays trigger cloud formation, and a high level of solar activity suppresses the flow of cosmic rays striking the atmosphere. This results in fewer clouds forming and consequently the planet is warmer.

- **Carbon Dioxide:** Carbon Dioxide is the principal greenhouse gas. Coming from rotting trees, coal burning, natural gasses and any other gas emission, it pollutes the air in the atmosphere and as a result, causes global warming. Carbon dioxide traps the sun's heat and makes the planet warm. About 33% of U.S carbon dioxide emission comes from the burning of gasoline in internal-combustion engines of cars and light trucks. Vehicles with poor gas mileage contribute the most to global warming. In the U.S. coal-burning power plants are the largest source of carbon dioxide, which produce 2.5 billion tons carbon dioxide every year. Buildings structures emit about 12% of carbon dioxide (EcoBridge, n.d.). Aviation (airplanes) causes 3.5% of global warming, and the figure is estimated to rise 15% by 2050 (Natural Resources Defence Council, 2007).

- **Methane:** Methane is the primary component of natural gas and an important energy source and second most important greenhouse gas after carbon dioxide. Its concentration in the atmosphere has almost tripled in the last 150 years. (EcoBridge, n.d.). Its presence in the atmosphere affects the Earth's temperature and climate system. It is short lived in the atmosphere (9-15 years), yet its global warming potency is 20 times more effective than carbon dioxide in trapping heat in the atmosphere. Reducing methane emissions will lessen climate warming in a short time. Human-influenced sources of methane include landfills, natural gas and petroleum production and distribution systems, agricultural activities, coal mining, stationary and mobile combustion, wastewater treatment, and certain industrial processes. About 60% of global methane emissions come from these sources and the rest are from natural sources (Intergovernmental Panel on Climate Change, 2001), including wetlands, termites, oceans, and hydrates (US Climate Change Science Program, 2006).

- **Traditional cooking stoves:** According to US scientists 'traditional cooking stoves used in developing countries may have a much greater impact on global warming than expected, as they emit more harmful smoke particles than previously thought'. At the same time, researchers at the University of Illinois revealed that more than 80% of families cook their meals over open wood fires in Honduras. Furthermore, a report published in the American Chemical Society journal 'Environmental Science & Technology' main-

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tained that stoves produced twice as many smoke particles than had been predicted by previous laboratory studies (American Chemical Society, 2008).

- **Water vapour:** Water vapour is the most prevalent and most powerful greenhouse gas on the planet. It is increasing due to warming caused by carbon dioxide, methane and other greenhouse gases. It contributes to the Greenhouse Effect and leads to global warming. Water vapour makes up 60% of the greenhouse gasses; 20% is carbon dioxide and the other 20% nitrous oxide, methane, ozone and other varieties of grasses (What Causes Global Warming, n.d.).

- **Greenhouse gas emissions:** Many chemical compounds found in the Earth's atmosphere act as "greenhouse gases." These gases allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation (heat). Greenhouse gases absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy sent from the sun to the Earth's surface should be about the same as the amount of energy radiated back into space, in order to leave the temperature of the Earth's surface roughly constant. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide, methane, and nitrous oxide), while others are exclusively human-made, such as gases used in aerosols (Energy information administration, 2004).

- **Human activities:** According to Global-Warming.lesinth.com (2007), the following human activities cause global warning:

  a) *Driving a car* sends out emissions of carbon monoxide. An average car annually produces 22g CO for every 12,500 miles driven (EPA, 1997), which is multiplied by other vehicles. Motor vehicles generate three major pollutants namely hydrocarbons, nitrogen oxides and carbon monoxide. Hydrocarbons react with nitrogen oxides in the presence of sunlight and can cause eye irritation, coughing, wheezing, and shortness of breath and can lead to permanent lung damage. Nitrogen oxides also contribute to the formation of ozone and contribute to the formation of acid rain and to water quality problems. Carbon monoxide is a colorless, odourless, deadly gas. It reduces the flow of oxygen in the bloodstream and can harm mentally and visually. In urban areas, motor vehicles produce up to 90% of carbon monoxide in the air (National Safety Council, 2008).

  b) *Deforestation* i.e. cutting down large amounts of trees decreases the curative abilities of forests. Trees need carbon dioxide to live, cutting off

large trees in one place imbalances the volume of carbon dioxide. The remaining trees can't absorb all of the carbon floating in the atmosphere. Hence, the carbon rises in volume in the atmosphere and causes global warming. For example, Burundi produces (47.6%), Nigeria (31.1%), and Uganda (21.1%) carbon dioxide. Reasons for deforestation are: clear-cutting for charcoal production; large roads and infrastructure projects, wildfires that destroy the forest canopy, dam construction, volcanic eruptions, chemical defoliants; and, urban expansion etc.

c) *Chemicals* like methane and nitrous oxide when used for different purposes, e.g. rearing of domestic animals such as cows in a congregated mass or the growth of rice in flooded paddy fields, use of artificial fertilizers, can cause global warming.

d) *Carbon dioxide* is produced by human activities when coal, oil, and natural gas (fossil fuels) are burned to produce energy used for transportation, manufacturing, heating, cooling, electricity generation, and other applications.

e) *Changes in land use*, e.g., clearing land for logging, ranching, and agriculture, also increases carbon dioxide emissions (U.S. Global Change Research Information Office, 2006).

Impact of global warming and climate change: The major global impacts are discussed below.

- **Spread of disease:** As northern countries warm, disease carrying insects migrate north, bringing plague and disease with them, where malaria has not been fully eradicated (Walker, 2008).

- **Warmer waters and more hurricanes:** hurricanes get their enormous energy from warm waters, so the warmer the water, the more fuel a storm has to either start up or get stronger. This is how there have been more hurricanes in the past decade and will continue increasing (MSNBC.com, 2008, Vergano for USA Today, 2008).

- **Increased probability and intensity of droughts and heat waves:** some areas of Earth will become wetter and others will suffer serious droughts and heat waves due to global warming. Africa will receive the worst of it, with more severe droughts. Water is already a rare commodity in some parts of Africa. According to the Intergovernmental Panel on Climate Change, global warming will aggravate the conditions and could lead to conflicts and war.

- **Economic consequences:** for instance, hurricanes cost billions of dollars in damage, diseases cost money to treat and control and conflicts all will have major adverse effect on economy.

- **Polar ice caps melting:** dangerous in four ways. First**,** it will raise sea levels. There are 5,773,000 cubic miles of water in ice caps, glaciers, and permanent snow. With the melting of these glaciers the sea level would rise. Second**,** melting ice caps will imbalance the global ecosystem. The ice caps are fresh water, and when they melt they will desalinate the ocean. The desalinization of the gulf current will disturb ocean currents, which regulate temperatures. Third**,** temperature rises and changing landscapes in the Artic Circle will endanger several species of animals. Fourth**,** global warming could increase with the ice caps gone. Ice caps are white, and reflect sunlight, much of which is reflected back into space, which further cools Earth. If the ice caps melt, the only reflector is the ocean. Darker colours absorb sunlight, and that will further warm the Earth (Simmons blogs, 2007).

- **Greenland's Melting & higher sea level:** Greenland is melting at a rate of 52 cubic miles per year. If Greenland's entire ice melts, it would lead to a global sea level rise of 21 feet (Hotz, 2006).

- **Giant "Sand Seas" in Africa:** Global warming may unleash giant "sand seas" in Africa, in places where there is no vegetation. Shortage of rainfall and increasing winds may "reactivate" the now stable Kalahari dune fields (Lovgren, 2005).

- **Florida's National Marine Sanctuary in Trouble:** Global warming is "bleaching" the coral in the Florida Keys National Marine Sanctuary, killing the coral and local fish that live among the coral for protection, and therefore also having an adverse effect on tourism (Washington Post, 2007).

- **Oceans turning to acid:** When CO_2 gas dissolves into the ocean it produces carbonic acid "If CO_2 from human activities continues to rise, the oceans will become so acidic by 2100 it could threaten marine life in ways we can't anticipate," (Caldeira, 2005).

- **Rivers are drying up:** the sacred Ganges River in India is beginning to run dry. Many climate scientists already predict that less rain will fall annually in parts of Africa within 50 years due to global warming. Geologists recently projected a 10% to 20% drop in rainfall in northwestern and southern Africa by 2070. That would leave Botswana with just 23 percent of the river water it has now; Cape Town would be left with just 42 percent of its river water (Appel for National Geographic News, 2006).

- **Volcanic eruptions:** British scientists warn of another possible side effect of climate change – a surge of dangerous volcanic eruptions (Australian Broadcasting Corporation (ABC) News Australia, 2007).

- **Death by smog;** According to Canadian doctors smog-related deaths could rise by 80% over the next 20 years (CBC News, 2008).

- **More heart attacks:** global warming will bring with it more cardiovascular problems, such as blockage of heart's arteries.

- **More mould and ragweed meaning more allergies and asthma** (Mitchell, 2004).

- **Spread of Dengue Fever**

- Starvation & famine because global warming affects agriculture (Economic Times, 2007).

- Increased border tensions and National Security problems due to increased number of refugees (Revkin and Williams, 2007).

Issues of global warming specific to Africa

Global warming poses even greater risks to some nations, particularly developing countries, including Africa, and low-lying countries where sea level rises will cause significant damage.

The issue of global warming has been receiving serious recognition in Africa since the report "Africa – Up in Smoke?" was released and now it is a major concern. It is felt that "any benefit from more aid to Africa will go up in smoke unless rich nations halt temperature rises that are robbing rainfall from a continent reliant on small-scale farming" (McCarthy, M. and Brown, 2005). G8 nations have failed to "join the dots" between climate change and Africa and unless global warming is checked, development gains will disappear. Due to global warming, Kenya's economy would be affected enormously, as the tea growing climate will become unsuitable – tea provides nearly a quarter of the country's export earnings. Southern Africa – Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe – could lose about 30 percent of their main crop of corn (Dunham, 2008). The sea level around the coast of Africa is projected to rise by 25cm by 2050 and East Africa's coastal zone will also be affected. The ice-cap on Mount Kilimanjaro has shrunk by more than 80% since 1900. East Africa's coral reefs are also in danger of disappearing.

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All of these call for a new model of development in Africa, in which strategies to increase human flexibility to cope with climate change and the stability of ecosystems are central. "If carbon pollution is left unchecked, climate change will have a pervasive effect on life in Africa. It will threaten the people, animals and natural resources that make Africa unique" (Desanker, 2002). Therefore, "It is important to understand that Africa and climate change are intrinsically linked, as climate change will affect the welfare of Africans for years to come" (Tutu, 2005). Western countries have a moral duty to act over global warming; these countries have been emitting greenhouse gases more than other countries" (Tutu, 2007).

Global warming has confronted Africa with several challenges; the major Africa specific challenges may consist of:

- Malaria, cholera prevalence: Malaria is climbing the mountains to reach populations in higher elevations in Africa. Cholera is growing in warmer seas. Dengue fever and Lyme disease are moving north. The higher elevations of Africa, the Andes mountains in South America and the Alps in Europe are warming at a faster pace than lowlands (Struck, 2006).

- Intense flooding and droughts;

- Intrusion of saltwater in freshwater zones;

- Rise of sea levels (afrol News, 2008);

- Extreme weather; increased rainfalls at high latitudes and drops in the tropics (Okeowo, 2007);

- Deforestation;

- Shortage of water;

- Giant "Sand Seas" in Africa with no vegetation;

- Famine and starvation;

- Increased border tensions and National Security due to more migration.

Possible solutions to prevent global warming and green gas emissions

Once knowing the causes and effects of global warming, it is critical to come up with solutions to thwart it. According to the report, "Africa – Up In Smoke?" African poverty and climate change are inseparable; the first cannot be solved without the second. Global warming will hit Africa badly. If greenhouse gas emissions continue unchecked, the global average temperature will reach 2°C

above pre-industrial levels by 2050. The first impacts to be experienced will be droughts and floods, as rainfall increases at high latitudes and drops in the tropics. Some glaciers will disappear, though crop yields in some countries could rise, scientists believe (Sample, 2008).

The more people realize its importance, the sooner the spread of global warming can be hampered. These causes are warnings to us to change our ways of living. Application of knowledge management is an important tool, which can be used by information professionals to help inhibit or minimize the effects of global warming. Some of the possible solutions to prevent global warming are:

- Reduction of pollution from vehicles and power plants; by increased reliance on renewable energy sources such as wind, sun and geothermal. If you can't afford to buy a new car fuel-efficient, reduce the use of a car, carpool to work or ride the bus, walk or ride a bike for short distances. Energy efficiency is the cleanest, safest, most economical way to restrain global warming.

- "Reduce Reuse .... Recycle"; Reuse of all is the easiest and the best way to recycle. Save containers, bags, anything you can use in the future. Also, the use of toilet and cloth napkins instead of paper, and the use of rechargeable batteries instead of disposable ones. Recycle is only effective if people purchase products made from recycled materials (Effects of global warming, 2007).

- Reduction of carbon footprint! Africa's "carbon footprint", the total amount of carbon dioxide and greenhouse gas emission is far smaller than other continents; still she is blamed for Africa's current rainy disaster. She has to reduce carbon footprint in order to reduce the global carbon dioxide gas emission (Okeowo, 2007).

- Organise more educative events like African Pavilion fair to market use of organic products (Organic African Pavilion, 2008).

- Development of new crop varieties and expansion of irrigation (Lobell et al. 2008).

- Re-think of aid policies for Africa in terms climate change; because the continent is uniquely vulnerable to it (McCarthy and Brown, 2005).

- Rich countries must cut their greenhouse gas emissions further, far beyond the targets laid down in the Kyoto Protocol (McCarthy and Brown, 2005).

- **Use clean wind and solar energy:** Harnessing the clean, abundant energy of the sun and wind is critical to solve the global warming problem. Solar en-

ergy technology has made remarkable progress. New photovoltaic cells can convert greater amounts of sunlight directly into electricity. Today the costs of wind and solar power are compatible with coal-fired plants (Sierra Club, n.d.)

- Union of Concerned Scientists recommends (2007) "Ten Personal Solutions" to reduce global warming; this can be applicable world-wide:

- **Decision about the car:** It is most important personal climate decision. One should buy a car with better gas mileage; which reduces global warming and it is also cost-effective.

- **Choose clean power:** Switch to electricity companies that provide 50 to 100 percent renewable energy.

- **Look for Energy Star**: Look for the Energy Star label on new appliances (refrigerators, freezers, furnaces, air conditioners, and water heaters use the most energy). They may be expensive but will really make a difference.

- **Unplug a freezer:** Unplug the extra refrigerator you rarely use, this can reduce the typical family's carbon dioxide emissions by nearly 10 percent.

- **Get a home energy audit:** Home energy audits offered by many utilities are useful. For example, installing a programmable thermostat to replace your old dial unit or sealing and insulating heating and cooling ducts, each can reduce a typical family's carbon dioxide emissions by about 5 percent.

- **Light bulbs replacement:** In the United States if one regular light bulb is replaced with an energy-saving model, global warming pollution can be reduced by more than 90 billion pounds over the life of the bulbs; which is equivalent to taking 6.3 million cars off the road.

- **Think before you drive:** Use the less fuel-efficient vehicle and join a carpool or take mass transit.

- **Buy good wood:** Check the source of the timber. Forests that are well managed are more likely to store carbon effectively because more trees are left standing and carbon-storing soils are less disturbed.

- **Plant a tree:** By planting a tree one can make a difference, it will store carbon, provide much-needed shade in the summer, and reduce energy bills and fossil fuel use.

- **Let policymakers know about your global warming concern:** It is important to network with policymakers to ensure they get timely and accurate in-

formation in order to make informed decisions about global warming solutions (Union of Concerned Scientists, 2007).

- Encourage government for increased initiatives to form policies to adapt climate change.

Application of Knowledge Management for Environmental Sustainability:

As mentioned earlier, Knowledge Management (KM) is an applied discipline in all types of operations, whether business, service, or education including social or cultural issues. KM aims at providing the right information to the right person at the right time. In the context of this paper, KM is used to provide information on global warming and environmental sustainability. KM can be applied in the following four ways in order to bring environmental sustainability in Africa:

KM as an information and communication Technology (ICT): To manage, store, retrieve and share knowledge, ICT is en essential and most important dimension of KM. Using the most recent web 2.0 technology, such as, syndicate, blogs, RSS, podcast, information professionals can take global warming and environmental sustainability related information to the whole community faster than ever before.

KM as a Discipline: Referring to KM as a discipline, Finneran (1999) argued that KM is 'helps spread knowledge of individuals or groups across organizations in ways that directly affect performance. Knowledge Management envisions getting the Right Information within the Right Context to the Right Person at the Right Time for the Right Business Purpose'. In this paper business purpose refers to research and managing knowledge on global warming and environmental sustainability issues. Informational professionals are expert in collecting, internalizing, repackaging and disseminating information. If they can make use of their expertise and make this one of their responsibilities, they can bring a revolution in reducing greenhouse gas emission.

KM as a Management Tool: According to management perspective, KM proponents consider KM as a management tool because it is used and exploited to improve overall organisational performance and to meet desired goals. KM is aligned with business plans and addresses issues related to organisational needs, stakeholders, culture, change management, training and motivation. In this paper, organisation refers to the whole world, and the desired goal is reduction of global warming effects and bringing about sustainable environments. Business plans incorporate national plans while stakeholders comprise each and every

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human being on earth. Organisational needs are global warming related issues such as, reduction of greenhouse gas emissions, reduction of carbon footprints, introduction of strong policies, creation of a culture of flexibility and change of mindset in terms of peoples' measures towards quality of life and comforts, training to adapt environmental friendly conditions and applying self-assessed measurements, taking responsibility to help our personal surroundings to be environmental friendly. Using all these management techniques, information professional can apply KM to bring a substantial difference in global warming.

KM as a Knowledge Transfer Device: To maintain environmental sustainability, it is essential to share and transfer global warming related knowledge to the community to innovate and to work together effectively in order to make a difference. Easterby-Smith and Lyles (2003) have described knowledge transfer as an important facet of knowledge management. Authors provided two models of knowledge transfer: network model and the knowledge transfer model. Using both the models information professionals can use KM as a knowledge transfer device. Network model multiplies knowledge through various networks, while using knowledge transfer model, knowledge can be transferred directly without any networks.

Conclusion: Based on the ongoing debate on global warming and environmental sustainability, this paper appeals to all informational professionals to revisit their moral values and attitudes concerning the natural world and other damaging affects of global warming and to contribute towards a sustainable environment by improving accessibility of information about the related issues. Meeting the challenges of global warming will require the following sustained effort over decades**:**

- Governmental efforts should establish and implement cutting edge climate policies and make them reach the public;

- Industrial efforts must innovate, manufacture, and operate under a new paradigm based on climate change threshold;

- Public efforts to adapt and transform to a more climate-friendly lifestyles, such as, reduction of pollution from vehicles and plants; by increased reliance on renewable energy sources; develop energy provision that does not rely mainly on burning fossil fuels such as coal, which increase carbon pollution (Pew Center on Global Climate Change, n.d.).

- A rethink of aid policy for Africa in terms of climate change;

- Development of environmental management system (EMS); and,

- Development of Environmental Knowledge Management (EKM) systems to filter relevant and useful information on environment and make it reach to public.

All of us contribute to global warming, so we all need to be part of the solution and participate in the above mentioned solutions. If all information professionals can take a pledge to educate and familiarize a larger number of fellow humans who are not aware of global warming causes, effects and solutions, it will reduce the amount of heat-trapping gases that we emit into the atmosphere and the amount of fossil fuels we use and consequently, lead the world towards a sustainable environment. In the absence of it, people would continue to be inadvertently destructive to the environment by their activities and misconceptions about their living style. "To make the information reaching an individual relevant and useful, KM systems generally include a capability to filter information. Environmental Knowledge Management (EKM) systems can intelligently filter environmental knowledge and deliver it to key market actors. Establishing the right knowledge networks is essential to making an EKM system work (Wernick, 2006). In becoming an integral part of global warming information management, information professionals can revolutionise dissemination of that information, taking information to all reaches of society and thereby, have positive impact on global warming. This can be realised in the following ways:

- By changing mind-set of people about style and standards of living through creating awareness of global warming causes, effects and possible solutions using web 2.0 techniques and other medias, such as; personal visits, seminars, exhibitions, videos, radio etc.;

- By collecting, internalising and repackaging information into knowledge to make it reach everyone in the community in a most accessible; user-friendly and understandable format);

- By facilitating the acquisition of a voice for environmental sustainability; where everyone appreciates the need to watch-out for environment pollution;

- By advocacy to Government to become part of the Global Warming Movement and reduce carbon dioxide emissions now;

- Encouraging advertising agencies to advertise more on global warming and possible solutions on the most popular channels by including more anecdotal features on environmental issues;

- By promotion to Ministry of Education to include a programme within the curriculum of schools, starting from primary to educate children on global warming;

- Campaigning for "Reduce Reuse .... Recycle";

- By encouraging people to plant a tree and asking one to plant a tree;

- By influencing policymakers to make them aware that you are concerned about global warming and encourage them to take more interest in these issues and make policies based on firm and informed decisions.

- Through constant reminders of environmental friendly and unhealthy issues;

- Questioning the validity of unhealthy chemical producing material, such as wrapping clingfilms and related law,

- Commitment to environmental sustainability; people are willing to adapt to an environment-friendly in day to day life;

- By making environmental lessons on how to reduce pollution and emission of carbon footprint simple and easily comprehensible and facilitating local or mobile training centres.

- Through contribution in development of Environmental Knowledge Management (EKM) systems;

- By networking with government to influence aid agencies' policies

- Through partnership with environmental agencies / lobbyist organisations to collaborate in training the community, and exchanging knowledge.

- By providing open and free access to impact documentaries or films such as the Al Gore film.

The paper concludes with Harfagar's words (n.d), which place a strong emphasis on the formative role of the library. Formation is "knowledge that you internalise and carry with you to have a more meaningful impact on the community, such as one who studies up on the roots of global warming and effects a more lasting change".

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THE ROLE OF LIBRARIES AND INFORMATION SERVICES IN ENSURING ENVIRONMENTAL SUSTAINABILITY

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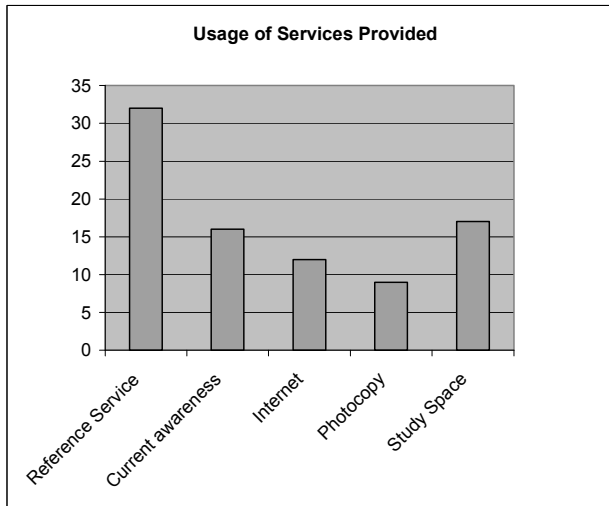
ECZ and Zambia Consolidated Copper Mines Investment Holdings (ZCCM-IH) has been implementing the Copperbelt Environment Project (CEP). The objectives of the project are to assists the Government of Zambia:

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
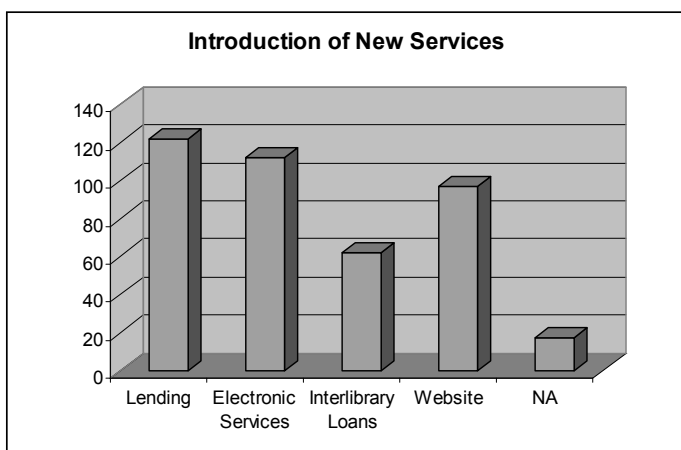
ICTs provide libraries with opportunities to:

- 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.

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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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LIBRARY AND INFORMATION SERVICES AND HUMAN RESOURCE DEVELOPMENT: IMPERATIVES FOR MEETING THE MILLENNIUM DEVELOPMENT GOALS (MDG).

Vicki Lawal

Abstract

Developing human resources has become an issue of concern among librarians worldwide, current developments in Information and Communication Technology (ICT), gender issues and women empowerment, HIV/AIDS and environmental degradation have indicated that Library and Information Science (LIS) professionals will, in the immediate future, need to re-position themselves to meet up with the challenges of the ever-growing information society. Secondly, the inter-dependent nature of the disciplines have necessitated that librarians in the twenty first century must possess specialised skills in order to maximise opportunities in the knowledge economy. More than ever before, the Library and Information Science (LIS) sector has been challenged by the dearth of information professionals in the field of Information and Communication Technology (ICT), cataloguing and classification, information literacy, knowledge management, intellectual property and other areas of democracy and governance. In Africa, some of the issues that have dominated the LIS landscape include the need to develop the needed competencies among LIS professionals in each of these areas through training of future librarians at higher education level and continuing education and staff development of current professionals to meet up with the challenges of the emerging global order. This paper highlights the urgency for a coherent plan of action to align the roles and responsibilities of LIS professionals in Africa in order to achieve the Millennium Development Goals.

Keywords: Millennium Development Goals (MDG), library services, Human resource development, Partnerships, information policy.

1.   Introduction: The Millennium Development Goals

The Millennium Development Goals (MDG) represent specific targets developed by the United Nations which are aimed at addressing issues of poverty, education, health, environmental conservation, increased access to Official Development Assistance (ODA) and debt forgiveness in developing countries. The

eight point agenda, supported by 18 targets and 48 indicators for the purpose of tracking progress towards development was ratified by 189 countries in 2000 and is expected to be achieved in 2015. The goals serve as guideposts for measuring progress made towards development which can be carefully monitored and revisions made to the strategies and policies aimed at achieving the goals. The terms of the goals indicate a unique agreement between developed and developing countries for which developing countries are held accountable to the United Nations for the achievement of these goals through continuous assessment of progress made in relation to the objectives, deadlines and benchmarks (Cleeve & Ndhlovu, 2004: 9, 10).

Since the declaration of the goals in 2000, significant progress has been made by different countries towards realisation. A major disparity however exists with African countries where poverty, child mortality, poor educational standards, HIV/AIDS, and environmental degradation have persisted. An analysis in the Global Poverty Report (2002: 10) shows particularly that Sub-Saharan Africa faces the greatest challenge of meeting the goals, currently, only North Africa has made significant progress in areas of poverty reduction, access to education, health and other sectors. Aside efforts towards deepening economic reforms that will attract foreign investment and strengthen democratic institutions, one of the major steps towards progress in achieving the goals in Africa include investing adequate resources for human resource development; disparities in access to educational facilities and other socio-economic constraints have hindered benefits in development policies in Africa. In the Library and Information Science (LIS) field, inadequacy of human capital have compounded problems of limited resources, weak management and poor technological skills thereby restricting the growth and recognition of the value of the LIS profession (Albright & Kawooya, 2007: 110).

2. Library services and human resource development:

The growing awareness of the importance of information along with the current influence of Information and Communication Technology (ICT) on the economic development of most countries has led to the emergence of concepts as the "Information society" or the "Knowledge economy" where information is considered a valuable national resource which if managed effectively can positively impact on the socio-economic development of a country (Arnold, 2004: 200). This situation has presented a challenge to the skills and competencies of LIS professionals globally in such areas as copyright and intellectual property, knowledge management, information literacy, HIV/AIDS, censorship, gender equality and other issues of democracy and governance; library services and the

very tenets which makes librarianship a public good has been put to question. To this end, calls have been made for a re-structuring of the educational curricula of the LIS profession by integrating value-based skills through strategic human resource development in order to meet the challenges of the information age (Vaagan, 2003: 156-157).

Human resource development, staff training and continuing education are considered a major factor in developing and motivating a vibrant and productive workforce in order to maximise productivity. According to Cribb (2005: 5), "Human resource development encompasses the broad set of activities that improve the performance of the individual and teams hence the organisation". He argues that the ultimate aim of training and development is the creation of a learning organisation which constantly reviews its mistakes and successes and adopts its activities regularly. Capacity building stands at the core of human resource development in librarianship especially with regards to socio-economic development, LIS education is critical and instrumental to the economic growth of a country with respect to the quality of the services provided (Britz, Lor, & Bothma, 2007: 103-104). In recent years, fundamental changes in the roles and responsibilities of librarians accompanied by continual changes in the work environment have aroused considerable debate among employers, LIS educators and professional associations as to the alignment between the academic curricula, the needs of employers and current socio-economic needs. Consequently, LIS educators have proposed a broad spectrum of skills and competencies that encompass a set of standards and values that are relevant for a technologically driven economy (Fisher, Hallaman & Patridge, 2005: 13-15). In Africa particularly, commentators have noted that the level of LIS education is not sufficient to cope with the exponential growth of information globally; re-defining the curricula has become necessary to improve the societal role and professional status of the LIS professional (Johnson, 2007: 66, 67).

A look at the curriculum of LIS education in Africa shows that the role of the LIS professional has been limited to the traditional tasks of cataloguing and classification, preservation and transmission of human record which has hindered the transformation of the profession from the library-centred to the information-centred universe (Vaagan, 2003: 158-159). Aina, (2005: 165) noted that the influence of Western educational system on the of the LIS educational curricula in Sub-Saharan Africa has failed to address the unique cultural needs of the continent thereby limiting its service role. This view is supported by Albright and Kawooya (2007: 109, 118-119) when they observed that the inclusion of oral tradition in LIS education for example, will improve efforts towards ca-

pacity building in utilizing the methods of information sharing which is already part of African culture especially in handling issues of HIV/AIDS thereby expanding the perceived value of the LIS profession in the society and the efforts towards tackling other socio-economic problems. Evidently, a re-structured African LIS curricula should incorporate a list of competencies for graduates in order to prepare them for employment in areas that reflect the socio-economic and political needs of the continent. Within the context of the Millennium development Goals (MDG), LIS education should seek to play a pivotal role in eliminating problems of child mortality, poverty eradication and gender equality by taking a leadership role in the dissemination of useful information, in this way, LIS professionals in Africa will achieve the relevance and recognition that has so far been lacking in the socio-economic sector (Britz, Lor & Bothma, 2007: 69).

3. Imperatives for achieving the Millennium development Goals (MDG):

In achieving the MDG's, Cleeve and Ndholvu (2004: 10) noted that African countries particularly face a difficult challenge as they are not only marginalised from the benefits of globalisation but are also exposed to its threats due to problems of weak governmental structures and increasing poverty; for LIS professionals in Africa, the immediate task therefore is to generate the momentum needed to achieve the goals in 2015 specifically in the following areas:

- Information policy: Information is central to every human enterprise; the socio-economic situation of a country determines the posture of its information policy. The availability and accessibility of information is often linked to its socio-economic development in aspects of education and leisure, science and industrial development and the enhancement of an equitable and democratic society. Similarly, information flow and the multinational ownership of information resources have created complex legal problems in the application of copyright and its related issues (Arnold, 2004: 200, 205). This situation provides LIS professionals in Africa the opportunity to develop relevant information policy goals on such issues as the allocation of funds on research and development especially in ICT and on issues that address conditions of rapid social change and the entrenchment of democratic ideals in the continent. Issues of governance are of paramount importance to attaining the Millennium development Goals (MDG) specifically as they have a bearing on economic growth levels and poverty reduction; LIS professionals can play an important role in encouraging participatory democratic institutions and the respect for the rule of law in ensuring accountability through appropriate information policies, their contribution will ensure sustainable development by

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utilizing information as a vehicle for alleviating poverty and democratizing the society.

- Library services: Evolutionary processes in library services have necessitated a shift from the traditional practices to more innovative processes. Global forces currently influence issues within the LIS landscape, the prevailing paradigm have been issues of leadership and technologically driven procedures of work methods all of which provide service opportunities for librarians; continuous training and staff development is therefore necessary to keep abreast of changes and provide better services to a more larger and complex set of users (Wedgeworth, 1998: 60). User education in particular provides LIS professionals the opportunity to become key educators by inculcating the needed competencies to the information user. Within the higher education sector, concerns have arisen as to the need to help develop critical thinking and problem-solving skills among students to enable them function across different cognitive domains and subject areas and in the workplace environment (Vaagan, 2003: 159) and (Fisher, Hallaman & Partridge, 2005: 16). The digital library context, which is more heterogeneous and fast-changing, demands that subject specialists in particular are able to master the variety of complex databases and their various interfaces, this re-enforces the need for subject expertise essential for the promotion of information literacy and life-long learning. Through such specialised skills, librarians can define new jurisdictions in their domain of expertise; the need for human resource development in this regard can therefore not be over emphasised (Joint, 2003:418).

- Partnerships: The challenge to develop future leaders in the LIS African sector impinges on our ability to tackle other socio-economic problems with regards to the Millennium Development Goals (MDG). Collaborative approaches to service delivery helps to increase the flow of information cross countries and regions and facilitate the extension of ideas, through partnerships, LIS professionals in Sub-Saharan Africa can re-define their role in the dissemination of information in HIV/AIDS, the promotion of gender equality and women empowerment, environmental sustainability and poverty reduction (Albright & Kawooya, 2007: 112, 116). Similarly, libraries as related entities can seek to actively pursue a natural alliance with educational institutions in developing their own information infrastructure through the establishment of consortia organisations which promote sharing of integrated library systems, collection development, purchasing of electronic publications and staff development. An area where this has proved helpful is the negotiation for licensing agreements for the use of electronic resources where emerging copyright laws and issues of intellectual property have limited the

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rights of use and access to some electronic resources. LIS professionals in Africa must take advantage of the leverage such cooperative arrangements provide to develop a collective agenda for addressing areas of common need (Nfila & Darko-Ampem, 2000: 205, 207). Through partnerships also, LIS professional associations can establish standards for professional experiences that would provide a basis for continuing professional education and serve as a tool for advocacy in recruiting new talents into the field which will shape the continuing development of libraries and strengthen existing library systems (Uta, 2002: 3).

It is evident from the fore–going that the educational ecology of the LIS profession in Africa is fragile and endangered (Smith, 1992: 37) and the dynamics of the profession in the emerging global order will necessitate that we are able to recruit the best people into the field by re-structuring the LIS educational curricula to address the socio-economic and political needs of the continent by equipping graduates with the needed skills for competitive advantage. In the next few decades, it is anticipated that widespread access to information sources will generate greater expertise in unexpected areas in the LIS field; competing professional and commercial forces will require that libraries and librarians are able to assume their professional role in the global information structure (Wedgeworth, 1998: 65). Already, as noted by Vaagan (2003: 159), the professional status of librarians is currently being blurred by a gradual encroachment of ICT-induced information functions over areas that are traditionally seen as LIS territory, some commentators have proffered the formation of new roles and identities for LIS professionals to address this situation and to provide better opportunities for service (Ocholla, 1998) and (Cribb, 2005:5). There is therefore, considerable pressure on the LIS profession in Africa to re-define and broaden its market and status as a workforce that is well motivated and strategically positioned to manage the 21st century global information structure.

4.   Conclusion and recommendations:

Unlike other programmes of development, a key feature of the Millennium Development Goals is the built-in mechanism designed to measure progress towards achieving minimum standards for sustainable development. So far, efforts towards meeting the goals have succeeded in raising awareness of the issues involved especially to policy makers (Cribb & Ndhovu, 2004: 10). Libraries are a focal point of communities and provide opportunities for growth through information dissemination, for the LIS sector in Africa, issues of declining resource support and the untenable attitude towards information diffusion may constitute a

problem in measuring success with respect to library services (Ocholla, 1998); however, collaborative efforts and developing human capability for more innovative services as well as developing enhanced methods for assessing information services are imperative for meeting the goals, libraries and LIS professionals can:

- Serve as pivots for disseminating government's commitment to the MDG's which are not often generally visible.

- Provide statistical data of how the goals are being aligned to governmental policies and programmes and progress made towards achieving them.

- Create awareness of the importance of the goals by providing valuable information that share best practices between Africa and other continents.

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